WISCONSIN STATUTES

AND

ADMINISTRATIVE CODE

RELATING TO

PRIVATELY-OWNED WASTEWATER TREATMENT SYSTEMS (POWTS)

OCTOBER 2012

State of Wisconsin
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INTRODUCTION

The development of statutes and rules is ongoing. Therefore, these statutes and rules may be revised subsequent to the printing of this book. Most local libraries maintain current sets of the Wisconsin Statutes. Both statutes and rules are available at Web pages of the Wisconsin Legislature.

All Wisconsin Statutes and Administrative Codes are available on the Internet at the following addresses:

Statutes: http://www.legis.state.wi.us/rsb/statutes.html
Rules: http://www.legis.state.wi.us/rsb/code/codtoc.html

The Division of Industry Services' Private Onsite Wastewater Treatment Systems (POWTS) program protects public health and the waters of the state by regulating onsite wastewater treatment and recycling systems, and by promoting the use of the best available technology to provide onsite sewage treatment system solutions for property owners.

CHAPTER 145

PLUMBING AND FIRE PROTECTION SYSTEMS AND SWIMMING POOL PLAN REVIEW

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Cross−reference: See also chs. SPS 305, 381, 382, 383, 384, 385, 386, 387, and 391, Wis. adm. code.

145.01 Definitions. In this chapter:

(1) AUTOMATIC FIRE SPRINKLER CONTRACTOR. "Automatic fire sprinkler contractor" means any individual, firm or corporation who has paid the annual license fee and obtained a license to conduct a business in the design, installation, maintenance or repair of automatic fire sprinkler systems.

(2) AUTOMATIC FIRE SPRINKLER SYSTEM. "Automatic fire sprinkler system", for fire protection purposes, means an integrated system of underground and overhead piping designed in accordance with fire protection engineering standards. The system includes a suitable water supply, such as a gravity tank, fire pump, reservoir or pressure tank or connection beginning at the supply side of an approved gate valve located at or near the property line where the pipe or piping system provides water used exclusively for fire protection and related appurtenances and to standpipes connected to automatic sprinkler systems. The portion of the sprinkler system above ground is a network of specially sized or hydraulically designed piping installed in a building, structure or area, generally overhead, and to which sprinklers are connected in a systematic pattern. The system includes a controlling valve and a device for actuating an alarm when the system is in operation. The system is usually activated by heat from a fire and discharges water over the fire area.

(3) AUTOMATIC FIRE SPRINKLER SYSTEM APPRENTICE. "Automatic fire sprinkler system apprentice" means any person other than an automatic fire sprinkler system contractor or a journeyman automatic fire sprinkler system fitter who is engaged in learning and assisting in the installation of automatic fire sprinkler systems and who is employed under an apprentice contract under s. 106.01.

(3m) CROSS−CONNECTION CONTROL DEVICE. "Cross−connection control device" means any mechanical device that automatically prevents backflow from a contaminated source in or into a water supply system.

(3s) CROSS−CONNECTION CONTROL TESTER. "Cross−connection control tester" means a person who conducts a performance test of an installed cross−connection control device.

(4) DEPARTMENT. "Department" means the department of safety and professional services.

(4m) FAILING PRIVATE ON−SITE WASTEWATER TREATMENT SYSTEM. "Failing private on−site wastewater treatment system" has the meaning specified under s. 145.245 (4).

(5) GOVERNMENTAL UNIT RESPONSIBLE FOR REGULATION OF PRIVATE ON−SITE WASTEWATER TREATMENT SYSTEMS. "Governmental unit responsible for the regulation of private on−site wastewater treatment systems" or "governmental unit", unless otherwise qualified, means the county except that in a county with a population of 500,000 or more these terms mean the city, village or town where the private e on−site wastewater treatment system is located.

(6) JOURNEYMAN AUTOMATIC FIRE SPRINKLER FITTER. "Journeyman automatic fire sprinkler fitter" means any person other than an automatic fire sprinkler contractor who is engaged in the practical installation of automatic fire sprinkler systems.

(7) JOURNEYMAN PLUMBER. "Journeyman plumber" means any person other than a master plumber, who is engaged in the practical installation of plumbing.

(8) MASTER PLUMBER. "Master plumber" means any person skilled in the planning, superintending and the practical installation of plumbing and familiar with the laws, rules and regulations governing the same.

(9) PIPELAYER. "Pipelayer" means a person registered under s. 145.07 (11).

(10) PLUMBING. (a) "Plumbing" means:

1. All piping, fixtures, appliances, equipment, devices, and appurtenances in connection with water supply systems, water distribution systems, wastewater drainage systems, reclaimed water systems, and stormwater use systems, including hot water storage tanks, water treatment devices, and water heaters connected with these systems and also includes the installation thereof.

2. The construction, connection, installation, service, or repair of any drain or wastewater piping system that connects to the mains or other terminal within the bounds of, or beneath an area subject to easement for highway purposes, including private on−site wastewater treatment systems and stormwater treatment and dispersal systems, and the alteration of any such systems, drains or wastewater piping.

3. The construction, connection, installation, service, or repair of water service piping that connects to the main or other water utility service terminal within the bounds of, or beneath an area subject to easement for highway purposes and its connections.

4. The water pressure system other than municipal systems as provided in ch. 281.

5. A plumbing and drainage system so designed and vent piping so installed as to keep the air within the system in free circulation and movement; to prevent with a margin of safety unequal air pressures of such force as might blow, siphon or affect trap seals, or retard the discharge from plumbing fixtures, or permit sewer air to escape into the building; to prohibit cross−connection, contamination or pollution of the water supply and distribution systems; and to provide an adequate supply of water to properly serve, cleanse and operate all fixtures, equipment, appurtenances and appliances served by the plumbing system.

(br) "Plumbing" does not include any of the following:

1. A rainwater gutter or downspout down to the point that it discharges into a plumbing system, a subsoil drain, or a foundation drain.

2g. A process water reuse system if the process water reuse system is not connected to any plumbing fixture or appliance.

2m. A stormwater culvert under a roadway or walkway that is placed there only to equalize the water level from one end of the culvert to the other end.

3. The practical installation of process piping within a sewage disposal plant.

(11) PLUMBING APPRENTICE. "Plumbing apprentice" means any person other than a journeyman or master plumber who is engaged in learning and assisting in the installation of plumbing and drainage.

(12) PRIVATE ON−SITE WASTEWATER TREATMENT SYSTEM. "Private on−site wastewater treatment system" means a sewage treatment and disposal system serving a single structure with a septic tank and soil absorption field located on the same parcel as the structure. This term also means an alternative sewage system approved by the department including a substitute for the septic tank or soil absorption field, a holding tank, a system serving more than one structure or a system located on a different parcel than the structure. A private on−site wastewater treatment system may be owned by the property owner or by a special purpose district.

(13) REGISTERED LEARNER. "Registered learner" means a person, other than a restricted plumber licensee, who is learning a limited type of plumbing and is engaged in assisting a restricted plumber licensee.

(14) RESTRICTED PLUMBER LICENSEE. "Restricted plumber licensee" means any person licensed as a master plumber (restricted) or a journeyman plumber (restricted) under s. 145.14.

(15) UTILITY CONTRACTOR. "Utility contractor" means a person licensed under s. 145.07 (10).

(17) WATERS OF THE STATE. "Waters of the state" has the meaning specified under s. 281.01 (18).

History: 1971 c. 255; 1977 c. 314; 1979 c. 34, 221; 1981 c. 20; 1983 a. 189, 410, 538; 1991 a. 39; 1993 a. 213, 322; 1995 a. 27 ss. 4355 and 9116 (5); 1995 a. 227; 2009 a. 200, 291; 2011 a. 32, 146.

145.02 Powers of department. (1) The construction, installation and maintenance of plumbing in connection with all buildings in this state, including buildings owned by the state or any political subdivision thereof, shall be safe, sanitary and such as to safeguard the public health and the waters of the state.

(2) The department shall have general supervision of all such plumbing and shall after public hearing prescribe and publish and enforce reasonable standards therefor which shall be uniform and of statewide concern so far as practicable. Any employee designated by the department may act for the department in holding such public hearing. To the extent that the historic building code applies to the subject matter of these standards, the standards do not apply to a qualified historic building if the owner elects to be subject to s. 101.121.

(3) The department may exercise such powers as are reasonably necessary to carry out the provisions of this chapter. It may, among other things:

(a) Employ competent supervisors who shall be licensed plumbers, and other assistants, prescribe their qualifications and assign their duties.

(b) Conduct investigations and experiments for the advancement of technical knowledge relating to plumbing and may hold public meetings and attend or be represented at such meetings within or without the state.

(c) Enter and inspect at reasonable hours plumbing installations on private or public property and may disseminate information relative to the provisions of this chapter.

(d) Prepare and cause to be printed such codes, bulletins or other documents as may be necessary and furnish copies thereof to those engaged in the plumbing business and to the public upon request.

(e) Furnish upon request of the owner of the building or of the plumber making the plumbing installation, recommendations or a certificate of inspection.

(f) Issue special orders directing and requiring compliance with the rules and standards of the department promulgated under this chapter whenever, in the judgment of the department, the rules or standards are threatened with violation, are being violated or have been violated. The circuit court for any county where violation of such an order occurs has jurisdiction to enforce and shall enforce any order brought before it by injunctive and other appropriate relief. The attorney general or the district attorney of the county where the violation of the order occurs shall bring action for its enforcement. The department may issue an order under this paragraph to abate a violation of s. 254.59.

(g) By rule, fix fees for the examination and approval of plans of plumbing systems and collect the same.

(h) Promulgate rules concerning the testing of cross−connection control devices, including rules identifying the types of cross−connection control devices that may be tested only by a registered cross−connection control tester and the circumstances under which cross−connection control devices shall be tested.

(4) (a) The department shall prescribe rules as to the qualifications, examination and licensing of master and journeyman plumbers and restricted plumber licensees, for the licensing of utility contractors, for the registration of plumbing apprentices and pipe layers and for the registration and training of registered learners. The plumbers council, created under s. 15.407 (16), shall advise the department in formulating the rules.

(b) The department may promulgate rules for the qualification and registration of cross−connection control testers.

History: 1971 c. 194; 1973 c. 90; 1975 c. 39; 1977 c. 275, 314; 1979 c. 34, 221; 1981 c. 341; 1983 a. 410; 1993 a. 27, 213, 322; 1995 a. 27; 2011 a. 32.

Cross−reference: See also chs. SPS 381, 382, 383, 384, 385, 386, 387, and 391, Wis. adm. code.

Sub. (2) did not invalidate a town ordinance prohibiting residential sewage holding tanks. Konkel v. Town of Raymond, 101 Wis. 2d 704, 305 N.W.2d 190 (Ct. App. 1981).

Counties must obtain state approval before permitting private experimental sanitation systems. Citizen committees appointed by the county board may not engage in setting plumbing standards. 60 Atty. Gen. 209.

145.035 Temporary permits. The department may issue temporary revocable permits to master and journeyman plumbers pending examination, and for such purpose may appoint agents without compensation or may authorize one of its examiners or plumbing supervisors to hold a special permit examination, the result of which to be reported to the department in writing. The department may make rules and prescribe procedure governing the issuance of such permits.

History: 1971 c. 40.

145.04 Water and sewerage systems. (1) ORDINANCE RULES. A 1st, 2nd or 3rd class city with a water system or sewerage system shall, and a village, 4th class city, town, county or metropolitan sewerage commission may, by ordinance, prescribe rules relating to local permits for the installation, alteration and inspection of plumbing to safeguard the public health.

(2) NO LOCAL LICENSES. No city, village, town, town sanitary district, county, metropolitan sewerage district commission or other agency may require the licensing of any person licensed or registered under this chapter or prohibit the person from engaging in or working at business within the scope of the person's license or permit.

(3) REPORTS TO DEPARTMENT. The authorities of any such city or metropolitan sewerage district shall report to the department each failure on the part of a state licensed plumber to qualify as a journeyman or master plumber and each willful violation of any plumbing regulation.

History: 1971 c. 194; 1989 a. 56; 1993 a. 482; 1995 a. 378.

145.045 Certification of soil testers. (1) POWERS AND DUTIES. The department shall by rule establish an examining program for the certification of soil testers, setting such standards as

the department finds necessary to accomplish the purposes of this chapter. Such standards shall include formal written examinations for all applicants. The department shall charge applicants for the cost of examination and certification. After July 1, 1974, no person may construct soil bore holes or conduct soil percolation tests or other similar tests specified by the department that relate to private on−site wastewater treatment systems unless the person holds a valid certificate issued under this section.

(2) REVOCATION OF CERTIFICATE. The department may revoke or suspend the certification of any soil tester but only after a formal hearing for the practice of any fraud or deceit in obtaining the certificate or any gross negligence, incompetence or misconduct in the practice of soil testing.

(3) PLUMBERS AND SEPTIC TANK INSTALLERS. A plumber or septic tank installer may also be a soil tester and install any system after approval of the site or project by the department or the governmental unit responsible for the regulation of private on−site wastewater treatment systems.

History: 1973 c. 287; 1975 c. 41; 1979 c. 34, 221; 1993 a. 482; 2007 a. 147; 2011 a. 146.

Cross−reference: See also s. SPS 305.33, Wis. adm. code.

Soil absorption tests conducted by persons certified under this section must be accepted by county governments. 63 Atty. Gen. 586.

145.05 Plumbing supervisors, supervision. (1) The common council of a 1st, 2nd or 3rd class city with a water system or sewerage system, or the officer or board in charge, shall appoint one or more plumbing supervisors, who shall be licensed plumbers, and unless under civil service shall serve for a term of 4 years or more subject to removal for just cause except as otherwise provided by ordinance when first appointed, but need not renew their licenses while they continue in office. The common council of a 4th class city, the board of a village, town or county or the commissioner in charge of any metropolitan sewerage district may appoint one or more plumbing supervisors who shall be practical plumbers, skilled sanitarians, or competent persons familiar with plumbing and unless under civil service shall serve for a term of 4 years or more subject to removal for just cause except as otherwise provided by ordinance. They shall supervise all plumbing, new or alterations or repairs, and report to the appointing body violations of regulations, and perform such other appropriate duties as may be required. Their compensation shall be fixed by the council, board or commission.

(2) If a water system or sewerage system is established in any city, village, town or metropolitan sewerage district which has not provided for a board or officer to supervise plumbing, drainage and sewerage, the department shall take immediate and entire control of plumbing, drainage and sewerage intended to be connected with the water system or sewerage system, and exercise all the powers conferred by this section until such municipalities or district provides for such supervision.

History: 1989 a. 56; 1995 a. 378.

145.06 License or registration required; exemptions. (1) (a) No person may engage in or work at plumbing in the state unless licensed to do so by the department. A master plumber may work as a journeyman. No person may act as a plumbing apprentice or pipe layer unless registered with the department.

(b) No public utility shall engage in or perform plumbing unless exempted by sub. (4).

(2) No person shall install plumbing unless at all times a licensed master plumber is in charge, who shall be responsible for proper installation. Licenses shall be issued only to individuals and no license shall be issued to or in the name of any firm or corporation. No such license shall be transferable. It is unlawful for any licensed master plumber to allow the use of his or her license, directly or indirectly, for the purpose of obtaining local permits for others or to allow the use of his or her license by others to install plumbing work.

(3) Each member or employee of a partnership or limited liability company or each officer or employee of a corporation engaging in the business of superintending plumbing installations shall be required to apply for and obtain a master plumber's license before engaging in the work of superintending plumbing installations.

(3m) No person may test the performance of cross−connection control devices when the test is required by the department unless he or she is registered with the department as a cross−connection control tester.

(4) This section shall not apply to:

(a) Plumbing work done by a property owner in a one−family building owned and occupied by him or her as his or her home or farm building, except where such license is required by local ordinance.

(b) Plumbing from the private water supply pump to and including the initial pressure tank and connection to an existing water distribution system, when installed by persons licensed under ch. 280.

(c) Installation of sewer and water service piping from the main to the property lot line, when installed by authorized municipal utility employees or sewer and water utility installers under a contract with a municipality.

(d) Making minor repairs to faucets, valves, pipes or appliances, repair or replacement of electrical or gas energy or other automatic valves or control devices or removing of stoppages in waste or drainage pipes.

(e) Installation of sewer and water mains, when installed by sewer and water utility contractors and their employees.

(f) Installation, repair or replacement of water service piping, from the property line to the meter, including meter installation, to service any building or structure or proposed building or structure when such installation, repair or replacement is accomplished by employees of a public municipal water utility, providing such utility regularly has engaged in such installation, repair or replacement for at least 5 years prior to January 1, 1964.

History: 1977 c. 314; 1983 a. 189; 1993 a. 112, 322, 482, 490; 1995 a. 227.

Cross−reference: See also ss. SPS 305.90, 305.91, 305.92, 305.93, 305.94, 305.95, 305.96, 305.97, 305.98, and 305.99, Wis. adm. code.

145.07 Licenses and registration; examinations. (2) Application for a master or journeyman plumber's examination, temporary permit or license shall be made to the department with fees. Unless the applicant is entitled to a renewal of license, a license shall be issued only after the applicant passes a satisfactory examination showing fitness. No such license or permit shall be transferable.

(3) An applicant for examination for licensure as a master plumber shall submit evidence satisfactory to the department as follows:

(a) A specific record of not less than 1,000 hours per year experience for 3 or more years as a licensed journeyman plumber in this state; or

(b) Graduation in engineering from a school or college approved by the department.

(4) An applicant for examination for licensure as a journeyman plumber shall submit evidence satisfactory to the department that he or she has completed a plumbing apprenticeship under s. 106.025.

(5) Any resident who has been actively engaged in this state in a limited type of plumbing installation work for a period of not less than 1,000 hours per year for 2 or more years as a licensed journeyman plumber (restricted) may be examined for licensure as a master plumber (restricted).

(6) Applicants for examination for licensure as a journeyman plumber (restricted) shall have completed one continuous year of work experience consisting of not less than 1,000 hours per year and give evidence of completion of shop training and related instruction as the department by rule requires.

(7) A person shall be registered as a registered learner with the department without examination or training prequalifications and shall not be required to be employed under an apprentice contract under s. 106.01.

(9) Master plumbers, journeyman plumbers and apprentices are not subject to the restrictions under s. 145.14.

(10) An application for a utility contractor's license shall be made to the department with fees required by the department under s. 145.08 (1) (o). The department shall issue a utility contractor's license to any person who is skilled in the planning, superintending and practical installation, within public or private premises, of piping which conveys sewage, rain water or other liquid wastes to a legal point of disposal and who is skilled in the design, planning, superintending and practical installation of water service piping from the street main to the immediate inside building perimeter.

(11) An application for registration as a pipelayer shall be made to the department with the fees required by the department under s. 145.08 (1) (q). The department shall approve the registration of any person as a pipelayer if the person is employed by a utility contractor and if the person is engaged in the practical installation, within public or private premises, of piping which conveys sewage, rain water or other liquid wastes to a legal point of disposal or engages in the practical installation of water service piping from the street main to the immediate inside building perimeter.

(12) An applicant for registration as a cross−connection control tester shall submit an application and registration fee to the department as prescribed by the rules promulgated under s. 145.02 (4) (b).

History: 1975 c. 39; 1977 c. 314; 1981 c. 60, 314; 1993 a. 213, 322; 1995 a. 286; 2009 a. 291; 2011 a. 146, 257.

145.08 Fees; expiration of license; registration. (1) The department shall establish fees by rule for the examinations, licenses, and registrations specified in this section. The fees established by the department shall as closely as possible equal the cost of providing the following services:

(a) Administering a master plumber's examination.

(b) Issuing a master plumber's license.

(c) Administering a journeyman plumber's examination.

(d) Issuing a journeyman plumber's license.

(e) Issuing a temporary permit pending examination and issuance of a license for master plumber or journeyman plumber.

(f) Administering a master plumber's (restricted) examination.

(g) Issuing a master plumber's license (restricted).

(h) Administering a journeyman plumber's (restricted) examination.

(i) Issuing a journeyman plumber's license (restricted).

(k) Administering an automatic fire sprinkler contractor's examination.

(L) Issuing an automatic fire sprinkler contractor's license.

(Lm) Issuing an automatic fire sprinkler — maintenance only registration.

(m) Administering a journeyman automatic fire sprinkler fitter's examination.

(n) Issuing a journeyman automatic fire sprinkler fitter's license.

(nm) Issuing an automatic fire sprinkler fitter — maintenance only registration certificate.

(o) Issuing a utility contractor's license.

(q) Issuing a pipelayer's registration.

(1g) The department may not charge a plumbing supervisor employed by the department in accord with s. 145.02 (3) (a) a fee for the appropriate 4−year license for which the plumbing supervisor has previously qualified.

(2) No license or registration may be issued for longer than 4 years. Any license or registration may be renewed upon application made prior to the date of expiration. The department may renew licenses or registrations upon application made after the date of expiration if it is satisfied that the applicant has good cause for not applying for renewal prior to the date of expiration and upon payment of the renewal and additional fees prescribed.

(3) To establish a record of beginning an apprenticeship, as a plumber, as an automatic fire sprinkler system apprentice, or as a plumber learner (restricted), every plumbing and automatic fire sprinkler system apprentice and every plumbing learner (restricted) shall within 30 days after beginning an apprenticeship or learnership register with the department. A fee established by the department by rule shall be paid at the time of registration and before January 1 of each subsequent calendar year during which the apprentice is engaged in the apprenticeship or learnership.

History: 1971 c. 255; 1975 c. 39, 199; 1977 c. 314; 1981 c. 20; 1981 c. 60 ss. 6, 11; 1981 c. 314; 1993 a. 16, 322; 1995 a. 417; 2005 a. 25; 2009 a. 28; 2011 a. 146.

145.09 State comity. Any person may be accepted for examination for the appropriate classification of license without submitting evidence required under s. 145.07, if:

(1) The person holds a current license under the laws of any other state, or under the ordinances of any city, town or village, having license provisions governing plumbers that the department determines are equivalent to the requirements of this chapter; or

(2) The person has practical experience in plumbing in another state that the department determines is equivalent to the experience required under this chapter.

History: 1981 c. 60.

145.10 Investigations, hearings; suspension, revocation. (1) The department may make investigations and conduct hearings and may, on its own or upon complaint in writing duly signed and verified by the complainant, and after providing not less than 10 days' notice to the licensee, suspend any master or journeyman plumber's license, cross−connection control tester's registration, utility contractor's license or temporary permit if it has reason to believe, and may revoke such license, registration or permit in the manner provided under this section if it finds, that the holder of such license, registration or permit has:

(a) Made a material misstatement in the application for a license or registration or renewal thereof or for a temporary permit;

(am) Committed gross negligence or misconduct or is incompetent in the practice covered by the person's license, registration or permit;

(b) Failed to correct an installation for which he or she is responsible, at his or her own expense, within 30 days following notification by the department of a violation of any rule adopted under this chapter; or

(c) Falsified information on an inspection form under s. 145.20 (5).

(2) A copy of the complaint with notice of the suspension of license, registration or permit shall be served on the person complained against, and the person's answer to the complaint shall be filed with the department and the complainant within 10 days after service. The department shall thereupon set the matter for hearing as promptly as possible and within 30 days after the date of filing the complaint. Either party may appear at the hearing in person or by attorney or agent. The department shall make its findings and determination within 90 days after the date that the hearing is concluded and send a copy to each interested party.

(3) No order revoking a license, registration or permit shall be made until after a public hearing to be held before the department at such place as the department designates. At least 10 days prior to the hearing the department shall send written notice of the time and place of the hearing to the licensee or permittee and to the person's attorney or agent of record by mailing the notice to the last−known address of such persons. The testimony presented and proceedings had at the hearing shall be recorded and preserved as the records of the department. The department shall as soon thereafter as possible make its findings and determination and send a copy

to each interested party. One year after the date of revocation, application may be made for a new license or registration.

History: 1977 c. 314, 418; 1979 c. 34; 1981 c. 1 s. 47; 1981 c. 60; 1983 a. 27, 70; 1991 a. 39; 1993 a. 322; 2005 a. 347.

145.11 Advertising restrictions. (1) No person offering plumbing services may do any of the following, unless the person is a licensed master plumber or employs a licensed master plumber:

(a) Advertise as a plumbing contractor, master plumber or plumber.

(b) Append his or her name to, or in connection with, the title "plumbing contractor", "master plumber" or "plumber".

(c) Append his or her name to any other title or words that may tend to represent the person as a plumbing contractor, master plumber or plumber.

(2) No person other than a licensed master plumber shall use or display the title "Master Plumber" or append his or her name to or in connection with such title or any other title or words which represent or may tend to represent him or her as a licensed master plumber. Every holder of a master plumber's license shall promptly notify the department of any change of his or her business address.

(3) Any person who advertises as a master plumber through the use of printed material designed for public distribution shall include in the advertisement the number of his or her license as a master plumber. Any person who advertises as a plumbing contractor through the use of printed material designed for public distribution shall include in the advertisement the license number of the master plumber employed by the plumbing contractor.

(4) Subsection (1) does not apply to any person who advertises as providing services for which no license is required under s. 145.06, unless the person holds himself or herself out as providing services for which a license is required.

History: 1983 a. 125; 1993 a. 482.

145.12 Prohibitions and penalties. (1) Any person who engages in or follows the business or occupation of, or advertises or holds himself or herself out as or acts temporarily or otherwise as a master plumber, as an automatic fire sprinkler contractor or as a business establishment holding an automatic fire sprinkler−maintenance only registration certificate without first having secured the required license or certificate, or who otherwise violates any provisions of this chapter, shall be fined not less than $100 nor more than $500 or imprisoned for 30 days or both. Each day such violation continues shall be a separate offense.

(2) Any person violating this chapter or failing to obey a lawful order of the department, or a judgment or decree of a court in connection with this chapter, may be imprisoned for not more than 3 months or fined not more than $500.

(3) Any master plumber who shall employ an apprentice on plumbing representing the apprentice to be a journeyman, or who shall charge for an apprentice a journeyman's wage, shall be punished by a fine of not more than $25, or by imprisonment in the county jail for not more than 30 days. Each day of violation shall be a separate offense.

(4) Any person who violates any order under s. 145.02 (3) (f) or 145.20 (2) (f) or any rule or standard adopted under s. 145.13 shall forfeit not less than $10 nor more than $1,000 for each violation. Each violation of an order under s. 145.02 (3) (f) or 145.20 (2) (f) or a rule or standard under s. 145.13 constitutes a separate offense and each day of continued violation is a separate offense.

(5) (a) In lieu of any other penalty under this section, the department may directly assess a forfeiture by issuing an order against any person who violates s. 145.06 or 145.20 (6). The department may not assess a forfeiture exceeding $2,000 for each violation.

(b) The department shall promulgate rules specifying the procedures governing the assessment of forfeitures under this subsection including the following:

1. The procedure for issuing an order for an alleged violation.

2. The amount of a forfeiture that the department may assess for an alleged violation, subject to the limit under par. (a).

3. The procedure for contesting an order issued for an alleged violation.

4. The procedure for contesting the assessment of a forfeiture for an alleged violation.

(c) The department shall remit all forfeitures paid under this subsection to the secretary of administration for deposit in the school fund.

(d) All forfeitures that are not paid as required under this subsection shall accrue interest at the rate of 12 percent per year.

(e) The attorney general may bring an action in the name of the state to collect any forfeiture imposed, or interest accrued, under this subsection if the forfeiture or interest has not been paid after the exhaustion of all administrative and judicial reviews.

History: 1971 c. 255; 1981 c. 20, 60; 1983 a. 410; 1993 a. 482; 1995 a. 225; 2005 a. 182; 2007 a. 197.

145.13 Adoption of plumbing code. The state plumbing code and amendments to that code as adopted by the department have the effect of law in the form of standards statewide in application and shall apply to all types of buildings, private or public, rural or urban, including buildings owned by the state or any political subdivision thereof. The state plumbing code shall comply with ch. 160. All plumbing installations shall so far as practicable be made to conform with such code.

History: 1971 c. 194; 1983 a. 410; 1993 a. 213.

Wisconsin administrative code ch. Comm 83, Private Onsite Wastewater Treatment Systems, created Register April, 2000, is valid. League of Wisconsin Municipalities v. Department of Commerce, 2002 WI App 137, 256 Wis. 2d 183, 647 N.W.2d 301, 01−1035.

145.14 Plumbers license (restricted). (1) LIMITATIONS. (a) Persons licensed as master plumbers (restricted), journeyman plumbers (restricted) or registered learners shall be classified by the department under sub. (2) and shall be restricted to the type of work for which they have been classified and to the requirements indicated in this section.

(b) Persons licensed as journeyman plumbers (restricted) or registered learners shall work under the supervision of a master plumber or a master plumber (restricted). A master plumber (restricted) may also work as a journeyman plumber (restricted). No journeyman plumber (restricted) or registered learner shall contract for work, advertise or do anything which would lead others to believe him to be qualified as a master plumber (restricted) in his classification.

(c) All persons licensed as master plumbers (restricted), journeyman plumbers (restricted) or registered learners shall be subject to all laws and rules governing plumbers. If qualified, persons may be licensed under any number of classifications under sub. (2). Separate licenses shall be issued under sub. (2) (a) and (b), but licenses issued under sub. (2) (b) may extend to any number of items under that paragraph.

(2) CLASSIFICATIONS. The classifications which the department shall use are a sewer services classification and an "appliances, equipment and devices" classification. Persons so classified may engage in the following types of work:

(a) *Systems or services.* Persons classified under this paragraph may install septic tanks for private on−site wastewater treatment systems, may install drain fields designed to serve such septic tanks, and may install sewer service from the septic tank or sewer extensions from mains to the immediate inside or proposed inside foundation wall of the building. Such persons may also install water services, stormwater use systems, and reclaimed water systems if the services or systems are to be located outside the foundation wall of the building.

(b) *Appliances, equipment or devices.* Under this paragraph persons installing a water treatment device, a water heater, or any other item in connection with a water distribution system, including a stormwater use or reclaimed water system, which does not

require a direct connection to a drain system are limited to making connections to existing installations. There shall be no drilling, tapping, or direct connection made to any waste or drain pipe to serve items installed under this section. The maximum length of water piping permitted to be installed under this section shall be the minimum required to connect the item to the system.

History: 2007 a. 147; 2009 a. 200; 2011 a. 146.

145.15 Licenses. (1) No city, village, town or county may require the licensing of any person licensed or registered under ss. 145.15 to 145.18 for any activity regulated under ss. 145.15 to 145.18 or rules adopted thereunder.

(2) All licenses issued under ss. 145.15 to 145.18 shall be issued by the department. The department shall not restrict the work done by any licensed journeyman sprinkler system fitter of any automatic fire sprinkler contractor or apprentice to any geographical territory.

(3) Any person not licensed under this chapter prior to April 26, 1972, who was regularly engaged in the occupation of installing automatic fire sprinkler systems on or before March 1, 1967, shall be licensed under ss. 145.15 to 145.18 without being required to pass any written, oral or practical examination qualifying the person for a license under ss. 145.15 to 145.18. Any such person shall apply for the appropriate license and pay the appropriate license fee.

(4) No person may install automatic fire sprinkler systems unless licensed or registered to do so by the department. Licenses and registrations pertaining to automatic fire sprinkler systems are not transferable.

History: 1971 c. 255; 1981 c. 20; 1993 a. 482.

Cross−reference: See also ss. SPS 305.50, 305.51, and 305.52, Wis. adm. code.

145.16 Fire sprinkler system apprentices, registration. Automatic fire sprinkler system apprentices may not be required to apply for any license but shall register with the department as an apprentice. The apprentices shall be enrolled in a qualified apprenticeship sprinkler fitters program recognized by the department.

History: 1971 c. 255; 1979 c. 221.

Cross−reference: See also s. SPS 305.53, Wis. adm. code.

145.165 Automatic fire sprinkler fitter−maintenance only registration. (1) An automatic fire sprinkler fitter−maintenance only registration certificate is required for any person who is employed to maintain automatic fire sprinkler systems by a business establishment registered under s. 145.175. The department shall, by rule, specify the requirements for issuing an automatic fire sprinkler fitter−maintenance only registration certificate and specify the activities in which a person holding a certificate under this section may engage.

(2) This section does not apply to any person registered under s. 145.16 or licensed under s. 145.17 (2).

History: 1981 c. 20.

Cross−reference: See also ss. SPS 305.54 and 305.55, Wis. adm. code.

145.17 Inspectors and rule making. (1) The department may employ competent supervisors, who shall be licensed automatic fire sprinkler contractors or journeymen automatic fire sprinkler system fitters, and may employ other persons.

(2) The department shall prescribe rules as to the qualifications, examination and licensing of journeymen automatic fire sprinkler system fitters and automatic fire sprinkler contractors and for the registration and training of automatic fire sprinkler system apprentices. The automatic fire sprinkler system contractors and journeymen council, created under s. 15.407 (17), shall advise the department in formulating the rules.

History: 1971 c. 255; 1979 c. 102, 221; 1995 a. 27; 2011 a. 32, 146.

145.175 Automatic fire sprinkler−maintenance only registration. An automatic fire sprinkler−maintenance only registration certificate is required before any business establishment may maintain or repair existing automatic fire sprinkler systems in its physical facilities. The department shall, by rule, specify the qualifications for issuing an automatic fire sprinkler−maintenance only registration certificate. The department shall, by rule, specify the activities in which a person holding a registration certificate under this section may engage.

History: 1981 c. 20.

Cross−reference: See also ss. SPS 305.53, and 305.54, Wis. adm. code.

145.18 Temporary permits. The department may issue temporary permits to journeymen automatic fire sprinkler system fitters or to automatic fire sprinkler contractors pending examination of applicants for licenses. The department may also issue temporary permits to applicants for automatic fire sprinkler−maintenance only registration certificates. The department shall, by rule, prescribe the procedure for issuing these permits. Examination fees shall be paid at the time the permit is issued.

History: 1971 c. 255; 1981 c. 20.

145.19 Sanitary permits. (1b) DEFINITION. In this section, "sanitary permit" means a permit authorizing the installation of a private on−site wastewater treatment system that is issued by the department or any governmental unit responsible for the regulation of private on−site wastewater treatment systems.

(1g) PERMIT REQUIRED. No person may purchase or install a private on−site wastewater treatment system unless the owner of the property on which the private on−site wastewater treatment system is to be installed holds a valid sanitary permit issued under this section. No person may sell at retail, as defined under s. 100.201 (1) (d), a septic tank for installation in this state unless the purchaser holds a valid sanitary permit issued under this section.

(1m) APPLICATION PROCESS. The department shall prescribe the information to be included in an application for a sanitary permit. The applicant shall submit the completed application for a sanitary permit to the governmental unit. The governmental unit shall approve or disapprove the sanitary permit according to the rules promulgated by the department under this chapter.

(1r) TEST RESULTS. The results of any percolation test or other test relating to the disposal of liquid domestic wastes into the soil shall be retained by the governmental unit where the property is located. The governmental unit shall make the test results available to an applicant for a sanitary permit and shall accept the test results as the basis for a sanitary permit application unless the soil at the test site is altered to the extent that a new soil test is necessary.

(2) FEE. No fee for a sanitary permit may be less than the amount determined under department rule. The governing body for the governmental unit responsible for the regulation of private on−site wastewater treatment systems may establish a fee for a sanitary permit which is more than the amount determined under department rule. A governmental unit may not charge more than one fee for a sanitary permit or the renewal of a sanitary permit in any 12−month period.

(3) FEES AND RECORDS OF PERMITS FORWARDED TO THE DEPARTMENT. The governmental unit responsible for the regulation of private on−site wastewater treatment systems shall forward to the department within 90 days after each valid permit is issued a portion of the fee, as determined under department rule. The governmental unit shall also compile a periodic summary of the permits that it has issued. The summary shall contain the information required by the department by rule, and shall be submitted by the governmental unit to the department at intervals to be determined by the department by rule.

(3m) NOTICE IN PERMIT. A sanitary permit shall include a notice displayed conspicuously and separately on the permit form, to inform the permit holder that:

(a) The purpose of the sanitary permit is to allow installation of the private on−site wastewater treatment system described in the permit.

(b) The approval of the sanitary permit is based on regulations in force on the date of approval.

(c) The sanitary permit is valid and may be renewed for a specified period.

(d) Changed regulations will not impair the validity of a sanitary permit.

(e) Renewal of the sanitary permit will be based on regulations in force at the time renewal is sought, and that changed regulations may impede renewal.

(f) The sanitary permit is transferable.

(4) USE OF FEE. The portion of this fee retained by the governmental unit responsible for the regulation of private on−site wastewater treatment systems shall be used for the administration of private on−site wastewater treatment system programs.

(6) GROUNDWATER FEE. In addition to the fee under sub. (2), the governmental unit responsible for the regulation of private on−site wastewater treatment systems shall collect a groundwater fee of $25 for each sanitary permit. The governmental unit shall forward this fee to the department together with the fee under sub. (3). The moneys collected under this subsection shall be credited to the environmental fund for environmental management.

(7) PERIOD OF VALIDITY. A sanitary permit is valid for 2 years from the date of issue and renewable for similar periods thereafter. A sanitary permit shall remain valid to the end of the established period, notwithstanding any change in the state plumbing code or in any private on−site wastewater treatment system ordinance during that period.

(8) TRANSFER OF PERMIT. A sanitary permit may be transferred from the holder to a subsequent owner of the land, except that the subsequent owner must obtain a new copy of the sanitary permit from the issuing agent.

History: 1979 c. 34, 221; 1983 a. 27; 1983 a. 189 s. 329 (20); 1983 a. 410; 1987 a. 27; 1989 a. 31; 1997 a. 27; 2011 a. 146 ss. 63 to 65, 68 to 74.

Cross−reference: See also s. SPS 302.67, Wis. adm. code.

145.195 Building on unsewered property. (1) No county, city, town or village may issue a building permit for construction of any structure requiring connection to a private on−site wastewater treatment system unless a private on−site wastewater treatment system satisfying all applicable regulations already exists to serve the proposed structure or all permits necessary to install a private on−site wastewater treatment system have been obtained.

(2) Before issuing a building permit for construction of any structure on property not served by a municipal sewage treatment plant, the county, city, town or village shall determine that the proposed construction does not interfere with a functioning private e on−site wastewater treatment system. The county, city, town or village may require building permit applicants to submit a detailed plan of the owner's existing private on−site wastewater treatment system.

History: 1977 c. 258; 1999 a. 150 s. 87; Stats. 1999 s. 145.195; 2007 a. 147; 2011 a. 146.

NOTE: **Chapter 258, laws of 1977, which created this section, contains a prefatory note.**

Cross−reference: See also ch. SPS 383, Wis. adm. code.

An onsite inspection of an existing private sewage system must be made before a building permit may be issued for any type of construction requiring a connection to that system. 75 Atty. Gen. 38.

145.20 Private on−site wastewater treatment systems. (1) ORGANIZATION AND PERSONNEL. (a) The governing body of the governmental unit responsible for the regulation of private on−site wastewater treatment systems may assign the duties of administering the private on−site wastewater treatment system program to any office, department, committee, board, commission, position or employee of that governmental unit.

(am) The governing body of the governmental unit responsible for the regulation of private on−site wastewater treatment systems may delegate the duties of administering the private on−site wastewater treatment system program to a town sanitary district or public inland lake protection and rehabilitation district with the powers of a town sanitary district within the town sanitary district or public inland lake protection and rehabilitation district if the town sanitary district or public inland lake protection and rehabilitation district agrees to assume those duties.

(b) The governmental unit responsible for the regulation of private on−site wastewater treatment systems shall obtain the services of a certified soil tester, either as an employee or under contract, to review and verify certified soil tester reports under sub. (2).

(2) GOVERNMENTAL UNIT RESPONSIBILITIES. The governmental unit responsible for the regulation of private on−site wastewater treatment systems shall:

(a) Review certified soil tester reports for proposed private on−site wastewater treatment systems and verify the report at the proposed site, if necessary.

(b) Approve or disapprove applications for sanitary permits and assist applicants in preparing an approvable application.

(c) Issue written notice to each applicant whose sanitary permit application is disapproved. Each notice shall state the specific reasons for disapproval and amendments to the application, if any, which render the application approvable. Each notice shall also give notice of the applicant's right to appeal and the procedures for conducting an appeal under ch. 68.

(d) Inspect all private on−site wastewater treatment systems after construction but before backfilling no later than the end of the next workday, excluding Saturdays, Sundays and holidays, after receiving notice from the plumber in charge.

(e) File reports and conduct surveys and inspections as required by the governmental unit responsible for the regulation of private on−site wastewater treatment systems or the department.

(f) Investigate violations of the private on−site wastewater treatment system ordinance and s. 254.59 (2), issue orders to abate the violations and submit orders to the district attorney, corporation counsel or attorney general for enforcement.

(g) Perform other duties regarding private on−site wastewater treatment systems as considered appropriate by the governmental unit responsible for the regulation of private on−site wastewater treatment systems or as required by the rules of the department.

(h) Inspect existing private on−site wastewater treatment systems to determine compliance with s. 145.195 if a building or structure is being constructed which requires connection to an existing private on−site wastewater treatment system. The county is not required to conduct an on−site inspection if a building or structure is being constructed which does not require connection to an existing private on−site wastewater treatment system.

(i) Adopt and enforce the maintenance program under sub. (5).

(3) DEPARTMENT RESPONSIBILITIES. (a) 1. The department may specify categories of private on−site wastewater treatment systems for which approval by the department is required prior to issuance of sanitary permits by the governmental unit responsible for the regulation of private on−site wastewater treatment systems.

2. The department may exempt a governmental unit from any category of private on−site wastewater treatment systems for which departmental approval is required prior to sanitary permit issuance under subd. 1., upon a determination, in accordance with rules promulgated by the department, that past performance of the governmental unit on reviews and audits under par. (b) has been satisfactory and that the governmental unit has the capacity to give the same level of application and plan review as that provided by the department. The department may revoke an exemption upon a finding that performance of the governmental unit on a review or audit conducted subsequent to the granting of the exemption is unsatisfactory or that the governmental unit is not giving the same level of application and plan review as that provided by the department. Findings in a revocation action may be made only after a public hearing upon 30 days' advance notice to the clerk of the governmental unit. The department shall submit a report under

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s.13.172 (2) to the chief clerk of each house of the legislature, at the beginning of each legislative session, describing the exemptions under this subdivision.

(b) The department shall review the private on−site wastewater treatment system program in each governmental unit responsible for the regulation of private on−site wastewater treatment systems to ascertain compliance with sub. (2) and with regulations issued by the department. This review shall include a random audit of sanitary permits, including verification by on−site inspection.

(c) If the governing body for a governmental unit responsible for the regulation of private on−site wastewater treatment systems does not adopt a private on−site wastewater treatment system ordinance meeting the requirements of s. 59.70 (5) or if the governmental unit does not appoint personnel meeting the requirements of sub. (1) or if the governmental unit does not comply with the requirements of sub. (2) or s. 145.19 (3), the department may conduct hearings in the county seat upon 30 days' notice to the county clerk. As soon as practicable after the public hearing, the department shall issue a written decision regarding compliance with s. 59.70 (5) or 145.19 (3) or sub. (1) or (2). If the department determines that there is a violation of these provisions, the governmental unit may not issue a sanitary permit for the installation of a private on−site wastewater treatment system until the violation is corrected.

(d) The department shall conduct training and informational programs for officials of the governmental unit responsible for the regulation of private on−site wastewater treatment systems and employees and persons licensed under this chapter and s. 281.48 and certified as operators of septage servicing vehicles under s. 281.17 (3) to improve the delivery of service under the private on−site wastewater treatment system program. The department shall obtain the assistance of the Wisconsin counties association in planning and conducting the training and informational programs.

(4) SPECIAL ASSESSMENT FOR HOLDING AND SEPTIC TANK PUMPING. A governmental unit may assess the owner of a private on−site wastewater treatment system for costs related to the pumping of a septic or holding tank. The governmental unit shall make any assessment in the same manner that a city, village or town makes an assessment under s. 66.0703.

(5) MAINTENANCE. (a) The department shall establish a maintenance program to be administered by governmental units responsible for the regulation of private on−site wastewater treatment systems. The department shall determine the private on−site wastewater treatment systems to which the maintenance program applies. At a minimum the maintenance program is applicable to all new or replacement private on−site wastewater treatment systems constructed in a governmental unit after the date on which the governmental unit adopts this program. The department may apply the maintenance program by rule to private on−site wastewater treatment systems constructed in a governmental unit responsible for the regulation of private on−site wastewater treatment systems on or before the date on which the governmental unit adopts the program. The department shall determine the private on−site wastewater treatment systems to which the maintenance program applies in governmental units that do not meet the conditions for eligibility under s. 145.245 (9).

(am) Each governmental unit responsible for the regulation of private on−site wastewater treatment systems shall adopt and begin the administration of the program established under par. (a) before October 1, 2019. As part of adopting and administering the program, the governmental unit shall conduct and maintain an inventory of all the private on−site wastewater treatment systems located in the governmental unit and shall complete the initial inventory before October 1, 2017. In order to be eligible for grant funding under s. 145.245, a governmental unit must comply with these deadlines.

NOTE: Par. (am) is shown as affected by 2011 Wis. Acts 134 and 146 and as merged by the legislative reference bureau under s. 13.92 (2) (i).

(b) The maintenance program shall include a requirement of inspection or pumping of the private on−site wastewater treatment system at least once every 3 years if the private on−site wastewater treatment system does not have a maintenance plan as prescribed by rule by the department. Inspections may be conducted by a master plumber, journeyman plumber or restricted plumber licensed under this chapter, a person licensed under s. 281.48 or by an employee of the state or governmental unit designated by the department, and the department may determine by rule other persons who are qualified to undertake required inspection, maintenance, or repairs. The department shall specify the methods to establish the required frequency of inspection, maintenance, and pumping for each type of private on−site wastewater treatment system that does not have a maintenance plan and shall periodically update the methods.

(c) The department of natural resources may suspend or revoke a license issued under s. 281.48 or a certificate issued under s. 281.17 (3) to the operator of a septage servicing vehicle if the department of natural resources finds that the licensee or operator falsified information on inspection forms. The department of safety and professional services may suspend or revoke the license of a plumber licensed under this chapter if the department finds that the plumber falsified information on inspection forms.

(6) RESTRICTIONS ON REVIEWERS AND INSPECTORS. (a) Except as provided in par. (b), a governmental unit employee who has responsibilities related to any of the activities under sub. (2) (a) to (i) may not do any of the following in the county in which the employee is employed or in an adjacent county:

1. Conduct any activities for which certification is required under s. 145.045 (1), except that the employee may review and verify soil tester reports as provided in sub. (2) (a).

2. Install, design, maintain, repair, or sell a private on−site wastewater treatment system, component of a private on−site wastewater treatment system, drain field designed to serve a private on−site wastewater treatment system, or pipe from a private on−site wastewater treatment system to the immediate inside of the existing or proposed foundation wall of the building served by the private on−site wastewater treatment system.

(b) Paragraph (a) does not apply to activities performed by an employee on property owned by the employee that is outside of the governmental unit for which the employee works.

History: 1979 c. 34, 221; 1981 c. 120; 1983 a. 192 s. 303 (7); 1983 a. 410; 1987 a. 27, 160; 1989 a. 31; 1993 a. 16, 27; 1995 a. 201, 227; 1999 a. 150 s. 672; 2005 a. 347 ss. 12, 14; 2007 a. 197; 2009 a. 392; 2011 a. 32, 134, 146; s. 13.92 (2) (i).

Cross−reference: See also ch. SPS 383, Wis. adm. code.

NOTE: 2005 Wis. Act 347, which affected this section, contains extensive explanatory notes.

145.23 Rules. The department may make and enforce rules relating to lot size and lot elevation necessary for proper sanitary conditions in the development and maintenance of subdivisions not served by a public sewer, where provision for such service has not been made.

History: 1979 c. 221 ss. 607, 649.

145.24 Variances. (1) If an existing private on−site wastewater treatment system either is not located in soil meeting the siting standards or is not constructed in accordance with design standards promulgated under s. 145.02 or 145.13, the owner of the private on−site wastewater treatment system may petition the department for a variance to the siting or design standards.

(2) The department shall establish procedures for the review and evaluation of existing private on−site wastewater treatment systems which do not comply with siting or design standards.

(3) Upon receipt of a petition for a variance, the department shall require the owner of the private on−site wastewater treatment system to submit information necessary to evaluate the request for a variance. If the department determines that the existing private on−site wastewater treatment system is not a failing private on−site wastewater treatment system, and continued use of the existing private on−site wastewater treatment system will not pose a threat of contamination of waters of the state, then the department may issue a variance to allow continued use of the

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existing private on−site wastewater treatment system. The department shall rescind the variance if the existing private on−site wastewater treatment system becomes a failing private on−site wastewater treatment system or contaminates waters of the state.

History: 1983 a. 410; 2011 a. 146.

145.245 Private on−site wastewater treatment system replacement or rehabilitation. (1) DEFINITIONS. In this section:

(a) "Determination of failure" means any of the following:

1. A determination that a private on−site wastewater treatment system is failing, according to the criteria under sub. (4), based on an inspection of the private on−site wastewater treatment system by an employee of the state or a governmental unit who is certified to inspect private on−site wastewater treatment systems by the department.

2. A written enforcement order issued under s. 145.02 (3) (f), 145.20 (2) (f) or 281.19 (2).

3. A written enforcement order issued under s. 254.59 (1) by a governmental unit.

(ae) "Governmental unit" means a governmental unit responsible for the regulation of private on−site wastewater treatment systems. "Governmental unit" also includes a federally recognized American Indian tribe or band.

(am) "Indian lands" means lands owned by the United States and held for the use or benefit of Indian tribes or bands or individual Indians and lands within the boundaries of a federally recognized reservation that are owned by Indian tribes or bands or individual Indians.

(b) "Participating governmental unit" means a governmental unit which applies to the department for financial assistance under sub. (8) and which meets the conditions specified under sub. (9).

(c) "Principal residence" means a residence which is occupied at least 51% of the year by the owner.

(dm) "Sewage" means the water−carried wastes created in and to be conducted away from residences, industrial establishments, and public buildings as defined in s. 101.01 (12), with such surface water or groundwater as may be present.

(e) "Small commercial establishment" means a commercial establishment or business place with a maximum daily waste water flow rate of less than 5,000 gallons per day.

(4) FAILING PRIVATE ON−SITE WASTEWATER TREATMENT SYSTEMS. The department shall establish criteria for determining if a private on−site wastewater treatment system is a failing private on−site wastewater treatment system. A failing private on−site wastewater treatment system is one which causes or results in any of the following conditions:

(a) The discharge of sewage into surface water or groundwater.

(b) The introduction of sewage into zones of saturation which adversely affects the operation of a private on−site wastewater treatment system.

(c) The discharge of sewage to a drain tile or into zones of bedrock.

(d) The discharge of sewage to the surface of the ground.

(e) The failure to accept sewage discharges and back up of sewage into the structure served by the private on−site wastewater treatment system.

(4m) CATEGORIES OF FAILING PRIVATE ON−SITE WASTEWATER TREATMENT SYSTEMS. For the purposes of this section, the department shall establish the category of each failing private on−site wastewater treatment system for which a grant application is submitted, as follows:

(a) Category 1: failing private on−site wastewater treatment systems described in sub. (4) (a) to (c).

(b) Category 2: failing private on−site wastewater treatment systems described in sub. (4) (d).

(c) Category 3: failing private on−site wastewater treatment systems described in sub. (4) (e).

(5) ELIGIBILITY. (a) 1. A person is eligible for grant funds under this section if he or she owns a principal residence which is served by a category 1 or 2 failing private on−site wastewater treatment system, if the private on−site wastewater treatment system was installed before July 1, 1978, if the family income of the person does not exceed the income limitations under par. (c), if the amount of the grant determined under sub. (7) is at least $100, if the residence is not located in an area served by a sewer and if determination of failure is made prior to the rehabilitation or replacement of the failing private on−site wastewater treatment system.

2. A business is eligible for grant funds under this section if it owns a small commercial establishment which is served by a category 1 or 2 failing private on−site wastewater treatment system, if the private on−site wastewater treatment system was installed before July 1, 1978, if the gross revenue of the business does not exceed the limitation under par. (d), if the small commercial establishment is not located in an area served by a sewer and if a determination of failure is made prior to the rehabilitation or replacement of the private on−site wastewater treatment system.

3. A person who owns a principal residence or small commercial establishment which is served by a category 1 or 2 failing private on−site wastewater treatment system may submit an application for grant funds during the 3−year period after the determination of failure is made. Grant funds may be awarded after work is completed if rehabilitation or replacement of the system meets all requirements of this section and rules promulgated under this section.

(b) Each principal residence or small commercial establishment may receive only one grant under this section.

(c) 1. In order to be eligible for grant funds under this section, the annual family income of the person who owns the principal residence may not exceed $45,000.

2. Except as provided under subd. 4., annual family income shall be based upon the federal adjusted gross income of the owner and the owner's spouse, if any, as computed for the taxable year prior to the year in which the determination of failure is made.

3. In order to be eligible for grant funds under this section, a person shall submit a copy of the federal income tax returns upon which the determination of federal adjusted gross income under subd. 2. was made together with any application required by the governmental unit.

4. A governmental unit may disregard the federal income tax return that is submitted under subd. 3. and may determine annual family income based upon satisfactory evidence of federal adjusted gross income or projected federal adjusted gross income of the owner and the owner's spouse in the current year. The department shall promulgate rules establishing criteria for determining what constitutes satisfactory evidence of federal adjusted gross income or projected federal adjusted gross income in a current year.

(d) 1. In order to be eligible for grant funds under this section, the annual gross revenue of the business that owns the small commercial establishment may not exceed $362,500.

2. Except as provided in subd. 4., annual gross revenue shall be based upon the gross revenue of the business for the taxable year prior to the year in which the determination of failure is made. The department shall promulgate rules establishing criteria for determining what constitutes satisfactory evidence of gross revenue in a prior taxable year.

3. In order to be eligible for grant funds under this section, a business shall submit documentation required by the department under subd. 2. together with any application required by the governmental unit.

4. A governmental unit may disregard the documentation of gross revenue for the taxable year prior to the year in which the determination of failure is made and may determine annual gross revenue based upon satisfactory evidence of gross revenue of the business in the current year. The department shall promulgate

rules establishing criteria for determining what constitutes satisfactory evidence of gross revenue in a current year.

(e) The department of revenue shall, upon request by the department, verify the income information submitted by an applicant or grant recipient.

(5m) DENIAL OF APPLICATION. (a) The department or a governmental unit shall deny a grant application under this section if the applicant or a person who would be directly benefited by the grant intentionally caused the conditions which resulted in a category 1 or 2 failing private on−site wastewater treatment system. The department or governmental unit shall notify the applicant in writing of a denial, including the reason for the denial.

(b) The department shall notify a governmental unit if an individual's name appears on the statewide support lien docket under s. 49.854 (2) (b). The department or a governmental unit shall deny an application under this section if the name of the applicant or an individual who would be directly benefited by the grant appears on the statewide support lien docket under s. 49.854 (2) (b), unless the applicant or individual who would be benefited by the grant provides to the department or governmental unit a payment agreement that has been approved by the county child support agency under s. 59.53 (5) and that is consistent with rules promulgated under s. 49.858 (2) (a).

(6) USE OF FUNDS. (a) Except for grants under par. (b), funds available under a grant under this section shall be applied to the rehabilitation or replacement of the private on−site wastewater treatment system. An existing private on−site wastewater treatment system may be replaced by an alternative private on−site wastewater treatment system or by a system serving more than one principal residence.

(b) Funds available under a grant under this section for experimental private on−site wastewater treatment systems shall be applied to the installation and monitoring of the experimental private on−site wastewater treatment systems.

(7) ALLOWABLE COSTS; STATE SHARE. (a) Except as provided in par. (e), costs allowable in determining grant funding under this section may not exceed the costs of rehabilitating or replacing a private on−site wastewater treatment system which would be necessary to allow the rehabilitated system or new system to meet the minimum requirements of the state plumbing code promulgated under s. 145.13.

(b) Except as provided in par. (e), costs allowable in determining grant funding under this section may not exceed the costs of rehabilitating or replacing a private on−site wastewater treatment system by the least costly methods, except that a holding tank may not be used as the measure of the least costly method for rehabilitating or replacing a private on−site wastewater treatment system other than a holding tank.

(c) Except as provided in pars. (d) and (e), the state grant share under this section is limited to $7,000 for each principal residence or small commercial establishment to be served by the private on−site wastewater treatment system or to the amount determined by the department based upon private on−site wastewater treatment system grant funding tables, whichever is less. The department shall prepare and publish private on−site wastewater treatment system grant funding tables which specify the maximum state share limitation for various components and costs involved in the rehabilitation or replacement of a private on−site wastewater treatment system based upon minimum size and other requirements specified in the state plumbing code promulgated under s. 145.02. The maximum state share limitations shall be designed to pay approximately 60% of the average allowable cost of private on−site wastewater treatment system rehabilitation or replacement based upon estimated or actual costs of that rehabilitation or replacement. The department shall revise the grant funding tables when it determines that 60% of current costs of private on−site wastewater treatment system rehabilitation or replacement exceed the amounts in the grant funding tables by more than 10%, except that the department may not revise the grant funding tables more often than once every 2 years.

(d) Except as provided in par. (e), if the income of a person who owns a principal residence that is served by a category 1 or 2 failing private on−site wastewater treatment system is greater than $32,000, the amount of the grant under this section is limited to the amount determined under par. (c) less 30% of the amount by which the person's income exceeds $32,000.

(e) Costs allowable for experimental private on−site wastewater treatment systems shall include the costs of installing and monitoring experimental private on−site wastewater treatment systems installed under s. 145.02 (3) (b) and this section. The department shall promulgate rules that specify how the department will select, monitor and allocate the state share for experimental private on−site wastewater treatment systems that the department funds under this section.

(8) APPLICATION. (a) In order to be eligible for a grant under this section, a governmental unit shall make an application for replacement or rehabilitation of private on−site wastewater treatment systems of principal residences or small commercial establishments and shall submit an application for participation to the department. The application shall be in the form and include the information the department prescribes. In order to be eligible for funds available in a fiscal year, an application is required to be received by the department prior to February 1 of the previous fiscal year.

(b) An American Indian tribe or band may submit an application for participation for any Indian lands under its jurisdiction.

(9) CONDITIONS; GOVERNMENTAL UNITS. As a condition for obtaining grant funding under this section, a governmental unit shall:

(a) Adopt and administer the maintenance program established under s. 145.20 (5);

(b) Certify that grants will be used for private on−site wastewater treatment system replacement or rehabilitation for a principal residence or small commercial establishment owned by a person who meets the eligibility requirements under sub. (5), that the funds will be used as provided under sub. (6) and that allowable costs will not exceed the amount permitted under sub. (7);

(c) Certify that grants will be used for private on−site wastewater treatment systems which will be properly installed and maintained;

(d) Certify that grants provided to the governmental unit will be disbursed to eligible owners;

(e) Establish a process for regulation and inspection of private on−site wastewater treatment systems;

(f) Establish a system of user charges and cost recovery if the governmental unit considers this system to be appropriate. User charges and cost recovery may include the cost of the grant application fee and the cost of supervising installation and maintenance; and

(g) Establish a system which provides for the distribution of grant funds received among eligible applicants based on the amount requested in the application as approved by the department. If the amount received by a county is insufficient to fully fund all grants, the county shall prorate grant funds on the same basis as sub. (11m).

(10) ASSISTANCE. The department shall make its staff available to provide technical assistance to each governmental unit. The department shall prepare and distribute to each participating governmental unit a manual of procedures for the grant program under this section.

(11) ALLOCATION OF FUNDS. (b) *Determination of eligible applications.* At the beginning of each fiscal year the department shall determine the state grant share for applications from eligible owners received by participating governmental units. The department may revise this determination if a governmental unit does not meet the conditions specified under sub. (9) or if it determines that individuals do not meet eligibility requirements under sub. (5).

(c) *Allocation.* The department shall allocate available funds for grants to each participating governmental unit according to the total amount of the state grant share for all eligible applications received by that governmental unit.

(d) *Limitation; commercial establishments.* The department may not allocate more than 10% of the funds available under this subsection each fiscal year for grants for small commercial establishments.

(e) *Limitation; experimental private on−site wastewater treatment systems.* The department may not allocate more than 10% of the funds available under this subsection each fiscal year for grants for the installation and monitoring of experimental private on−site wastewater treatment systems.

(11m) PRORATING. (a) Except as provided in par. (d), the department shall prorate available funds under this subsection if funds are not sufficient to fully fund all applications. A prorated payment shall be deemed full payment of the grant.

(b) Except as provided in par. (d), if funds are sufficient to fully fund all category 1 but not all category 2 failing private on−site wastewater treatment systems, the department shall fully fund all category 1 systems and prorate the funds for category 2 systems on a proportional basis.

(c) Except as provided in par. (d), if funds are not sufficient to fully fund all category 1 failing private on−site wastewater treatment systems, the department shall fund the category 1 systems on a proportional basis and deny the grant applications for all category 2 systems.

(d) The department is not required to prorate available funds for grants for the installation and monitoring of experimental private on−site wastewater treatment systems.

(12) DETERMINATION OF ELIGIBILITY; DISBURSEMENT OF GRANTS. (a) The department shall review applications for participation in the state program submitted under sub. (8). The department shall determine if a governmental unit submitting an application meets the conditions specified under sub. (9).

(b) The department shall promulgate rules which shall define payment mechanisms to be used to disburse grants to a governmental unit.

(12m) LOANS TO GOVERNMENTAL UNITS. (a) A governmental unit to which the department allocates funds under sub. (11) for a fiscal year may apply to the department for a loan under this subsection if the department prorates funds under sub. (11m) for that fiscal year. A governmental unit may only use a loan under this subsection to increase the amounts of grants to persons eligible under sub. (5) above the amounts that would be provided without a loan under this subsection or to provide grants to persons eligible under sub. (5) who would otherwise not receive grants, because of the operation of sub. (11m) (c), but the total amount provided to a person under this section may not exceed the amount authorized under sub. (7).

(b) A loan under this subsection bears no interest. A loan under this subsection may not exceed the difference between the amount of the grant that the governmental unit would have received if the department had not prorated grants under sub. (11) and the amount of the grant that the governmental unit did receive. If the amount available for loans under s. 20.320 (3) (q) in a fiscal year is not sufficient to provide loans to all eligible governmental units applying for loans, the department shall allocate the available funds in the same manner as in sub. (11) (c).

(c) A loan approved under this subsection shall be for no longer than 20 years, as determined by the department of administration, and be fully amortized not later than 20 years after the original date of the note.

(d) As a condition of receiving a loan under this subsection an applicant shall do all of the following:

1. Pledge the security, if any, required by the department of administration under this subsection.

2. Demonstrate to the satisfaction of the department of administration the financial capacity to assure sufficient revenues to repay the loan.

(e) The department of safety and professional services and the department of administration may enter into a financial assistance agreement with a governmental unit that applies for a loan under this subsection and meets the eligibility requirements for a loan, including the requirements under par. (d).

(f) The department of administration, in consultation with the department of safety and professional services, may establish those terms and conditions of a financial assistance agreement that relate to its financial management, including what type of municipal obligation is required for the repayment of the financial assistance. In setting the terms and conditions, the department of administration may consider factors that the department of administration finds are relevant, including the type of obligation evidencing the loan, the pledge of security for the obligation and the applicant's creditworthiness.

(g) The department of administration shall make and disburse a loan to an applicant that has entered into a financial assistance agreement under par. (e). The department of administration, in consultation with the department of safety and professional services, shall establish procedures for disbursing loans.

(h) If a governmental unit fails to make a principal repayment after its due date, the department of administration shall place on file a certified statement of all amounts due under this subsection. After consulting the department of safety and professional services, the department of administration may collect all amounts due by deducting those amounts from any state payments due the governmental unit or may add a special charge to the amount of taxes apportioned to and levied upon the county under s. 70.60. If the department of administration collects amounts due, it shall remit those amounts to the fund to which they are due and notify the department of safety and professional services of that action.

(13) INSPECTION. Agents of the department or the governmental unit may enter premises where private on−site wastewater treatment systems are located pursuant to a special inspection warrant as required under s. 66.0119, to collect samples, records and information and to ascertain compliance with the rules and orders of the department or the governmental unit.

(14) ENFORCEMENT. (a) If the department has reason to believe that a violation of this section or any rule promulgated under this section has occurred, it may:

1. Cause written notice to be served upon the alleged violator. The notice shall specify the alleged violation, and contain the findings of fact on which the charge of violation is based, and may include an order that necessary corrective action be taken within a reasonable time. This order shall become effective unless, no later than 30 days after the date the notice and order are served, the person named in the notice and order requests in writing a hearing before the department. Upon this request and after due notice, the department shall hold a hearing. Instead of an order, the department may require that the alleged violator appear before the department for a hearing at a time and place specified in the notice and answer the charges complained of; or

2. Initiate action under sub. (15).

(b) If after the hearing the department finds that a violation has occurred, it shall affirm or modify its order previously issued, or issue an appropriate order for the prevention, abatement or control of the violation or for other corrective action. If the department finds that no violation has occurred, it shall rescind its order. Any order issued as part of a notice or after hearing may prescribe one or more dates by which necessary action shall be taken in preventing, abating or controlling the violation.

(d) Additional grants under this section to a governmental unit previously awarded a grant under this section may be suspended or terminated if the department finds that a private on−site waste-

water treatment system previously funded in the governmental unit is not being or has not been properly rehabilitated, constructed, installed or maintained.

(15) PENALTIES. Any person who violates this section or a rule or order promulgated under this section shall forfeit not less than $10 nor more than $5,000 for each violation. Each day of continued violation is a separate offense. While an order is suspended, stayed or enjoined, this penalty does not accrue.

History: 1981 c. 1 s. 33; 1983 a. 27; 1983 a. 189 s. 329 (8); 1983 a. 545; 1985 a. 29; 1987 a. 27; 1989 a. 31, 326; 1991 a. 32; 1991 a. 39 ss. 2564fs to 2564fw, 2622Lm to 2622n; Stats. 1991 s. 145.245; 1991 a. 189; 1993 a. 16, 27; 1995 a. 27 ss. 4355, 9116 (5); 1995 a. 227, 404; 1999 a. 9; 1999 a. 150 s. 672; 2003 a. 169, 326; 2005 a. 347; 2009 a. 392; 2011 a. 32, 146; s. 35.17 correction (5) (a) 2.

Cross−reference: See also ch. SPS 387 and s. NR 128.30, Wis. adm. code.

NOTE: 2005 Wis. Act 347, which affected this section, contains extensive explanatory notes.

145.26 Public swimming pool plan review. (1) In this section, "public swimming pool" means a fixed or mobile structure, basin, chamber or tank and appurtenant buildings and equipment that serve or are installed for use by the state, a political subdivision of the state, a motel, a hotel, a resort, a camp, a club, an association, a housing development, a school, a religious, charitable or youth organization, an educative or rehabilitative facility or another entity. "Public swimming pool" does not mean a fixed or mobile structure, basin, chamber or tank that only serves fewer than 3 individual residences.

(2) The department shall, in advance of construction, alteration or reconstruction, review and approve plans and specifications for the construction, alteration or reconstruction of public swimming pools or water recreation attractions or the alteration of public swimming pool equipment in this state.

(3) The department shall require payment of fees that are established by rule for the review of plans and specifications for the construction, alteration or reconstruction of public swimming pools or water recreation attractions or the alteration of public swimming pool equipment.

(4) No one may maintain, manage or operate a public swimming pool or water recreation attraction for which construction, alteration or reconstruction is made after January 1, 1990, unless all of the following have taken place:

(a) The department has reviewed and approved the construction, alteration or reconstruction under sub. (2).

(b) The applicable fee under sub. (3) has been paid.

(c) The construction, alteration or reconstruction of the public swimming pool or water recreation attraction conforms to the plans and specifications approved by the department under sub. (2).

(5) The department shall promulgate rules establishing all of the following:

(a) The definition of "water attraction".

(b) The amounts of fees to perform review of plans and specifications as specified in sub. (2).

(6) Whoever violates this section or the rules promulgated under this section may be fined not less than $100 nor more than $5,000. Each day of continued violation constitutes a separate offense.

History: 1989 a. 31; 1993 a. 16 ss. 2402, 2561, 2562; Stats. 1993 s. 145.26.

Cross−reference: See also ch. SPS 390, Wis. adm. code.

Chapter SPS 383

PRIVATE ONSITE WASTEWATER TREATMENT SYSTEMS

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Note: Chapter H 63 was created as an emergency rule effective 6−21−80; section H 62.20 as it existed on June 30, 1983 was renumbered to chapter ILHR 83. Chapter ILHR 83 was renumbered chapter Comm 83 under s. 13.93 (2m) (b) 1., Stats., and corrections made under s. 13.93 (2m) (b) 6. and 7., Stats., Register, February, 1997, No. 494. Chapter Comm 83 as it existed on June 30, 2000 was repealed and a new chapter Comm 83 was created, Register, April, 2000, No. 532, eff. 7−1−00. Chapter Comm 83 was renumbered chapter SPS 383 under s. 13.92 (4) (b) 1., Stats., Register December 2011 No. 672.

Subchapter I — Scope and Application

SPS 383.01 Purpose. The purpose of this chapter is to establish uniform standards and criteria for the design, installation, inspection and management of a private onsite wastewater treatment system, POWTS, so that the system is safe and will protect public health and the waters of the state.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: am. Register January 2004 No. 577, eff. 2−1−04.

SPS 383.02 Scope. (1) WASTEWATER GENERATION. Except as delineated in sub. (2), this chapter applies to all of the following:

(a) A situation where domestic wastewater is collected and conducted by means of plumbing drain systems and is not conveyed to a wastewater treatment facility regulated by the department of natural resources.

(b) A POWTS where domestic wastewater is treated and dispersed to the subsurface.

(c) A holding tank that is utilized as a POWTS or as part of a POWTS to collect and hold domestic wastewater for transport and treatment elsewhere.

Note: Section SPS 382.10 (2) (d) states that where plumbing fixtures exist in a building that is not connected to a public sewer system, suitable provision shall be made for treating, recycling, dispersing or holding the wastewater.

Note: The department of natural resources is responsible for establishing, administering and enforcing standards relative to domestic wastewater treatment systems which either disperse to the surface or to surface waters. The department of natural resources also establishes effluent limitations and monitoring requirements where the design daily influent wastewater flow to a POWTS exceeds 12,000 gallons per day for the purpose of fulfilling WPDES permit requirements under ch. 283, Stats.

Note: Pursuant to s. 281.17 (5), Stats., the department of natural resources may also restrict or specify the type of wastewater treatment necessary. Section 281.17 (5) reads:

> The department [department of natural resources] may prohibit the installation or use of septic tanks in any area of the state where the department finds that the use of septic tanks would impair water quality. The department shall prescribe alternate methods for waste treatment and disposal in such prohibited areas.

(2) EXEMPTIONS. This chapter does not apply to:

(a) A POWTS owned by the federal government and located on federal lands; and

(b) A POWTS located or to be located on land held in trust by the federal government for Native Americans.

(3) SUBDIVISION STANDARDS. This chapter does not establish minimum lot sizes or lot elevations under s. 145.23, Stats., for the purpose of the department reviewing proposed subdivisions which will not be served by public sewers under s. 236.12, Stats.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00.

SPS 383.03 Application. (1) INSTALLATIONS. (a) *New POWTS installations.* The design, installation and management of a new POWTS shall conform with this chapter.

Note: Pursuant to s. 145.135 (2) (b), Stats., the approval of a sanitary permit is based on the rules in effect on the date of the permit approval.

(b) *Modifications to existing POWTS.* A modification to an existing POWTS, including the replacement, alteration or addition of materials, appurtenances or POWTS components, shall require that the modification conform to this chapter.

Note: The modification of one part of a POWTS may affect the performance or the operation of other parts of the POWTS thereby necessitating further modifications for the 'other parts' to be or remain compliant with the appropriate edition of the state plumbing code; see sub. (2) (b) 1.

(c) *Modifications to existing structures served by existing POWTS.* When an addition or alteration is proposed to an existing building, structure or facility that is served by an existing POWTS and the proposed addition or alteration will result in a change that affects the wastewater flow or wastewater contaminant load beyond the minimum or maximum capabilities of the existing POWTS, the POWTS shall be modified to conform to the rules of this chapter.

Note: See s. SPS 383.25 (2) relating to the issuance of building permits.

(2) RETROACTIVITY. (a) This chapter does not apply retroactively to an existing POWTS installed prior to July 1, 2000, or for which a sanitary permit has been issued prior to July 1, 2000, except as provided in ss. SPS 383.32 (1) (a) and (c) to (g), 383.54 (4) and 383.55 (1) (b).

(b) 1. Except as provided in subd. 2. and ss. SPS 383.32 (1) (a) and (c) to (g), 383.54 (4) and 383.55 (1) (b), an existing POWTS installed prior to July 1, 2000, shall conform to the siting, design, construction and maintenance rules in effect at the time the

sanitary permit was obtained or at the time of installation, if no permit was issued.

2. a. An existing POWTS installed prior to December 1, 1969 with an infiltrative surface of a treatment and dispersal component that is located 2 feet or more above groundwater or bedrock shall be considered to discharge final effluent that is not sewage, unless proven otherwise.

b. An existing POWTS installed prior to December 1, 1969 with an infiltrative surface of a treatment and dispersal component that is located less than 2 feet above groundwater or bedrock shall be considered to discharge final effluent that is sewage, unless proven otherwise.

(c) An existing POWTS which conforms with this chapter shall be permitted to remain as installed.

(3) PLAT RESTRICTIONS. The department shall consider a restriction or a prohibition placed on a lot or an outlot prior to July 1, 2000, as a result of its plat review authority under s. 236.12, Stats., waived, if a POWTS proposed for the lot complies with this chapter.

Note: The waiving of a restriction or prohibition placed on a lot or outlot by the department is a review action. Pursuant to s. SPS 302.635, a fee is needed to initiate the review action.

Note: Under the provisions of ch. 236, Stats., the department of administration and local municipalities have review authority over lots in subdivisions not served by public sewers. A written release of a restriction or prohibition may be required by the department of administration and local municipality. A Correction Instrument may be required under the provisions of s. 236.295, Stats.

(4) GROUNDWATER STANDARDS. (a) Pursuant to s. 160.255, Stats., the design, installation, use or maintenance of a POWTS is not required to comply with the nitrate standard specified in ch. NR 140 Table 1, except as provided under sub. (5).

(b) Pursuant to s. 160.19 (2) (a), Stats., the department has determined that it is not technically or economically feasible to require that a POWTS treat wastewater to comply with the preventative action limit for chloride specified in ch. NR 140 Table 2 as existed on June 1, 1998.

Note: The prevention action limit for chloride as a performance standard relative to the design and management of a POWTS has been determined to be unfeasible because anion exchange is the only chemical process capable of removing chloride from water. The physical processes of removing chloride, such as through evaporation and reverse osmosis, would separate feedwater into two streams, one with a reduced chloride content and the other with an increased chloride content, and result in still having to treat and dispose of chloride contaminated wastewater. The design and management practice to address the enforcement standard for chloride as it relates to a POWTS is addressed under s. SPS 382.40 (8) (j).

(5) LOCAL ORDINANCES. (a) Pursuant to ss. 59.70 (5) (a), 145.02 (2) and 145.13, Stats., this chapter is uniform in application and a governmental unit may not enact an ordinance for the design, installation, inspection and management of a POWTS which is more or less stringent than this chapter, except as specifically permitted by rule.

(b) Except as provided in s. SPS 383.25 (1) (b), a governmental unit shall submit to the department any proposed ordinance or proposed ordinance revision relating to POWTS. The proposed ordinance or revision shall be submitted for review a minimum of 30 calendar days prior to the first scheduled public hearing date regarding the ordinance.

Note: Pursuant to ss. 59.69, 60.62, 61.35 and 62.23, Stats., this chapter does not affect municipal authority for zoning, including establishing nitrate standards as part of a zoning ordinance to encourage the protection of groundwater resources.

(6) DEPARTMENT AUTHORITY. A department interpretation of the requirements in this chapter shall supersede any differing interpretation by a lower level jurisdiction. A department decision on the application of the requirements in this chapter shall supersede any differing decision by a lower level jurisdiction.

Note: A decision of the department may be appealed. Section 101.02 (6) (e), Stats., outlines the procedure for submitting requests to the department for appeal hearings and the department procedures for hearing appeals.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: am. (2) (b) 1., r. and recr. (5) Register January 2004 No. 577, eff. 2−1−04; CR 07−100: renum. (5) to be (5) (a), cr. (5) (b) and (6) Register September 2008 No. 633, eff. 10−1−08; correction in (2) (a), (b), (5) (b) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.04 Implementation. (1) For the purpose of facilitating inspection responsibilities and services, a governmental unit may not issue a sanitary permit for the construction or use of a POWTS that utilizes any of the technologies, designs or methods delineated in Table 383.04−1 and that has been recognized under s. SPS 384.10 (3) or 383.22, unless the governmental unit utilizes one or more individuals, who have obtained approved training under s. SPS 383.05 for the POWTS technology, design or method, to provide the inspections under s. SPS 383.26 (2) to (4), except as provided in sub. (2).

(2) A governmental unit may issue a sanitary permit for the construction or use of a POWTS that utilizes any of the technologies, designs or methods delineated in Table 383.04−1 and that has not been recognized under s. SPS 384.10 (3), but has been approved by the department under s. SPS 383.22, provided that governmental unit has arranged with the department to provide the inspections under s. SPS 383.26 (2) to (4).

Table 383.04−1
Restricted Technologies

	Technology
1.	Pressurized distribution component with less than 1/8 inch orifice diameter.[a]
2.	Mechanical POWTS treatment component.[b]
3.	Disinfection unit.[c]
4.	Sand, gravel or peat filter as a POWTS treatment component.[d]

[a] Includes drip distribution.
[b] Includes an aerobic treatment tank or a complete treatment unit within a tank.
[c] Includes a chlorinator, ozonation unit, and ultraviolet light unit.
[d] Does not include a mound system.

Note: The provisions of this section relating to a governmental unit's ability to limit the issuance of sanitary permits for new development does not dictate a specific strategy as to the scope of the limitation. Therefore, limitation options include, but are not limited to, a prohibition for all new development or in certain geographical areas, a quota system for new development, a requirement for a permit to operate for a specific POWTS method or technology, or a service/performance bond for a specific POWTS method or technology.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: am. Table 83.04−1 footnote [a], r. (2) and Table 83.04−2, renum. (3) to be (2) Register January 2004 No. 577, eff. 2−1−04; CR 07−100: renum. (1) (a) and (b) to be (1) and (2), r. (2) Register September 2008 No. 633, eff. 10−1−08; correction in (1) made under s. 13.92 (4) (b) 7., Stats., Register September 2008 No. 633; correction in (1), (2) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.05 Installation and inspection training. (1) PROGRAM SPECIFICATIONS. Only courses, programs and seminars approved in writing by the department shall be used to fulfill the required training for the POWTS technologies and methods under ss. SPS 383.04 (1) and 383.21 (2) (c) 4.

(2) EVIDENCE OF COMPLIANCE. An individual who has completed the installation and inspection training shall be responsible for retaining evidence of achieving the training in order to fulfill the obligations under ss. SPS 383.04 (1) and 383.21 (2) (c) 4.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 07−100: renum. (1) (a) to be (1) and am., r. (1) (b) to (e) Register September 2008 No. 633, eff. 10−1−08; correction in (1), (2) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

Subchapter II — Administration and Enforcement

SPS 383.20 Purpose. (1) This subchapter establishes the following:

(a) Regulatory processes and procedures which are to be followed when designing, installing or maintaining a POWTS; and

(b) Responsibilities and actions of the various governmental agencies involved with the administration and enforcement of this chapter

Note: Section 145.20 (1) (a), Stats., states that the governing body of the governmental unit responsible for the regulation of private sewage systems may assign the duties of administering the private sewage system program to any office, department, committee, board, commission, position or employee of that governmental unit.

(2) Except as provided in this chapter nothing shall limit the authority and power of a governmental unit in exercising administration and enforcement responsibilities regarding a POWTS, including requiring and issuing other types of permits for activities not covered under this subchapter relating to sanitary permits.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 07−100: am. (2) Register September 2008 No. 633, eff. 10−1−08.

SPS 383.21 Sanitary permits. (1) GENERAL. (a) Pursuant to ss. 145.135 and 145.19, Stats., the installation or construction of a POWTS may not commence or continue unless all of the following have been fulfilled:

1. The owner of the property on which the POWTS is to be installed possesses a valid sanitary permit.

2. Plan approval for the POWTS has been obtained in accordance with s. SPS 383.22.

(b) The modification of an existing POWTS may not commence or continue unless the owner of the property on which the POWTS is located possesses a valid sanitary permit and has obtained plan approval for the modification under s. SPS 383.22, if the modification involves the addition or replacement of any of the following:

1. A POWTS holding component.

2. A POWTS treatment component.

3. A POWTS dispersal component.

(2) APPLICATION. (a) The application for a sanitary permit shall be made in a format prescribed by the department.

Note: Department forms required in this chapter are available for a nominal fee at telephone 800−DOC−SALE or Contact Through Relay or at docsales@doa.state.wi.us, or at no charge at the Department's Web site http://dsps.wi.gov through links to Safety and Buildings Division forms.

(b) 1. Except as provided in subd. 2., the application for a sanitary permit shall be submitted to the appropriate governmental unit where the POWTS is located or will be located.

2. The application for a sanitary permit shall be submitted to the department for a POWTS that is located or will be located on property owned by the state.

Note: Section 145.20 (2) (b), Stats., states that the governmental unit responsible for regulation of private sewage systems shall approve or disapprove applications for sanitary permits and assist applicants in preparing an approvable application.

(c) The application for a sanitary permit to the governmental unit shall be accompanied by all of the following:

1. At least one set of clear and legible plans and specifications delineating the information under s. SPS 383.22 (2) (a) 3. and (c).

2. A set of plans bearing the department's conditional approval and the approval letter issued by the department, if required to be reviewed by the department under s. SPS 383.22 (1).

3. Sufficient supporting information to determine whether the proposed design, installation and management of the POWTS or the proposed modification to an existing POWTS conforms with this chapter.

4. Documentation that the master plumber or the master plumber−restricted service who is to be responsible for the installation or modification of the POWTS has completed approved training or has documentation that approved training will be provided during the installation of the POWTS, if the application for the sanitary permit involves one or more of the technologies or methods specified in s. SPS 383.04 (1).

5. Documentation that maintenance requirements for the proposed POWTS technology or method have been recorded with the deed for the property, if the management plan for the installation or modification under s. SPS 383.54 (1) involves one or more of the following:

a. Evaluating or monitoring any part of the system at an interval of 12 months or less.

b. Servicing or maintaining any part of the system at an interval of 12 months or less.

6. Any other information as specified by local ordinance relating to POWTS installations.

7. A fee as specified by the governmental unit.

Note: Section 145.19 (2) to (6) reads:

"(2) FEE. No fee for a sanitary permit may be less than $61, or the amount determined under department rule. The governing body for the governmental unit responsible for the regulation of private sewage systems may establish a fee for a sanitary permit which is more than $61, or the amount determined under department rule. [Pursuant to s. SPS 302.67 (1), the minimum sanitary permit fee is $116.]

(3) COPY OF PERMIT FORWARDED TO THE DEPARTMENT. The governmental unit responsible for the regulation of private sewage systems shall forward a copy of each valid sanitary permit and $20, or the amount determined under department rule, of the fee to the department within 90 days after the permit is issued. [Pursuant to s. SPS 302.67 (2), $50 of the sanitary permit fee is to be forwarded to the department.]

(4) USE OF FEE. The portion of this fee retained by the governmental unit responsible for the regulation of private sewage systems shall be used for the administration of private sewage system programs.

(5) FEE ADJUSTMENT. The department, by rule promulgated under ch. 227, may adjust the minimum permit fee under sub. (2) and the fee portion forwarded under sub. (3).

(6) GROUNDWATER FEE. In addition to the fee under sub. (2), the governmental unit responsible for the regulation of private sewage systems shall collect a groundwater fee of $25 for each sanitary permit. The governmental unit shall forward this fee to the department together with the copy of the sanitary permit and the fee under sub. (3). The moneys collected under this subsection shall be credited to the environmental fund for environmental management."

(3) PROCESSING. (a) A sanitary permit may not be issued until the plans and specifications have been approved by the department or governmental unit having jurisdiction.

(b) A governmental unit may not issue a sanitary permit for the installation or modification of the POWTS that involves one or more of the technologies or methods specified in s. SPS 383.04 (1) unless the master plumber or the master plumber−restricted who is to be responsible for the installation or modification has completed approved training or has documentation that approved training will be provided during the installation of the POWTS.

(c) A governmental unit shall review and make a determination on the submission of an application for a sanitary permit within 30 days after receiving all the required information and fees under sub. (2) (c).

(d) 1. If upon review of the application and the supporting information, the governmental unit or the department determines that the proposed design, installation and management of the POWTS or the proposed modification of an existing POWTS conforms with this chapter, a sanitary permit shall be issued.

2. a. If upon review of the application and the supporting information, the governmental unit or the department determines that the proposed design, installation and management of the POWTS or the proposed modification of an existing POWTS does not conform with this chapter, a sanitary permit may not be issued.

b. When the issuance of a sanitary permit is denied, the governmental unit or department reviewing the application shall provide in writing to the applicant the reasons for denial, a notice for the right to appeal and the procedures for appeal.

c. An applicant denied a sanitary permit by a governmental unit may appeal the decision in accordance with ch. 68, Stats.

d. The appeal of the denial by the department for a sanitary permit shall be made in writing within 30 days from the date of the decision.

(e) A sanitary permit shall be issued by the appropriate governmental unit or the department in a format prescribed by the department.

Note: See appendix for further information relative to the permit format.

(f) A governmental unit may deny the issuance of a sanitary permit only if the application does not comply with the requirements of chs. SPS 383, 384 or 385.

(4) TRANSFERS. A sanitary permit may be transferred from an owner to a subsequent owner, pursuant to s. 145.135 (1), Stats.

Note: Section 145.135 (1), Stats., reads in part:

"A sanitary permit may be transferred from the holder to a subsequent owner of the land, except that the subsequent owner must obtain a new copy of the sanitary permit from the issuing agent."

(5) EXPIRATION. Pursuant to s. 145.135 (1), Stats., a sanitary permit shall expire 2 years from the date of issuance unless renewed in accordance with sub. (6).

(6) RENEWALS. (a) 1. The application for renewal of a sanitary permit shall be made in a format prescribed by the department.

2. The application for renewal of a sanitary permit shall be submitted to the department or the appropriate governmental unit in accordance with sub. (2) (b).

(b) The renewal of a sanitary permit shall be contingent upon the proposed POWTS or the proposed modification of an existing POWTS conforming with the rules of this chapter in effect at the time the sanitary permit is renewed.

(6m) SUSPENSION. (a) A governmental unit may temporarily suspend a sanitary permit issued under this section if it is determined prior to construction that a POWTS cannot be installed based on the information that was available when the permit was issued.

(b) The suspension of the sanitary permit shall terminate no later than the date the sanitary permit expires.

(7) REVOCATION. (a) The department may revoke a sanitary permit issued under this section for any false statements or misrepresentation of facts on which the sanitary permit was issued.

(b) A governmental unit may revoke a sanitary permit that the governmental unit has issued under this section for any false statements or misrepresentation of facts on which the sanitary permit was issued.

(c) The revocation of a sanitary permit and the reasons for revocation shall be conveyed in writing to the individual to whom the sanitary permit was issued or transferred.

(d) If a sanitary permit is revoked, the installation or modification of a POWTS may not commence or continue until another sanitary permit is obtained.

(8) POSTING. When a sanitary permit is obtained under sub. (2), the sanitary permit shall:

(a) Be posted in such a location and manner on the proposed site where the POWTS is to be installed or modified so that the information on the permit is visible for inspection; and

(b) Remain posted until:

1. The POWTS installation or modification is completed; and

2. An opportunity for a final inspection occurs in accordance with s. SPS 383.26.

(9) PERMIT STORAGE. A governmental unit shall maintain a permanent record of each sanitary permit and permit application supporting information listed in s. SPS 383.21 (2) (c) until the property is no longer served by a POWTS.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: am. (2) (c) 4., (3) (b) and (c) Register January 2004 No. 577, eff. 2−1−04; CR 07−100: am. (2) (c) 4., cr. (3) (f), (6m) and (9) Register September 2008 No. 633, eff. 10−1−08; correction in (1) (a) 2., (b) (intro.), (2) (c) 1., 2., 4., 5., (3) (b), (f), (8) (b) 2., (9) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.22 Plan review and approval. (1) SUBMISSION OF PLANS. (a) Plans shall be submitted to the department, a designated agent or the governmental unit in accordance with this section for all of the following types of installations or modifications:

1. The installation or construction of a POWTS.

2. The replacement or addition of a POWTS treatment component.

3. The replacement or addition of a POWTS holding component.

4. The replacement or addition of a POWTS dispersal component.

(b) Plans for the types of POWTS delineated in Table 383.22−1 shall be submitted to the department for review.

(c) Plans for the types of POWTS delineated in Table 383.22−2 shall be submitted for review to the department or a designated agent.

Note: See s. SPS 383.23 for more information relative to designated agents.

(d) Plans for the types of POWTS delineated in Table 383.22−3 shall be submitted for review to the appropriate governmental unit where the POWTS is located or will be located.

Table 383.22−1
Plan Submissions to Department

	Type of Installation
1.	POWTS owned by the state.
2.	Facilities owned by the state and served by POWTS.
3.	POWTS that will not completely utilize treatment and dispersal technologies or methods either approved under s. SPS 384.10 (2) or (3) or recognized under s. SPS 383.60 (1).
4.	POWTS treating domestic wastewater combined with industrial wastes.[a]
5.	Experiments under s. SPS 383.27.

[a] See s. SPS 383.32 (3) (a).

Table 383.22−2
Plan Submissions to Department or Designated Agent

	Type of Installation
1.	POWTS that will completely utilize treatment and dispersal technologies or methods either approved under s. SPS 384.10 (2) or (3) or recognized under s. SPS 383.60 (1).
2.	POWTS that collect and hold all wastewater of the facilities served and utilize holding components designed based on ≥3,000 gpd estimated flow either recognized under s. SPS 384.10 (2) or (3) or recognized under s. SPS 383.60 (1).

Note: Pursuant to s. 145.19 (2), Stats., governmental units may require separate plan examination fees or include these fees in the cost of the sanitary permit.

Table 383.22−3
Plan Submissions to Governmental Unit

	Type of Installation
1.	POWTS that will serve not more than two one− or 2−family dwellings and their accessory buildings utilizing technologies or methods either recognized under s. SPS 384.10 (2) or (3) or recognized under s. SPS 383.60 (1), and using gravity distribution of the effluent to an in−ground distribution cell.
2.	POWTS that collect and hold all wastewater of the facilities served and utilize holding components designed based on <3,000 gpd estimated flow either recognized under s. SPS 384.10 (2) or (3) or recognized under s. SPS 383.60 (1).

Note: Pursuant to s. 145.19 (2), Stats., governmental units may require separate plan examination fees or include these fees in the cost of the sanitary permit.

(2) PLANS AND SPECIFICATIONS. (a) 1. When plans are submitted to the department for review, at least 3 sets of plans and one set of specifications shall be provided.

Note: Specifications for a project do not have to be a separate document but may be delineated on the plans.

2. When plans are submitted to a designated agent or governmental unit for review, at least 2 sets of plans and one set of specifications shall be provided.

3. Plans and specifications submitted for review shall be clear, legible and permanent copies.

4. Plans submitted for review shall include all of the following:

a. Details and configuration layouts depicting how the design is to be constructed and how the design is to accomplish the treatment in accordance with ss. SPS 383.43 and 383.44 and dispersal that is claimed or the holding of wastewater.

b. Specifications, including a description of the materials for the project and the installation or construction practices and methods to be employed.

c. A site plan with a bench mark either scaled or dimensioned, delineating all treatment and dispersal components and their relationship to any items listed in Table 383.43−1.

(b) 1. All plans submitted for review shall be accompanied by sufficient data and information to determine if the proposed POWTS or modification of an existing POWTS and their performance will conform with chs. SPS 382 to 384 including, but not limited to all of the following:

a. A plan review application form specified by the department.

Note: Department forms required in this chapter are available for a nominal fee at telephone 800−DOC−SALE or Contact Through Relay or at docsales@doa.state.wi.us, or at no charge at the Department's Web site http://dsps.wi.gov through links to Safety and Buildings Division forms.

b. The minimum and maximum wastewater flow and load of the proposed project and the method or rationale for determining the flow and load.

c. Documentation to support treatment and dispersal claims.

d. A management plan for the proposed design reflecting conformance to subch. V.

e. A soil and site evaluation report in accordance with s. SPS 385.40 for those POWTS components that consist in part of in situ soil.

f. A description of a contingency plan in the event the proposed POWTS fails and cannot be repaired.

2. In addition to the information required under subd. 1., plans for one or more holding tanks serving a large commercial, industrial, recreational or residential development with an estimated daily wastewater flow of 3,000 gallons or more shall include information pursuant to s. NR 113.07 (1) (e).

Note: Section NR 113.07 (1) (e) reads as follows:

Large commercial, industrial, recreational or residential development holding tank systems that singly or when added together or increased by successive additions generate 3000 gallons of septage per day or greater shall contract with a wastewater treatment facility for treatment of the septage. The contract terms shall provide assurance that the septage from the system will continually be conveyed to, and accepted, at the wastewater treatment facility. If a service area designation exists, the wastewater treatment facility shall amend the service area to include the commercial, industrial, recreational or residential development. The department may not indicate sufficient disposal capacity to the department of safety and professional services, until the service area adjustments have been completed and approved.

3. In addition to the information required under subd. 1., plans for a POWTS that is to serve a dwelling where the design of the POWTS is not based upon the number of bedrooms within the dwelling shall be accompanied by information documenting that design condition on the deed for the property.

4. In addition to the information required under subd. 1., plans for an experimental POWTS shall be accompanied by information required under s. SPS 383.27 (3).

5. In addition to the information required under subd. 1., plans for a POWTS which is to serve more than one structure or building, other than two one− or 2−family dwellings and their accessory buildings located on a single parcel of land, shall be accompanied by information that does all of the following:

a. Describes the legal entity, public or private, that has responsibility for the operation and maintenance of the POWTS.

b. Includes a copy of a recorded legal document that identifies all the parties that have ownership rights and are responsible for the operation and maintenance of the POWTS.

6. a. In addition to the information required under subd. 1., plans for a POWTS with a design wastewater flow exceeding 12,000 gallons per day shall not be approved until documentation has been submitted to the department indicating that the department of natural resources has concurred with the design of the POWTS.

Note: The Wisconsin department of natural resources requires that a Wisconsin Pollutant Discharge Elimination System (WPDES) permit must be obtained prior to the start of operation for a POWTS with a design flow exceeding 12,000 gallons per day pursuant to ch. 283, Stats.

b. Solely for the purpose of determining the applicability of subd. 6. a., the design wastewater flow of 12,000 gpd shall be deemed equivalent to 85 bedrooms for residential dwellings, including one− and 2−family dwellings, multi−family dwellings and mobile homes.

c. Solely for the purpose of determining the applicability of subd. 6. a., the design wastewater flow of 12,000 gpd for commercial facilities shall be calculated using the estimated wastewater flows specified in A−383.43 (6) of the appendix.

d. Solely for the purpose of determining the applicability of subd. 6. a., for residential dwellings combined with commercial facilities the design wastewater flow of 12,000 gpd shall be calculated by prorating the number of bedrooms on the basis of 85 bedrooms equaling 12,000 gpd for the residential dwellings and using the estimated flow under s. SPS 383.43 (3) (a) and A−383.43 (6) of the appendix to calculate the design flow for the commercial facilities.

e. For the purpose of determining the applicability of subd. 6. a., the design wastewater flow of 12,000 gpd shall include the design wastewater flow of all POWTS that are located on the same property or on properties under the same ownership and where the perimeter of a distribution cell of a POWTS dispersal component for one POWTS is less than 1,500 feet from the perimeter of a distribution cell of a POWTS dispersal component of any other POWTS under the same ownership.

f. For the purpose of determining the applicability of subd. 6. a., the combined design wastewater flow shall include that of any existing POWTS which falls within the parameters of subd. 6. e.

g. Under subd. 6. a., the same ownership is defined to be a person, group of persons or a corporation which owns a majority interest in the properties where majority ownership is based upon a majority of the issued voting stock, a majority of the members if no voting stock is issued, a majority of the board of the directors or comparable governing body or participation of each general partner in the profits of a partnership.

(c) Plans and specifications which are required to be submitted for review under sub. (1) shall be one of the following:

1. Signed and sealed in accordance with s. A−E 2.02 by an individual who is registered by the department as an architect, engineer, designer of plumbing systems or designer of private sewage systems.

2. Signed, including license number, and dated by an individual who is responsible for the installation of the POWTS and who is licensed by the department as a master plumber or master plumber−restricted service.

(d) Plans submitted to the department for review shall be accompanied by a fee in accordance with ss. SPS 302.61 and 302.65.

(3) PLAN REVIEW PROCESS. (a) *Time limits.* Pursuant to s. SPS 302.07 (3), the department shall review and make a determination on an application for plan review within 15 business days.

(b) *Conditional approval.* 1. If, upon review, the applicable reviewing agency determines that the plans conform to this chapter and chs. SPS 382 and 384, a conditional approval shall be granted in writing.

2. All conditions indicating nonconformance to this chapter and chs. SPS 382 and 384 shall be corrected before or during installation.

(c) *Denial of approval.* If, upon review, the applicable reviewing agency determines that the plans do not conform to this chapter or chs. SPS 382 and 384, the request for conditional approval shall be denied in writing.

(4) REVISIONS. (a) A modification to the design of a POWTS for which a plan has been previously granted approval under sub. (3) (b) shall be submitted to the applicable reviewing agency for

review in accordance with this section, if the proposed modification involves any of the following:

1. A change in wastewater flow or contaminant load.

2. The replacement or addition of a POWTS component listed in Table 383.04−1.

3. The addition of a POWTS dispersal component.

4. A change to one or more dispersal components involving any of the following:

a. Location outside suitable evaluated areas or proposed depths or elevations.

b. Dimensions of any distribution cell or basal area.

c. Type of dispersal component.

d. Design of a pressure distribution component, except for changes to pumps, forcemain lengths, total dynamic head, (TDH), or pump control settings.

(b) A modification to the design of a POWTS for which a plan has been previously granted approval under sub. (3) (b) may be submitted to the governmental unit which issued the sanitary permit, if the proposed modification involves a change which is not listed in par. (a) and if the governmental unit agrees to review the proposed minor revision.

(c) The installer of a POWTS may not implement or undertake the proposed revisions under par. (a) or (b) until written approval is obtained from the applicable reviewing agency.

(d) Revisions to previously approved plans shall be reviewed in accordance with sub. (3).

(e) If revisions under par. (a) are submitted to and approved by the department, the owner of the site for the POWTS or the owner's agent shall file the revisions with the governmental unit which issued the sanitary permit.

(5) LIMITATION OF RESPONSIBILITY. A conditional approval of a plan by the department may not be construed as an assumption by the department of any responsibility for the design of the POWTS or any component of the system. The department does not hold itself liable for any defects in construction, or for any damages that may result from a specific installation.

(6) REVOCATION OF APPROVAL. (a) The department may revoke any plan approval issued under this section for any false statements or misrepresentation of facts on which the approval was based.

(b) The designated agent or governmental unit may revoke any plan approval issued by the designated agent or governmental units for any false statements or misrepresentation of facts on which the approval was based.

(c) The revocation of a plan approval and the reasons for revocation shall be conveyed in writing to the submitter of the plans as noted on the application.

(d) If a plan approval is revoked, the installation or alteration of a POWTS may not continue until another plan approval is obtained.

(7) EVIDENCE OF APPROVAL. (a) When plans are required to be approved by the department, designated agent or governmental unit under sub. (1), the plumber responsible for the installation of a POWTS or the modification of an existing POWTS shall keep at the construction site at least one set of plans bearing evidence of approval by the department, designated agent or governmental unit and at least one copy of specifications.

(b) The plans and specifications shall be maintained at the construction site until the POWTS installation or modification is completed and an opportunity for a final inspection occurs in accordance with s. SPS 383.26.

(c) The plans and specifications shall be made available to the department or the governmental unit upon request.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: am. (2) (b) 6. a. and e. and (4) (a) (intro.), r. (4) (a) 4. c., renum. and am. (4) (a) 4. d. to be (4) (a) 4. c., cr. (4) (e) Register January 2004 No. 577, eff. 2−1−04; CR 06−119: am. (3) (a) Register July 2007 No. 619, eff. 8−1−07; CR 07−100: am. Tables 83.22−1 to 3, (2) (a) 1., (b) 5. (intro.), (4) (a) and (7) (a), renum. (2) (a) 2. and 3. and (4) (b) to (d) to be (2) (a) 3. and 4. and (4) (c) to (e) and am. (4) (c) and (e), cr. (2) (a) 2. and (4) (b), r. (4) (e) Register September 2008 No. 633, eff. 10−1−08; correction in (1) (b), (c), (d), (2) (a) 4. a., c., (b) 1. (intro.), e., 4., 6. c., d., (c) 1., (d), (3) (a), (b) 1., 2., (c), (4) (a) 2., (7) (b), Table 383.22−1, Table 383.22−2, Table 383.22−3 made under s. 13.92 (4) (b) 6., 7., Stats., Register December 2011 No. 672.

SPS 383.23 Review agent status. (1) Upon request from a governmental unit, the department may delegate to the governmental unit the responsibility to review plans for one or more of the types of POWTS delineated in Table 383.22−2 which are to be or are located within the jurisdiction of that governmental unit.

(2) A request by a governmental unit to review plans for the types of POWTS delineated in Table 383.22−2 shall be made in writing. The request shall include all of the following:

(a) The types of POWTS for which delegation is desired.

(b) Information delineating how the plans are to be processed and reviewed.

(c) Information on how plan review decisions are to be recorded and maintained.

(3) The delegation of plan review by the department shall be contingent upon a governmental unit's request demonstrating sufficient capabilities to complete the reviews, including all of the following:

(a) The utilization of one or more individuals who are certified by the department as a POWTS inspector to perform the plan review.

(b) The utilization of one or more individuals, who are certified soil testers, to provide assistance in the plan review process.

Note: The requirements of this subsection do not require the utilization of 2 individuals to perform plan review. A single individual who holds a certification as a certified POWTS inspector and as a certified soil tester may fulfill the requirements under pars. (a) and (b).

(4) (a) The department shall provide the governmental unit with a written decision of delegation or denial of delegation relative to a request under this section concerning plan review.

(b) The department may deny a request for plan review delegation, if the governmental unit has not completed a POWTS inventory or is not operating a maintenance program required under s. SPS 383.255.

(c) The delegation for plan review shall be contingent upon the governmental unit acknowledging that the submission and review of plans under s. SPS 383.22 (1) may, at the discretion of the submitter, be made to the department or the designated agent.

(5) The department shall include as part of governmental unit audits conducted under s. 145.20 (3) (b), Stats., an evaluation of the plan review functions which are delegated to a governmental unit under this section.

(6) A governmental unit that wishes to discontinue the delegated plan review function under this section shall notify the department in writing at least 30 days prior to the discontinuance.

(7) (a) The recognition as a review agent may be revoked by the department in accordance with s. 145.20 (3) (a) 2., Stats.

(b) The department may revoke the delegation as a plan review agent, if the governmental unit has not completed a POWTS inventory or is not operating a maintenance program required under s. SPS 383.255.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: am. (3) (a) and (b) Register January 2004 No. 577, eff. 2−1−04; CR 07−100: renum. (4) (b) and (7) to be (4) (c) and (7) (a), cr. (4) (b) and (7) (b) Register September 2008 No. 633, eff. 10−1−08; correction in (1), (2) (intro.), (4) (b), (c), (7) (b) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.24 Petitions for variance. (1) The department shall consider and may grant a variance to a provision of this chapter in accordance with ch. SPS 303.

Note: The petition for variance process is to allow the owner of a proposed or existing POWTS to ask the department's recognition of an alternative method or means for complying with the intent of a specific rule.

(2) (a) Pursuant to s. 145.24, Stats., the department may not approve a petition for variance for an existing POWTS which is

determined to be a failing private onsite wastewater treatment system.

(b) For the purposes of this subsection, the department shall consider a petition for variance if the existing POWTS is not considered a failing private onsite wastewater treatment system.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; correction in (1) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.25 Governmental programs. (1) DELEGATION OF RESPONSIBILITIES. (a) Pursuant to s. 145.20 (1) (am), Stats., the delegation by a governmental unit of the administration and enforcement of this chapter to a town sanitary district or public inland lake protection and rehabilitation district shall be by ordinance.

(b) A copy of an ordinance delegating administration and enforcement of this chapter to a town sanitary district or public inland lake protection and rehabilitation district shall be forwarded to the department at least 30 days prior to the effective date of the ordinance.

(2) ISSUANCE OF BUILDING PERMITS. (a) *General.* Pursuant to s. 145.195, Stats., the issuance of building permits by a municipality for unsewered properties shall be in accordance with this subsection.

Note: See appendix for a reprint of s. 145.195, Stats.

(b) *New construction.* A municipality may not issue a building permit to commence construction or installation of a structure that necessitates the use of a POWTS to serve the structure, unless:

1. The owner of the property possesses a sanitary permit for the installation of a POWTS in accordance with s. SPS 383.21; or

Note: Section SPS 383.21 outlines the procedures for the issuance of sanitary permits. Sections 145.135 and 145.19, Stats., mandate that no private sewage system may be installed unless the owner of the property holds a valid sanitary permit.

2. A POWTS of adequate capability and capacity to accommodate the wastewater flow and contaminant load already exists to serve the structure.

Note: See ss. SPS 383.02 and 383.03 concerning the application of current code requirements to existing POWTS.

(c) *Construction affecting wastewater flow or contaminant load.* 1. A municipality may not issue a building permit to commence construction of any addition or alteration to an existing structure when the proposed construction will modify the design wastewater flow or contaminant load, or both, to an existing POWTS, unless the owner of the property:

a. Possesses a sanitary permit to either modify the existing POWTS or construct a POWTS to accommodate the modification in wastewater flow or contaminant load, or both; or

b. Provides documentation to verify that the existing POWTS is sufficient to accommodate the modification in wastewater flow or contaminant load, or both.

2. For the purpose of this paragraph, a modification in wastewater flow or contaminant load shall be considered to occur:

a. For commercial facilities, public buildings, and places of employment, when there is a proposed change in occupancy of the structure; or the proposed modification affects either the type or number of plumbing appliances, fixtures or devices discharging to the system; and

b. For dwellings, when there is an increase or decrease in the number of bedrooms.

(d) *Documentation of existing capabilities.* Documentation to verify whether an existing POWTS can accommodate a modification in wastewater flow or contaminant load, or both, shall include at least one of the following:

1. A copy of the plan for the existing POWTS that delineates minimum and maximum performance capabilities and which has been previously approved by the department or the governmental unit.

2. Information on the performance capabilities for the existing POWTS that has been recognized through a product approval under ch. SPS 384.

3. A written investigative report prepared by an architect, engineer, designer of plumbing systems, designer of private sewage systems, master plumber, master plumber−restricted service or certified POWTS inspector analyzing the proposed modification and the performance capabilities of the existing POWTS.

(e) Where the performance capability of the existing POWTS serving a dwelling is not based on the number of bedrooms within the dwelling, information documenting that design condition shall be recorded as a covenant running with the deed for the property.

(f) *Setbacks.* 1. A municipality may not issue a building permit for construction of any structure or addition to a structure on a site where there exists a POWTS, unless the proposed construction conforms to the applicable setback limitations under s. SPS 383.43 (8) (i).

2. The applicant for a building permit shall provide documentation to the municipality issuing the building permit showing the location and setback distances for the proposed construction relative to all of the following:

a. Existing POWTS treatment components.

b. Existing POWTS holding components.

c. Existing POWTS dispersal components.

Note: A municipality that issues building permits may delegate to the governmental unit responsible for issuing sanitary permits the determination of whether the proposed construction will affect or interfere with an existing POWTS relating to capability or location of the existing POWTS.

Note: See appendix for further information regarding setbacks.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: am. (2) (a) Register January 2004 No. 577, eff. 2−1−04; CR 07−100: renum. (2) (e) to be (2) (f), cr. (2) (e) Register September 2008 No. 633, eff. 10−1−08; correction in (2) (b) 1., (d) 2., (f) 1. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.255 Governmental inventory and maintenance program. (1) (a) 1. A governmental unit shall conduct, complete and maintain an inventory of all POWTS located in their jurisdictional area within 3 years after October 1, 2008.

2. The inventory shall be updated as existing POWTS are identified and new POWTS are installed or constructed.

(b) At a minimum, a POWTS inventory shall consist of all of the following elements:

1. Legal description of all properties including tax parcel number where a POWTS is located within the governmental unit jurisdictional area.

2. Name and address of the owner of each POWTS located within the governmental unit jurisdictional area.

Note: The inventory does not require site visits, identification of the type of POWTS or an evaluation of the POWTS.

(2) (a) A governmental unit shall develop and implement a comprehensive POWTS maintenance program within 5 years after October 1, 2008.

(b) At a minimum, a POWTS maintenance program shall consist of all of the following elements:

1. An inventory of all POWTS located within the governmental unit jurisdictional area.

2. A process that accepts and records inspection, evaluation, maintenance and servicing reports submitted by the POWTS owner or the owner's agent for POWTS listed in the governmental unit inventory.

3. A process that accepts and creates a record for each inspection, evaluation, maintenance and servicing report for a POWTS within the governmental unit jurisdictional area but not listed in the governmental unit inventory that is submitted by the POWTS owner or the owner's agent.

4. A process that notifies POWTS owners that are delinquent in submitting reports for inspection, evaluation, maintenance and servicing activities listed in ss. SPS 383.54 (3) and (4) and 383.55.

5. A process that includes measures meant to ensure that required inspection, evaluation, maintenance and servicing is performed and the results are reported to the governmental unit.

6. Reports summarizing the results of the maintenance program on an annual basis in a format requested by the department.

Note: Pursuant to s. 145.245 (9) (a), Stats., a governmental unit must comply with the maintenance provisions of this section as a condition for obtaining Wisconsin Fund grants.

(3) A governmental unit shall make available to the department, upon request, any and all records necessary to ascertain compliance with this chapter and the provisions as specified in s. 145.20 (2) (i), Stats.

History: CR 07−100: cr. Register September 2008 No. 633, eff. 10−1−08; correction in (2) (b) 4. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.26 Inspections and testing. (1) (a) Pursuant to s. 145.02 (3) (c), Stats., the department or governmental unit may inspect the construction, installation, operation or maintenance of a POWTS to ascertain whether the POWTS conforms to plans approved by the department or governmental unit, the conditions of approval and this chapter.

(b) The department may issue an order directing an immediate cessation of the installation of a POWTS or the modification to an existing POWTS for failure to comply with a corrective order.

(c) Pursuant to ss. 145.02 (3) (f) and 145.20 (1) (a) and (2) (f), Stats., an individual authorized by the department or a governmental unit to administer and enforce this chapter may issue orders to abate human health hazards relating to this chapter.

Note: Section SPS 305.66 delineates qualifications and responsibilities for POWTS inspectors.

(d) Pursuant to s. 145.20 (2) (e) and (g), Stats., nothing in this chapter shall limit a governmental unit's authority and power to inspect or require an evaluation of a POWTS, including an existing POWTS at times or for activities not covered under this section.

(2) (a) When a sanitary permit is required under s. SPS 383.21 (1), no part of a POWTS component may be covered nor any POWTS component put into service until the governmental unit or the department has had an opportunity to inspect the system in accordance with this subsection.

Note: Pursuant to s. 145.20 (2), Stats., an individual authorized by a governmental unit to administer and enforce the provisions of chs. SPS 382 to 387 relative to POWTS is required to be a certified POWTS inspector under s. SPS 305.66.

(b) The master plumber or the master plumber−restricted service responsible for the installation of a POWTS or the modification to an existing POWTS shall notify the governmental unit when the work will be or is ready for inspection. The notification shall be in person, in writing or by telephone or other electronic communication in a format acceptable to the governmental unit performing the inspection.

(c) The master plumber or the master plumber−restricted service responsible for the installation of a POWTS or the modification shall maintain records of the inspection notifications. The records shall include the date and time of notification and the name of the person contacted.

(d) The master plumber or master plumber−restricted service responsible for the POWTS installation or modification shall provide the necessary equipment and properly licensed personnel required for the inspection as requested by the governmental unit or department.

(e) If an inspection is not made by the end of the next workday, excluding Saturdays, Sundays and holidays, after the requested inspection day, the master plumber or the master plumber−restricted service may proceed with the installation of the POWTS, including backfilling and covering.

(3) Pursuant to s. 145.20 (2) (g), Stats., a governmental unit by ordinance may require other inspections in addition to that specified under this section.

(4) A governmental unit shall maintain a written record of each inspection conducted for a POWTS. The record shall include information relative to all of the following:

(a) The location of the POWTS.

(b) The date of the inspection.

(c) The nature and findings of the inspection.

(5) Before being put into service, components of a POWTS shall be tested in accordance with the manufacturer's specifications or as specified as a condition of approval under ss. SPS 383.22 and 384.10.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; correction in (2) (a), (5) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.27 Experiments. (1) The provisions of this chapter or ch. SPS 384 are not intended to prevent the design and use of an innovative method or concept for the treatment or dispersal of domestic wastewater which is not specifically addressed by this chapter, provided the experiment has been first approved by the department in accordance with s. SPS 384.50 (3).

(2) The department shall review a submittal of an experiment under this section with input from the technical advisory committee assembled under s. SPS 384.10 (3) (d).

(3) The protocol for a proposed experiment submitted to the department for consideration shall include all of the following:

(a) The experiment shall be supervised by a professional who has experience in small−scale wastewater treatment.

(b) The professional shall submit a vita of training and experience relative to small−scale wastewater treatment along with the application for the experiment.

(c) A proposal shall be submitted for the experiment that includes at least all of the following:

1. The purpose of the experiment.

2. The theory and science behind the proposed experiment including a description of the systems or processes to be used as part of the experiment.

3. The number of systems or components to be installed or modified as part of the experiment.

4. The identification of the initial sites, if known, that will take part in the experiment.

5. A letter of comment from the governmental unit or units where the experiment is to be conducted.

6. The data to be collected and the method to be employed to collect the data.

7. The duration of the proposed experiment.

(d) The experiment may not involve less than 5, and not more than 50 individual installations.

(e) An experiment shall be designed to provide definitive results within 5 years from the start of the experiment.

(f) An experiment on a site not previously developed shall include a contingency plan that provides for a code complying replacement POWTS, if the experiment fails to meet the required performance standards of this chapter.

(g) If the experiment is approved, the experimenter shall execute a signed agreement with the department setting forth the obligations of the parties.

(h) Within 6 months of the completion of the experiment, the results or conclusions shall be forwarded to the department.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; correction in (1), (2) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.28 Penalties. Penalties for violations of this chapter shall be assessed in accordance with s. 145.12, Stats.

Note: Section 145.12 (4), Stats., indicates that any person who violates any order under s. 145.02 (3) (f) or 145.20 (2) (f) or any rule or standard adopted under s. 145.13 shall forfeit not less than $10 nor more than $1,000 for each violation. Each violation

of an order under s. 145.02 (3) (f) or 145.20 (2) (f) or any rule or standard adopted under s. 145.13 constitutes a separate offense and each day of continued violation is a separate offense.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00.

SPS 383.29 Range of responses. (1) (a) Pursuant to s. 160.21, Stats., the department shall respond with any one or more of the actions delineated under Table 383.29 if the preventive action limits or enforcement standards enumerated in ch. NR 140 Tables 1 and 2 are exceeded at a point of standards application as a result of the performance of a POWTS, including a POWTS existing prior to July 1, 2000, except as provided in par. (b).

(b) Pursuant to s. 160.255, Stats., the design, installation, use or maintenance of a POWTS is not required to comply with the nitrate standard specified in ch. NR 140 Table 1, except as provided under s. SPS 383.03 (5).

Table 383.29
Department Range of Responses

- Gather more data relative to the cause and significance of the exceedance.
- Determine whether the situation is a human health hazard.
- Issue orders to change or comply with the management or maintenance plan of a specific POWTS or type of onsite wastewater system.
- Issue orders to conform with this chapter, including the prohibition of an activity or practice.
- Determine whether the exceedance is an isolated problem, or is likely to recur.
- Revise or revoke a product approval issued under ch. SPS 384 for a treatment or dispersal component.
- Revise the rules of this chapter or ch. SPS 381, 382, 384 or 385.

(2) Pursuant to s. 160.21 (2), Stats., the point of standards application relative to the performance of POWTS shall be:

(a) Any point of present groundwater use for potable water supply; and

(b) Any point beyond the boundary of the property on which the facility, practice or activity is located.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: am. (1) (a) Register January 2004 No. 577, eff. 2−1−04; correction in (1) (a), (b), Table 383.29 made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

Subchapter III — General Requirements

SPS 383.30 Purpose. This subchapter establishes parameters for the types of POWTS that may be used and how a POWTS may be used.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00.

SPS 383.31 Principles. A POWTS shall be operated and used in such a manner so as not to render the POWTS inoperative or beyond its capabilities, and thereby, create a human health hazard.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00.

SPS 383.32 Prohibitions and limitations. (1) PROHIBITIONS. (a) Except as provided in s. SPS 383.03 (4), the introduction of wastewater or substances in such quantities or concentrations to a POWTS, including a POWTS existing prior to July 1, 2000, that results in exceeding the enforcement standards and preventive action limits specified in ch. NR 140 Tables 1 and 2 at a point of standards application shall be prohibited.

Note: Section SPS 383.03 (4) reads:

(4) GROUNDWATER STANDARDS. (a) Pursuant to s. 160.255, Stats., the design, installation, use or maintenance of a POWTS is not required to comply with the nitrate standard specified in ch. NR 140 Table 1, except as provided under sub. (5).

(b) Pursuant to s. 160.19 (2) (a), Stats., the department has determined that it is not technically or economically feasible to require that a POWTS treat wastewater to comply with the preventive action limit for chloride specified in ch. NR 140, Table 2, as existed on June 1, 1998.

(c) Substances deleterious to a POWTS shall be intercepted, diluted or treated in accordance with s. SPS 382.34 prior to the substance discharging into a POWTS.

(d) The use of a cesspool as a POWTS is prohibited, including any cesspool existing prior to July 1, 2000.

(e) The final discharge of domestic wastewater or POWTS effluent to open bodies of water is prohibited, including by means of plumbing outfall pipes existing prior to July 1, 2000.

(f) The final discharge of domestic wastewater or POWTS effluent to the ground surface is prohibited, including by means of plumbing outfall pipes existing prior to July 1, 2000.

(g) The infiltrative surface of a treatment or dispersal component of a POWTS existing prior to December 1, 1969, which consists in part of soil may not be located in bedrock or groundwater.

(h) The use of camping unit transfer containers as a POWTS holding component shall be restricted to any of the following sites:

1. Campgrounds permitted by the department of health services under ch. DHS 178.

2. Properties where the use of the camping unit transfer container is permitted by an adopted governmental unit ordinance and monitored by the governmental unit.

(2) LOCAL PROHIBITIONS. (a) A municipality may by ordinance prohibit or limit the installation and use of the following technologies, designs or methods as POWTS components:

1. A holding tank.

2. A constructed wetland as a POWTS treatment component.

3. An evapotranspiration bed as a POWTS treatment component.

(b) A municipality may enact ordinances that are more restrictive than the applicable state minimum standards for those POWTS existing prior to December 1, 1972, except as provided in s. SPS 383.03 (2) (b) 2.

Note: The date, December 1, 1972, reflects the point in time at which the state plumbing code became a state−wide uniformly applied code rather than just a minimum standard. Since December 1, 1969 to July 1, 2000, the state plumbing code required 36 inches of soil between the infiltrative surface of a POWTS and high groundwater or bedrock.

(c) A municipality may by ordinance restrict the ownership of a POWTS to a governmental entity or agency when the POWTS is to serve 2 or more structures or buildings that are located on more than one property.

(3) LIMITATIONS. (a) Industrial wastes and wastewater may not, unless approved by the department of natural resources, be introduced into a POWTS.

Note: The department of natural resources regulates the discharge of industrial wastes to land treatment systems under ch. NR 214. Section NR 214.02 reads in part:

"This chapter applies to those discharges of industrial wastes to land treatment systems not regulated under ch. NR 518. This includes but is not limited to liquid wastes, by−product solids and sludges generated by: fruit and vegetable processing, dairy products processing, meat, fish and poultry products processing, mink raising operations, aquaculture, commercial laundromat and motor vehicle cleaning operations and any other industrial, commercial or agricultural operation which results in a point source discharge that has no detrimental effects on the soils, vegetation or groundwater of a land treatment system."

(b) Storm and clear water may be introduced into a POWTS, if the POWTS is designed to accept that wastewater. A POWTS may accept wastewater permitted under s. SPS 382.36 (3).

Note: Section SPS 382.36 (3) (a) permits the discharge of a maximum of 50 gallons per day of clear water wastes to a sanitary drain system connected to a publicly owned treatment works.

(c) Except as provided in ss. NR 116.12 (1) (e) and 116.15 (2) (b), no part of a POWTS may be installed in a floodway.

Note: See s. SPS 383.45 (6) for installations in a floodfringe.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: am. (1) (e) and (f), (3) (a) and (b) Register January 2004 No. 577, eff. 2−1−04; CR 07−100: renum. (1) (h) to be (1) (h) (intro.) and am., cr. (1) (h) 1. and 2., am. (3) (c) Register September 2008 No. 633, eff. 10−1−08; correction in (1) (h) 1. made under s. 13.92 (4) (b) 6., Stats., Register September 2008 No. 633; correction in (1) (h) 1. made under

s. 13.92 (4) (b) 7., Stats., Register December 2010 No. 660; correction in (1) (a), (c), (2) (b), (3) (b) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.33 Abandonment. A subsurface tank or pit that is no longer used as a POWTS component shall be abandoned by complying with all of the following:

(1) Disconnecting all piping to the tanks and pits.

(2) Sealing all disconnected piping to the tanks and pits in accordance with s. SPS 382.21 (2) (h).

(3) Pumping and disposing of the contents from all tanks and pits.

Note: The disposal of the contents from treatment tanks, distribution tanks, seepage pits and holding components is addressed in ch. NR 113 which is administered by the department of natural resources.

(4) Removing all tanks or removing the covers of the tanks or pits and filling the tanks and pits with soil, gravel or an inert solid material.

Note: Pursuant to s. 281.45, Stats., municipalities and sanitary districts may determine the availability of, and require connection to, public sewers. Section 281.45, Stats., reads in part:

"HOUSE CONNECTIONS. To assure preservation of public health, comfort and safety, any city, village or town or town sanitary district having a system of waterworks or sewerage, or both, may by ordinance require buildings used for human habitation and located adjacent to a sewer or water main, or in a block through which one or both of these systems extend, to be connected with either or both in the manner prescribed. If any person fails to comply for more than 10 days after notice in writing the municipality may impose a penalty or may cause connection to be made, and the expense thereof shall be assessed as a special tax against the property."

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; correction in (2) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

Subchapter IV — Design and Installation

SPS 383.40 Purpose. This subchapter establishes minimum parameters for the design and installation of a POWTS for the purpose of:

(1) Safeguarding public health;

(2) Minimizing the level of substances which have a reasonable probability of entering waters of the state; and

(3) Delineating measures, conditions and performance standards by which to evaluate designs.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00.

SPS 383.41 Principles. (1) A POWTS shall be designed to hold wastewater or reduce the contaminant load and disperse the flow of wastewater as specified in this subchapter.

Note: See s. SPS 382.34 (15) for requirements relating to special wastewater or mixed wastewater treatment or containment devices.

(2) A POWTS shall be designed to have sufficient capacity to accommodate the anticipated quantities of wastewater that will be discharged into the system.

(3) A POWTS intended to treat and disperse wastewater shall be designed to have sufficient ability to treat or separate out the anticipated types, quantities and concentrations of wastewater contaminants to be discharged into the system so that the dispersed wastewater will not create a human health hazard.

(4) A POWTS shall be designed to disperse wastewater below the surface of the ground at a rate that promotes long term assimilation into the soil and limits the possibility of surfacing.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00.

SPS 383.42 Application. (1) DESIGN BASIS. The design of a POWTS shall be based on the methods and limitations outlined in this subchapter or on other documented data acceptable to the department.

(2) DESIGN RELATION TO ACTUAL FLOWS AND CONTAMINANT LOADS. For any situation where it is known that the wastewater flow or contaminant load exceeds the parameters of this subchapter, the POWTS shall be designed in relation to the known flow or load.

(3) DESIGN CONSIDERATIONS. The evidence to support assertions relative to contaminant reduction and hydraulic dispersal shall include at least all of the following:

(a) The flow and contaminant load of the influent wastewater.

(b) The ability of all treatment and dispersal components to reduce contaminant load and disperse hydraulic flow into the environment.

(c) The flow velocities and friction losses throughout the system based upon accepted engineering practice.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00.

SPS 383.43 General requirements. (1) MATERIALS. The components of a POWTS shall be constructed of materials and products that are of a type recognized under this chapter or ch. SPS 384.

(2) DESIGN FLOW. In order to accommodate peak wastewater flow, the design wastewater flow of a POWTS shall equal at least 150% of the estimated daily flow generated from the source or sources, unless otherwise approved by the department.

(3) ESTIMATED DAILY COMBINED FLOW FOR A POWTS SERVING A DWELLING. The estimated daily wastewater flow of combined graywater, clear water and blackwater from a dwelling shall be based on one or more of the following:

(a) The following equation:

$$100 \text{ gallons} \times B = F$$

Where: B = number of bedrooms, based on 2 persons per bedroom, unless otherwise approved by the department.

F = Estimated daily wastewater flow per dwelling per day (in gallons), excluding storm water discharges.

(b) A detailed estimate of wastewater flow based upon per capita occupancy or usage of the dwelling or per function occurrence within the dwelling.

(4) ESTIMATED DAILY SEGREGATED GRAYWATER FLOW FOR A POWTS SERVING A DWELLING. The estimated daily wastewater flow of graywater and clear water from a dwelling shall be based on one or more of the following:

(a) The following equation:

$$60 \text{ gallons} \times B = F$$

Where: B = number of bedrooms, based on 2 persons per bedroom, unless otherwise approved by the department.

F = Estimated daily graywater flow per dwelling per day (in gallons), excluding storm water discharges.

(b) A detailed estimate of graywater flow based upon per capita occupancy or usage of the dwelling or per function occurrence within the dwelling.

(5) ESTIMATING SEGREGATED BLACKWATER FLOW FOR A POWTS SERVING A DWELLING. The estimated daily wastewater flow of blackwater from a dwelling shall be based on one or more of the following:

(a) The following equation:

$$40 \text{ gallons} \times B = F$$

Where: B = number of bedrooms, based on 2 persons per bedroom, unless otherwise approved by the department.

F = Estimated daily blackwater flow per dwelling per day (in gallons).

(b) A detailed estimate of blackwater flow based upon per capita occupancy or usage of the dwelling or per function occurrence within the dwelling.

(6) ESTIMATING WASTEWATER FLOW FOR COMMERCIAL FACILITIES. The estimated daily wastewater flow of clear water, graywater, blackwater, or combined graywater−blackwater flow from

public buildings and places of employment shall be based on one or more of the following:

(a) Measured daily wastewater flow over a period of time representative of the facility's use or occupancy.

(b) A detailed estimate of wastewater flow based upon per capita occupancy or usage of the facility or per function occurrence within the facility.

Note: See appendix for further information.

(7) ESTIMATING CONTAMINANT LOADS. Estimates of contaminant loads from dwellings and public facilities shall be based on a detailed analysis including all contaminants listed in s. SPS 383.44 (2) (a).

Note: See appendix for further information.

Note: See Note under s. SPS 383.32 (3) for information relative to industrial wastes.

(8) GENERAL DESIGN REQUIREMENTS. (a) *Flow velocity.* 1. Piping within a POWTS shall be designed and installed to supply wastewater to POWTS treatment and dispersal components while maintaining the velocity required to ensure operation of the POWTS.

2. Gravity flow piping between POWTS components shall be installed at a pitch that produces a computed flow velocity of at least one foot per second when flowing half full.

3. Pressurization equipment or devices and piping to be utilized upstream of a POWTS treatment or dispersal component consisting in part of in situ soil shall be designed and installed to produce a computed velocity of at least 2 feet per second.

4. Gravity piping within a POWTS treatment or dispersal component consisting in part of in situ soil shall be installed level or pitched downstream a maximum 4 inches per 100 feet.

(b) *Distribution and drain pipe sizing.* The piping within a POWTS shall be of a diameter to permit the operation of the POWTS.

(c) *Frost protection.* All POWTS components shall be protected from freezing temperatures that could detrimentally affect component operation to provide wastewater conveyance, treatment or dispersal.

(d) *Component placement.* The orientation of a POWTS treatment or dispersal component consisting in part of in situ soil shall take into account landscape variations in elevation, slope orientation, and other conditions that could affect component performance relative to dispersal or aeration.

(e) *Alarms or warning systems.* 1. a. A POWTS component utilizing a mechanical device to treat wastewater or to distribute effluent shall be provided with an automatic visual or audible means of notifying the user of the POWTS of the failure of the mechanical device.

Note: In accordance with s. SPS 316.300 (1) (a), an alarm that is electrically powered is to be on a separate circuit from the circuit supplying power to the mechanical device.

b. An alarm indicating the failure of a pump shall remain audible or visible until manually turned off.

c. Where duplex pumping equipment is employed to provide continuous component operation in the event that one pump fails, the pumps shall be installed in such a manner so as to provide the continuous operation automatically.

2. A POWTS holding tank shall be provided with an automatic visual or audible means of notifying the user of the POWTS of the necessity for servicing.

(f) *Accessibility.* The design of a POWTS shall include provisions to provide access to all components that require maintenance or observation.

(g) *Anchoring system components.* An exterior subsurface POWTS treatment tank or POWTS holding component to be installed in an area subject to saturated conditions shall be installed so as to prevent flotation of the tank or component.

Note: See appendix for further information.

(h) *Treatment byproducts.* 1. All treatment byproducts discharged from or as a result of operating a POWTS shall be disposed of so as not to create a human health hazard.

Note: The disposal of the contents of holding tanks and the sludge, scum, and contaminated liquids from treatment tanks and components is regulated by the department of natural resources under chs. NR 113 and NR 204.

2. Deleterious or hazardous materials segregated out from effluent flows shall be disposed of in a manner conforming with the rules of the state agency having jurisdiction.

3. Effluent from a POWTS shall be dispersed so as not to create a human health hazard.

4. All POWTS components within a building or structure shall be gas tight unless provisions are made assuring the safety of individuals entering the building or structure.

(i) *Site parameters and limitations.* POWTS treatment, holding and dispersal components shall be located so as to provide the minimum horizontal setback distances as outlined in Table 383.43−1 as safety factors for public health, waters of the state and structures in the event of component failure.

Note: Chapter NR 812 establishes upslope location criteria for wells relative to contamination sources.

Table 383.43−1

Horizontal Setback Parameters

Physical Feature	POWTS Treatment Component Consisting in Part of In Situ Soil or Dispersal Component	Exterior Subsurface Treatment Tank or Holding Tank Component	Servicing, Suction Lines and Pump Discharge Lines
Building	10 feet	5 feet[a]	none[b]
Property Line[c]	5 feet	2 feet	2 feet
Swimming Pool	15 feet	none[b]	none[b]
OHWM of Navigable Waters	50 feet	10 feet	10 feet
Water Service and Private Water Main	10 feet	10 feet	10 feet
Public Water Main	ch. NR 811	ch. NR 811	ch. NR 811
Well	chs. NR 811 & 812	chs. NR 811 & 812	chs. NR 811 & 812

OHWM = Ordinary High−Water Mark

[a] Except camping unit transfer containers.

[b] See s. SPS 383.43 (8) (f) relative to accessibility.

[c] Road−right−of−way lines may be more restrictive than property lines.

Note: See s. SPS 382.365, Table 382.365−4 relative to horizontal setback distances to subsurface infiltrative systems.

Note: The department of transportation under s. Trans 233.08 establishes setback limits from the centerline of state trunk highways or connecting highways to structures and improvements which include septic systems.

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(j) *Service suction and discharge lines.* 1. A suction line or discharge line serving a holding tank for servicing purposes shall comply with all of the following:

a. A pipe serving as the suction or discharge line shall be of an acceptable type in accordance with ch. SPS 384.

b. A suction or discharge line shall terminate with a service port consisting of a quick disconnect fitting with a removable plug.

c. The service port of a suction or discharge line shall terminate at least 2 feet above final grade.

d. The service port of a suction or discharge line shall be identified as such with a permanent sign with lettering at least ½ inch in height.

e. The service port of a suction or discharge line shall be secured to a permanent support that is capable of withstanding the loads and forces placed on the port.

f. A suction or discharge line shall be at least 3 inches in diameter.

2. A suction line serving a holding tank may not be installed in such a manner or arrangement that the tank can be drained by gravity or siphonic action.

3. Where a lift station is employed for servicing a holding tank, the pump discharge line shall conform with subd. 1., except as provided in subd. 3. a. and b.

a. A discharge line from the lift station shall be at least 2 inches in diameter.

b. The lift station pump shall be activated by means of a keyed−switch at the service port.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: am. (2), (6) (intro.), and Table 83.43−1 Register January 2004 No. 577, eff. 2−1−04; CR 07−100: am. Table 83.43−1 Register September 2008 No. 633, eff. 10−1−08; correction in (1), (7), (8) (i), (j) 1. a., Table 383.43−1 made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.44 Parameters for POWTS components consisting of in situ soil. (1) EVALUATION. POWTS treatment and dispersal components consisting in part of in situ soil shall be evaluated in accordance with ch. SPS 385.

(2) INFLUENT QUALITY. (a) The quality of influent discharged into a POWTS treatment or dispersal component consisting in part of in situ soil shall be equal to or less than all of the following:

1. A monthly average of 30 mg/L fats, oil and grease.

2. A monthly average of 220 mg/L BOD_5.

3. A monthly average of 150 mg/L TSS.

(b) The monthly average under par. (a) shall be calculated as the sum of all measurements taken over 30 consecutive days, with at least 6 measurements occurring on 6 separate days, and divided by the number of measurements taken during that period.

(c) Influent discharged to a POWTS treatment or dispersal component that consists in part of unsaturated soil may not contain any solid or suspended solid exceeding 1/8 inch in diameter.

Note: Under s. SPS 383.03 (1) (b), the replacement of a POWTS anaerobic treatment tank (septic tank) in conjunction with this rule would limit any solids within the effluent leaving the tank to a maximum of 1/8−inch diameter.

(3) INFILTRATIVE SURFACE. (a) The infiltrative surface of unsaturated soil to which influent is discharged shall be located at least 24 inches above the estimated highest groundwater elevation and bedrock.

(b) 1. A POWTS designed utilizing a component manual recognized under s. SPS 383.60 (1) shall have at least 6 inches of the soil separation required under par. (a) consisting of an in situ soil type for which soil treatment capability has been credited under Table 383.44−3.

2. The purpose of the 6 inches of in situ soil under subd. 1. shall be to assure that the influent will be assimilated into the original subsurface soils without ponding on the ground surface.

(c) The infiltrative surface of unsaturated soil to which influent is discharged shall be located at least one inch below the finished grade.

(4) CAPABILITIES. (a) 1. a. Except as provided under subd. 2., the dispersal capability of a POWTS treatment or dispersal component consisting in part of unsaturated soil shall be limited to that specified in Table 383.44−1 or Table 383.44−2 based upon the influent quality concentrations being applied.

b. Under subd. 1. a., the influent quality parameter with the highest concentration shall determine the maximum application rate.

c. Except as provided in par. (c), the soil conditions at the infiltrative surface of unsaturated soil to which influent is to be discharged shall be used to establish the maximum application rate for a POWTS dispersal design.

d. The moist soil consistence of the soil horizon in which the infiltrative surface of a POWTS treatment or dispersal component will be located may not be stronger than firm or any cemented classification.

e. The maximum soil application for soil with moderate to strong platy structure shall not exceed 0.2 gals./sq. ft./day for effluent concentrations of ≤30 mg/L BOD_5 and TSS and shall be 0.0 gals./sq. ft./day for effluent concentrations of > 30 mg/L BOD_5 and TSS.

f. The application rates specified under Table 383.44−1 shall only be recognized where the percolation results have been filed with the governmental unit before July 2, 1994.

2. Maximum soil application rates other than those specified in Tables 383.44−1 or 383.44−2 may be employed for the design of a POWTS treatment or dispersal component consisting in part of in situ soil if documentation is submitted and approved under s. SPS 383.22 and is based on soil permeability and evapotranspiration estimates correlated to specific soil characteristics described in a detailed morphological soil evaluation.

(b) The treatment capability of a POWTS treatment component consisting of unsaturated soil shall be limited to that specified in Table 383.44−3, unless otherwise approved by the department.

(c) The design of a treatment or dispersal component consisting in part of in situ soil shall reflect restrictive soil horizons that affect treatment or dispersal.

(5) EFFLUENT DISTRIBUTION. (a) 1. Except as provided in subd. 2., the distribution of effluent to a treatment or dispersal component shall be by means of pressure distribution as specified in Tables 383.44−2 and 383.44−3.

2. Pressure distribution is not required when rehabilitating an existing non−pressurized in situ soil treatment or dispersal component that is persistently ponded and that has at least 24 inches of unsaturated soil beneath the infiltrative surface of the component.

(b) Each dose of effluent by means of pressurized distribution into a treatment or dispersal component consisting in part of in situ soil may not be less than 5 times the void volume of the POWTS distribution laterals.

Table 383.44−1
Maximum Soil Application Rates Based Upon Percolation Rates

Percolation Rate (minutes per inch)	Maximum Monthly Average: BOD_5 > 30mg/L ≤ 220 mg/L TSS > 30 mg/L ≤ 150 mg/L (gals/sq ft/day)	Maximum Monthly Average: BOD_5 ≤ 30 mg/L TSS ≤ 30 mg/L (gals/sq ft/day)
0 to less than 10	0.7	1.2
10 to less than 30	0.6	0.9
30 to less than 45	0.5	0.7
45 to less than 60	0.3	0.5
60 to 120	0.2	0.3
greater than 120	0.0	0.0

Note: > means greater than
≤ means less than or equal to

Table 383.44−2
Maximum Soil Application Rates Based Upon Morphological Soil Evaluation (in gals./sq. ft./day)

Soil Characteristics			Maximum Monthly Average			
Texture[d]	Structure[e]		BOD_5 >30 ≤220mg/L TSS >30 ≤150mg/L		BOD_5 ≤30 mg/L[c] TSS ≤30 mg/L[c]	
	Shape	Grade				
COS, S, LCOS, LS	−−−	0	0.7[a]	0.5[b,c]	1.6[a]	0.5[b]
FS, LFS	−−−	0	0.5		1.0	
VFS, LVFS	−−−	0	0.4		0.6	
COSL, SL	−−−	0M	0.2		0.6	
	PL	1	0.4		0.6	
		2, 3	0.0		0.2	
	PR, BK, GR	1	0.4		0.7	
		2, 3	0.6		1.0	
FSL, VFSL	−−−	0M	0.2		0.5	
	PL	2, 3	0.0		0.2	
	PL, PR, BK, GR	1	0.2		0.6	
	PR, BK, GR	2, 3	0.4		0.8	
L	−−−	0M	0.2		0.5	
	PL	2, 3	0.0		0.2	
	PL, PR, BK, GR	1	0.4		0.6	
	PR, BK, GR	2, 3	0.6		0.8	
SIL	−−−	0M	0.0		0.2	
	PL	2, 3	0.0		0.2	
	PL, PR, BK, GR	1	0.4[c]		0.6	
	PR, BK, GR	2, 3	0.6		0.8	
SI	−−−	−−−	0.0		0.0	
SCL, CL, SICL	−−−	0M	0.0		0.0	
	PL	1, 2, 3	0.0		0.2	
	PR, BK, GR	1	0.2		0.3	
		2, 3	0.4		0.6	
SC, C, SIC	−−−	0M	0.0		0.0	
	PL	1, 2, 3	0.0		0.0	
	PR, BK, GR	1	0.0		0.0	
		2, 3	0.2		0.3	

Note a: With ≤60% rock fragments
Note b: With >60 to <90% rock fragments
Note c: Requires pressure distribution under sub. (5) (a)

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Note d: COS − Coarse Sand
S−Sand
LCOS − Loamy Coarse Sand
LS − Loamy Sand
FS − Fine Sand
LFS − Loamy Fine Sand
VFS − Very Fine Sand
LVFS − Loamy Very Fine Sand
COSL − Coarse Sandy Loam
SL − Sandy Loam
FSL − Fine Sandy Loam
VFSL − Very Fine Sandy Loam
L − Loam
SIL − Silt Loam
SI − Silt
SCL − Sandy Clay Loam
CL − Clay Loam
SICL − Silty Clay Loam
SC − Sandy Clay
C − Clay
SIC − Silty Clay

Note e: PL − Platy
PR − Prismatic
BK − Blocky
GR − Granular
M − Massive
0 − Structureless
1 − Weak
2 − Moderate
3 − Strong

Table 383.44−3

Minimum Depth of Unsaturated Soil for Treatment Purposes[a] (in inches)

Soil Characteristics	Influent Quality[e] and Percent Coarse Fragments					
Texture[d]	Fecal Coliform >10^4 cfu/100mL			Fecal Coliform ≤10^4 cfu/100mL[b]		
	≤35%	>35 to ≤60%	>60 to ≤90%[b,c]	≤35%	>35 to ≤60%	>60 to ≤90%[c]
COS, S, LCOS, LS	36	60	60	24	36	60
FS, VFS, LFS, LVFS	36			24		
COSL, SL	36			24		
FSL, VFSL	36			24		
L	36			24		
SIL	36			24		
SI	36			24		
SCL, CL, SICL	36			24		
SC, C, SIC	36			24		

Note a: Influent quality as per s. SPS 383.44 (2)

Note b: Requires pressure distribution under sub. (5) (a)

Note c: All coarse fragment voids must be filled with fine earth

Note d: COS − Coarse Sand
S−Sand
LCOS − Loamy Coarse Sand
LS − Loamy Sand
FS − Fine Sand
LFS − Loamy Fine Sand
VFS − Very Fine Sand
LVFS − Loamy Very Fine Sand
COSL − Coarse Sandy Loam
SL − Sandy Loam
FSL − Fine Sandy Loam
VFSL − Very Fine Sandy Loam
L − Loam
SIL − Silt Loam
SI − Silt
SCL − Sandy Clay Loam
CL − Clay Loam
SICL − Silty Clay Loam
SC − Sandy Clay
C − Clay
SIC − Silty Clay

Note e: The values for fecal coliform are reported as a monthly geometric mean. The geometric mean shall be determined on the basis of measurements taken over 30 consecutive days, with at least 6 measurements occurring on 6 separate days.

(6) ORIENTATION. (a) 1. The infiltrative surface of a distribution cell within a POWTS treatment or dispersal component consisting in part of in situ soil and located in fill material above original grade shall be level.

2. The longest dimension of a POWTS treatment or dispersal component consisting in part of in situ soil shall be oriented along the surface contour of the component site location unless otherwise approved by the department.

(b) The infiltrative surface of a distribution cell within a POWTS treatment or dispersal component consisting in part of in situ soil and located below the surface of the original grade shall be level.

(c) POWTS treatment or dispersal components consisting in part of in situ soil shall be so located as to minimize the infiltration of storm water into the component.

(7) GEOMETRY. The geometry of a subsurface treatment or dispersal component consisting in part of the in situ soil shall take into account linear loading rates that are based on soil texture, structure, consistence and distance to seasonal soil saturation and restrictive soil horizons.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: (3) (b) and (4) (c), r. and recr. (5) (a) and Tables 83.44−2 and 83.44−3 Register January 2004 No. 577, eff. 2−1−04; CR 07−100: am. (3) (b) 1. and Tables 83.44−2 and 3, r. (5) (b), renum. (5) (c) to be (5) (b) Register September 2008 No. 633, eff. 10−1−08; correction in (1), (3) (b) 1., (4) (a) 1. a., f., 2., (b), (5) (a) 1., Table 383.44−3 made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.45 Installation. (1) GENERAL. A POWTS shall be constructed and installed in such a manner to hold wastewater or reduce the contaminant load and disperse the flow of wastewater in accordance with this subchapter and the plan approval under s. SPS 383.22.

(2) FROZEN SOIL. POWTS treatment and dispersal components consisting in part of in situ soil may not be installed if the soil is frozen at the infiltrative surface of the component.

(3) SNOW COVER. Snow cover shall be removed before excavating or installing POWTS treatment and dispersal components consisting in part of in situ soil.

(4) MOISTURE. The soil moisture content for a POWTS treatment or dispersal component consisting in part of in situ soil shall be evaluated immediately prior to installation of the component. If the soil at the infiltrative surface can be rolled into a ¼−inch wire, the installation may not proceed.

(5) BEDDING. All vessels and pipes of a POWTS shall be bedded in accordance with a product approval under s. SPS 384.10 or a plan approval under s. SPS 383.22.

(6) FLOODPLAIN. (a) All POWTS treatment tanks, holding and dispersal tanks that are located in floodplain areas shall be made and maintained watertight to prevent infiltration.

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(b) Vent pipes and observation pipes serving POWTS components that are located in floodplain areas shall terminate at least 2 feet above regional flood levels.

Note: See s. SPS 383.43 (8) (g) relative to anchoring provisions.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 07−100: am. (6) Register September 2008 No. 633, eff. 10−1−08; correction in (1), (5) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

Subchapter V — Management

SPS 383.50 Purpose. The purpose of this subchapter is to accomplish all of the following:

(1) Establish monitoring, inspection, evaluation, maintenance and servicing requirements for all POWTS, in order to ensure that the POWTS will operate as designed and thereby protect the public health and waters of the state.

(2) Establish maintenance programs operated by governmental units to ensure that all POWTS will be inspected, evaluated, maintained and serviced so that the POWTS will operate as designed and thereby protect the public health and waters of the state.

(3) Provide the department with data by which to make regulatory decisions.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 07−100: r. and recr. Register September 2008 No. 633, eff. 10−1−08.

SPS 383.51 Principles. (1) A POWTS, including a POWTS existing prior to July 1, 2000, shall be maintained at all times so as not to create a human health hazard.

(2) When upon inspection of a POWTS, including a POWTS existing prior to July 1, 2000, any part of the system that is found to be defective in conformance with the applicable provisions of this chapter, the installation or modification plan, or the approvals, the part shall be repaired, renovated, replaced or removed.

Note: Section SPS 387.04 (2) (a) to (e) also establishes management and maintenance requirements for a POWTS that is located in a governmental unit which participates in the replacement and rehabilitation program under s. 145.245, Stats.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00.

SPS 383.52 Responsibilities. (1) (a) 1. The owner of a POWTS shall be responsible for ensuring that the operation and maintenance of the POWTS occurs in accordance with this chapter and the approved management plan under s. SPS 383.54 (1).

2. The owner of a POWTS shall be responsible for ensuring that access opening covers remain locked or secured except for inspection, evaluation, maintenance or servicing purposes.

(b) The owner of a POWTS existing prior to July 1, 2000, shall be responsible for ensuring that the maintenance of the POWTS occurs in accordance with s. SPS 383.54 (4).

(c) 1. The owner of a POWTS, including a POWTS existing prior to July 1, 2000, shall maintain a maintenance contract with a POWTS maintainer or a business utilizing a POWTS maintainer for the POWTS as long as the POWTS is utilized and, if the management plan for the POWTS under s. SPS 383.54 (1) involves one or more of the following:

a. Evaluating or monitoring any part of the system at an interval of 12 months or less.

b. Maintaining any part of the system at an interval of 12 months or less.

2. The owner of a POWTS, including a POWTS existing prior to July 1, 2000, shall maintain a maintenance or service contract with a certified septage servicing operator under ch. NR 114 for the POWTS as long as the POWTS is utilized and, if the management plan for the POWTS under s. SPS 383.54 (1) involves the servicing of any holding, treatment or dispersal component at an interval of 12 months or less.

(2) A POWTS, including a POWTS existing prior to July 1, 2000, that is not maintained in accordance with the approved management plan or as required under s. SPS 383.54 (4) shall be considered a human health hazard.

(3) The activities relating to evaluating, monitoring and maintaining POWTS components after the initial installation of the POWTS in accordance with an approved management plan or as required by s. SPS 383.54 (4) (c) shall be conducted by a person who holds registration issued by the department as a registered POWTS maintainer.

Note: See s. SPS 305.36 concerning the application and qualification requirements to become a registered POWTS maintainer.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: am. (3) Register January 2004 No. 577, eff. 2−1−04; CR 07−100: renum. (1) (a) to be (1) (a) 1., cr. (1) (a) 2., am (1) (b), (c) 1. (intro.) and (3) Register September 2008 No. 633, eff. 10−1−08; correction in (1) (a) 1., (b), (c) 1. (intro.), 2., (2), (3) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.53 General. (1) No product for chemical or physical restoration or chemical or physical procedures for POWTS, including a POWTS existing prior to July 1, 2000, may be used unless approved by the department in accordance with ss. SPS 384.10 and 384.14.

(2) Nothing in this subchapter shall limit a governmental unit's authority and power in establishing a mandatory POWTS maintenance program that is more restrictive than what is specified in this subchapter, including management or maintenance undertaken by the governmental unit.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 07−100: am. Register September 2008 No. 633, eff. 10−1−08; correction in (1) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.54 Management requirements. (1) MANAGEMENT PLAN. (a) The management plan for each POWTS shall include information and procedures for maintaining the POWTS to operate and function within the standards of this chapter and as designed and approved.

(b) The management plan for a POWTS shall be a part of the plan submittal under s. SPS 383.22 or 384.10.

(c) The management plan for POWTS shall specify all necessary maintenance and servicing information which may include, but is not limited to all of the following:

1. Accumulated solids or byproduct removal requirements.

2. Influent quantities and qualities and effluent quantities and qualities.

3. Metering, sampling and monitoring schedules and requirements.

4. Load and rest schedules.

5. Servicing frequency requirements.

6. Installation and inspection checklists.

7. Evaluation, monitoring and maintenance schedules for mechanical POWTS components.

8. Start up and shutdown procedures.

9. Procedure for abandonment.

(d) If the owner of the POWTS wishes to operate or maintain a POWTS differently than that specified in the approved management plan, a written request for approval to amend the management plan shall be submitted to the agency that initially reviewed the installation plan under s. SPS 383.22.

(e) The management plan for a POWTS shall specifically address the servicing mechanics of an aerobic or anaerobic treatment tank or a holding tank where either of the following conditions exist:

1. The bottom of the tank is located more than 15 feet below the elevation where the servicing pad is located.

2. The bottom of the tank is located more than 150 feet horizontally from where the servicing pad is located.

(2) METERING AND MONITORING. (a) *General.* The management plan specified in sub. (1) shall include the metering or monitoring of POWTS influent or effluent as specified in this subsection.

(b) *Department option.* The department may require the metering or monitoring of any POWTS to evaluate the operation of the POWTS.

(c) *Governmental unit option.* A governmental unit may require the metering or monitoring of a POWTS holding component as part of a maintenance and monitoring tracking program.

(d) *Metering influent flows.* 1. When and where the metering of a POWTS is required, influent flows to POWTS shall be metered by one of the following methods:

a. Installing event counters and elapsed time meters.

b. Installing water meters to meter the water distribution system flow to the POWTS.

c. Metering wastewater flow from all parts of the plumbing system discharging to the POWTS.

d. Metering the water distribution system and metering exterior hydrant use, except as provided in subd. 2.

2. Where meters are installed on water distribution systems existing prior to July 1, 2000, the entire water distribution system may be metered and the exterior hydrant usage estimated and subtracted from the total flow to meet the requirements of this paragraph.

(e) *Monitoring influent and effluent loads.* 1. When and where the monitoring of groundwater is required, groundwater monitoring wells constructed in accordance with ch. NR 141 shall be utilized.

2. When influent or effluent contaminants are to be monitored, samples shall be collected in accordance with the requirements of the approved management plan or, where no procedures are specified, in accordance with published sampling procedures accepted by the department.

Note: Acceptable sampling procedures include those contained in the following sources:

"Procedures Manual for Ground Water Monitoring at Solid Waste Disposal Sites," EPA SW−611, Office of Water and Waste Management, U. S. Environmental Protection Agency, December 1980, Washington, D. C.

"Techniques of Water Resources Investigations of the United States Geological Survey, Guidelines for Collection and Field Analysis of Ground Water Samples for Selected Unstable Constituents," Book I, Chapter D2, U.S. Geological Survey, Washington, D. C.

"Procedures for the Collection of Representative Water Quality Data from Monitoring Wells," Cooperative Groundwater Report 7, Illinois State Water Survey, 1981, Champaign, Illinois.

"Manual of Ground Water Sampling Procedures," NWWA/EPA Series, Robert S. Kerr Environmental Research Laboratory, 1981, Ada, Oklahoma.

"Groundwater Sampling Procedures Guidelines," Wisconsin DNR, PUBL−WR−153, February 1987.

"Groundwater Sampling Procedures Field Manual," Wisconsin DNR, PUBL−WR−168, September 1987.

3. All groundwater samples collected to evaluate influent or effluent quality, except samples collected for total coliform bacteria analysis and the field analyses for pH, specific conductance and temperature, shall be analyzed by a laboratory certified under s. 299.11, Stats., and rules adopted under that section.

4. The results of the analysis required under subd. 2. shall be maintained and reported as required in the approved management plan and in accordance with s. SPS 383.55 (1) (a).

(3) SERVICING REQUIREMENTS. (a) The management plan specified in sub. (1) shall reflect the servicing schedules of POWTS components as specified in this subsection

(b) The servicing frequency of an anaerobic treatment tank for a POWTS shall occur at least when the combined sludge and scum volume equals 1/3 of the tank volume.

(c) The servicing frequency of a holding tank for a POWTS, except for camping unit transfer containers, shall occur at least when the wastewater of the tank reaches a level of one foot below the inlet invert of the tank.

Note: The servicing of POWTS holding and treatment components, including septic tanks and holding tanks, is required to be performed by licensed pumpers under chs. NR 113 and NR 114.

(4) EXISTING POWTS. (a) The servicing frequency of an anaerobic treatment tank for a POWTS existing prior to July 1, 2000, shall occur at least when the combined sludge and scum volume equals 1/3 of the tank volume.

(b) The servicing of a holding tank for a POWTS existing prior to July 1, 2000, except for camping unit transfer containers, shall occur at least when the wastewater of the tank reaches a level of one foot below the inlet invert of the tank.

(c) The inspection, evaluation, or maintenance or servicing of POWTS treatment components other than those under pars. (a) and (b) existing prior to July 1, 2000, shall be provided in accordance with the requirements specified by the manufacturer or designer of the component.

(d) 1. Except as provided in subd. 3., a POWTS that exists prior to July 1, 2000, and that utilizes a treatment or dispersal component consisting in part of in situ soil shall be visually inspected at least once every 3 years to determine whether wastewater or effluent from the POWTS is ponding on the surface of the ground.

2. The inspection required by subd. 1. shall be performed by one of the following:

a. A licensed master plumber.

b. A licensed master plumber−restricted service.

c. A certified POWTS inspector.

d. A certified septage servicing operator under ch. NR 114.

e. A registered POWTS maintainer.

3. A governmental unit that has completed the inventory required under s. SPS 383.255 (1) (a) may, by ordinance, extend the visual inspection interval required under subd. 1., to a maximum period of 5−years for a POWTS serving an occasionally occupied structure or facility.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: cr. (1) (e) and (4) (d) 2. e., r. and recr. (2) (c), am. (2) (d) 1. (intro.) Register January 2004 No. 577, eff. 2−1−04; CR 07−100: am. (4) (c) and (d) 1., cr. (4) (d) 3. Register September 2008 No. 633, eff. 10−1−08; correction in (1) (b), (d), (2) (e) 4., (4) (d) 3. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.55 Reporting requirements. (1) (a) The owner of a POWTS or the owner's agent shall report to the governmental unit or designated agent at the completion of each inspection, evaluation, maintenance or servicing event specified in the approved management plan, except for camping unit transfer containers.

(b) The owner of a POWTS existing prior to July 1, 2000 or the owner's agent shall report to the governmental unit or designated agent at the completion of each inspection, evaluation, maintenance or servicing event required under s. SPS 383.54 (4), except for camping unit transfer containers.

(c) The owner of a POWTS is responsible for fulfillment of the reporting requirements under this section.

(2) The inspection, evaluation, maintenance and servicing reports required under sub. (1) shall be submitted to the governmental unit or designated agent in accordance with all of the following:

(a) In a manner specified by the governmental unit or designated agent.

(b) Within 30 calendar days from the date of inspection, evaluation, maintenance or servicing.

(c) By the owner or the owner's agent.

(3) The inspection, evaluation, maintenance and servicing reports required under sub. (1) shall include the following information:

(a) A POWTS identifying number.

(b) The location of the POWTS.

(c) The date of inspection, evaluation, maintenance or servicing.

(d) The license, certification or registration number of the individual performing the inspection, evaluation, maintenance or servicing.

(e) Other information required by the approved management plan.

(4) The department, governmental unit or designated agent may require verification of any information contained in an inspection, evaluation, maintenance and servicing report.

Note: This subsection does not require the maintaining of test data which is collected voluntarily and which is not being collected to determine compliance with this chapter.

(5) (a) The governmental unit or designated agent shall maintain records relating to the inspection, evaluation, maintenance and servicing of POWTS as specified in this section for a period of not less than 6 years.

(b) Upon request by a governmental unit and the agreement of the department, the governmental unit may delegate to the department the responsibility to maintain records relating to the inspection, evaluation, maintenance and servicing of POWTS as specified in this section.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: am. (1), (2), and (5) Register January 2004 No. 577, eff. 2−1−04; CR 07−100: am. (1), (2) (intro.), (b), (3) (intro.), (c), (d), (4) and (5), cr. (1) (c) Register September 2008 No. 633, eff. 10−1−08; correction in (1) (b) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

Subchapter VI — Recognized Methods and Technologies

SPS 383.60 Purpose. (1) Specific types of methods and technologies may be recognized by the department under the voluntary product approval process in s. SPS 384.10 (3) as conforming with subchs. IV and V and may be utilized in the design of POWTS for a specific project.

Note: Subsection SPS 384.10 (3) delineates a process for the voluntary submittal of specific methods and technologies that are proposed to be utilized as POWTS holding, treatment or dispersal components and for the department's evaluation of such submittals. Methods and technologies recognized under this process may be utilized in any POWTS within the specifications and parameters of the method or technology. Methods and technologies recognized under this process do not require the submittal of data at the time of plan review and approval process under s. SPS 383.22 to substantiate the performance of the specific method or technology.

Note: Information regarding recognized methods and technologies may be downloaded at: http://dsps.wi.gov/SB/SB−PubsPlumbProdReg.html.

(2) This subchapter does not limit the use of other methods and technologies for POWTS or POWTS components the performance of which has been recognized under the plan review and approval process of s. SPS 383.22 or the voluntary product approval process of s. SPS 384.10 (3) or both.

Note: Section SPS 383.22 delineates the process for the submittal of a plan for a POWTS design to be utilized for a specific project at a specific site. Under this section methods and technologies for POWTS holding, treatment or dispersal components that have not been recognized under s. SPS 384.10 (3), require the submittal to the department of data or information to substantiate performance claims. The approval of a POWTS plan by the department under this section covers only a specific project at a specific site, and does not constitute the recognition of a method or technology for other projects or sites.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 07−100: am. (1) Register September 2008 No. 633, eff. 10−1−08; correction in (1), (2) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.61 Parameters for using acceptable methods and technologies. When a design of a POWTS for a specific project utilizes a method or technology recognized under s. SPS 384.10 (3), a deviation from the specifications and limitations relative to the installation and maintenance of that method or technology shall constitute a violation of this chapter.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 07−100: renum. from Comm 83.62 Register September 2008 No. 633, eff. 10−1−08; correction made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

Subchapter VII — Department Performance Monitoring

SPS 383.70 Purpose. (1) To address the desire for an ongoing source of information on the performance of POWTS system designs, the department shall maintain an ongoing performance−monitoring program for the various POWTS methods and technologies. The monitoring program shall be in addition to the periodic inspection and monitoring of POWTS under subch. V. The monitoring program shall be coordinated by the department in conjunction with the ongoing POWTS experimental and research program.

(2) The purpose of the performance monitoring program is to:

(a) Provide additional information on the long−term performance of the various POWTS methods and technologies, to confirm their reliability, and to provide data for improvements; and

(b) Monitor the various methods and technologies relative to long−term compliance with the groundwater standards.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00.

SPS 383.71 Department procedures. (1) Both currently installed POWTS and newly installed POWTS may be included in the performance monitoring program conducted by the department.

(2) The department may include both the performance of individual POWTS treatment components as well as the output of components at the edge of the design treatment zone as part of the monitoring program.

(3) The department shall support the performance−monitoring program from Wisconsin Fund allocations and program revenue funds generated from POWTS plan review and sanitary permits. If funds for this purpose become available from other sources, those funds may be used to support the monitoring program.

(4) The department shall utilize the technical advisory committee assembled under s. SPS 384.10 (3) (c) 2. to advise the department on the performance−monitoring program. The committee shall advise the department in at least the following areas:

(a) Development of performance monitoring protocols.

(b) Selection of the POWTS methods and technologies to be monitored.

(c) Identification of funding sources.

(d) The interpretation of the results of the monitoring program.

(5) The decision by the department on the number, types and locations of methods and technologies to be monitored shall take into consideration at least the following factors:

(a) The availability of other scientific data on the performance of a specific method or technology.

(b) The number times of each method or technology may be utilized annually.

(c) The likelihood that the method or technology will be adapted for soil and site conditions not previously utilized.

(d) The availability of funds.

(e) The risk factors associated with public health concerns and groundwater and surface water standards.

(6) The initial performance monitoring program undertaken by the department shall emphasize at least the following two circumstances:

(a) Monitoring where there is a high density of systems.

Note: The initial focus would be on subdivisions with lots of 1.5 acres or less.

(b) Monitoring where the depth of suitable in situ soil is near the minimum 6 inches specified under s. SPS 383.44 (3) (b) 1.

(7) (a) The department shall prepare an annual written report of performance−monitoring activities undertaken and the results of those activities.

(b) The report under par. (b) shall be prepared annually and provided to the groundwater coordinating council assembled under s. 160.50, Stats.

(c) The department shall prepare the first report no later than December 31, 2001.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; correction in (4) (intro.), (6) (b) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

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Chapter SPS 381

DEFINITIONS AND STANDARDS

SPS 381.01 Definitions.
SPS 381.20 Incorporation of standards by reference.

Note: Chapter Comm 81 was renumbered chapter SPS 381 under s. 13.92 (4) (b) 1., Stats., Register December 2011 No. 672.

SPS 381.01 Definitions. In chs. SPS 381 to 387, except as otherwise specifically defined:

(1) "Accepted engineering practice" means a specification, standard, guideline or procedure in the field of plumbing or related thereto, generally recognized and accepted as authoritative documented through national standards or specifications.

(2) "Accessible" when applied to a fixture, appliance, pipe, fitting, valve or equipment, means having access for maintenance, but which first may require the removal of an access panel or similar obstruction.

(2m) "Accessory building" means a detached building, not used as a dwelling unit but is incidental to that of the dwelling.

(3) "Aerobic treatment component" means a unit for the treatment of wastewater that utilizes the principle of oxidation for biological decomposition.

(4) "Agent" means an individual or agency recognized by the department to act on the department's behalf relative to a specific activity or function.

(5) "Air−break" means a piping arrangement for a drain system where the wastes from a fixture, appliance, appurtenance or device discharge by means of indirect or local waste piping terminating in a receptor at a point below the flood level rim of the receptor and above the outlet of the trap serving the receptor.

(6) "Air−gap, drain system" means the unobstructed vertical distance through the free atmosphere between the outlet of indirect or local waste piping and the flood level rim of the receptor into which it discharges.

(7) "Air−gap, water supply system" means the unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank or plumbing fixture and the flood level rim or spill level of the receptacle.

(7e) "Alternate plumbing system" means a type of plumbing system designed in such a manner that valid and reliable data shall demonstrate to the department that the plumbing system is in compliance with the intent of chs. SPS 381 to 384.

(7m) "Ambulatory surgery center" means a health care facility that accepts federal funding in accordance with 42 CFR 416 of the federal register for health care finance and where 4 or more individuals that undergo a surgical procedure for which federal reimbursement is based.

(8) "Anaerobic treatment component" means a unit for the treatment of wastewater which utilizes molecular oxygen in the absence of free oxygen for biological respiration and decomposition.

(9) "Approved" means acceptance documented in writing by the department.

(10) "Appurtenance" means a manufactured device or prefabricated assembly of component parts which is an adjunct to a plumbing product or plumbing system.

(11) "Area drain" means a receptor designed to collect storm waters from an open area.

(12) "Areawide water quality management plan" means those plans prepared by the department of natural resources, including those plans prepared by agencies designated by the governor under the authority of ss. 281.11, 281.12 (1), 281.15, and 283.83, Stats., for the purpose of managing, protecting and enhancing groundwater and surface water of the state.

Note: See ch. SPS 382 Appendix for a list of water quality management agencies and their addresses.

(13) "Aspirator" means a fitting or device supplied with water or other fluid under positive pressure which passes through an integral orifice or constriction causing a vacuum.

(14) "Autopsy table" means a fixture or table used for post−mortem examination.

(15) "Automatic fire sprinkler system" has the meaning specified under s. 145.01 (2), Stats.

Note: Section 145.01 (2), Stats., reads: "Automatic fire sprinkler system", for fire protection purposes, means an integrated system of underground and overhead piping designed in accordance with fire protection engineering standards. The system includes a suitable water supply, such as a gravity tank, fire pump, reservoir or pressure tank or connection beginning at the supply side of an approved gate valve located at or near the property line where the pipe or piping system provides water used exclusively for fire protection and related appurtenances and to standpipes connected to automatic sprinkler systems. The portion of the sprinkler system above ground is a network of specially sized or hydraulically designed piping installed in a building, structure or area, generally overhead, and to which sprinklers are connected in a systematic pattern. The system includes a controlling valve and a device for actuating an alarm when the system is in operation. The system is usually activated by heat from a fire and discharges water over the fire area.

(16) "Backflow" means the unwanted reverse flow of liquids, solids or gases.

(17) "Back pressure" means a pressure greater than the supply pressure that may cause backflow.

(17e) "Backflow preventer" means any generic backflow prevention device or assembly.

(18) "Backflow preventer with intermediate atmospheric vent" means a type of cross connection control device which consists of 2 independently acting check valves, internally force−loaded to a normally closed position and separated by an intermediate chamber with a means for automatically venting to atmosphere where the venting means is internally force−loaded to a normally open position. The terms "backflow preventer" or "dual check valve type with atmospheric port backflow preventer" has the same meaning as backflow preventer with intermediate atmospheric vent.

(19) "Back siphonage" means the creation of a backflow as a result of negative pressure.

(21) "Backwater valve" means a device designed to prevent the reverse flow of wastewater in a drain system.

(22) "Ballcock" means a water supply valve opened or closed by means of a float or similar device used to supply water to a tank.

(23) "Bathroom group" means a water closet, lavatory and a bathtub or shower located together on the same floor level.

(24) "Battery of fixtures" means any group of 2 or more fixtures that discharge into the same horizontal branch drain.

(25) "Bedpan sterilizer" means a fixture used for sterilizing bedpans or urinals by direct application of steam, boiling water or chemicals.

(26) "Bedpan washer and sanitizer" means a fixture designed to wash bedpans and to flush the contents into the sanitary drain system and which may also provide for disinfecting utensils by scalding with steam or hot water.

(27) "Bedpan washer hose" means a device supplied with hot or cold water, or both, and located adjacent to a water closet or clinical sink to be used for cleansing bedpans.

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(28) "Bedrock" means rock that is exposed at the earth's surface or underlies soil material and includes:

(a) Weathered in−place consolidated material, larger than 2 mm in size and greater than 50% by volume; and

(b) Weakly consolidated sandstone at the point of increased resistance to penetration of a knife blade.

(29) "Bell" means the portion of a pipe that is enlarged to receive the end of another pipe of the same diameter for the purpose of making a joint.

(30) "Bench mark" or "BM" means a permanently established point, the elevation of which is assumed or known, which serves as a vertical reference point, and which may also serve as a horizontal reference point.

(31) "Blackwater" means wastewater contaminated by human body waste, toilet paper and any other material intended to be deposited in a receptor designed to receive urine or feces.

(32) "BOD_5" or "biochemical oxygen demand 5 day" means a measure of the amount of biodegradable organic matter in water.

(33) "Boiler blow−off basin" means a vessel designed to receive the discharge from a boiler blow−off outlet and to cool the discharge to a temperature that permits safe entry into the drain system.

(34) "Branch" means a part of a piping system other than a riser, main or stack.

(35) "Branch interval" means a vertical measurement of distance, 8 feet or more in length, between the connections of horizontal branches to a drainage stack.

Note: See ch. SPS 382 Appendix for explanatory material.

(35m) "Branch tailpiece" means a fitting consisting of a combination tail piece and a wye.

(36) "Branch vent" means a vent serving more than one fixture drain.

(37) "B.T.U." means British Thermal Units.

(38) "Building" means a structure for support, shelter or enclosure of persons or property.

(39) "Building drain" means horizontal piping within or under a building, installed below the lowest fixture or the lowest floor level from which fixtures can drain by gravity to the building sewer.

(40) "Building drain branch" means a fixture drain which is individually connected to a building drain and is vented by means of a combination drain and vent system.

(41) "Building drain, sanitary" means a building drain which conveys wastewater consisting in part of domestic wastewater.

(42) "Building drain, storm" means a building drain which conveys storm water, clear water, or both.

(43) "Building permit" means any written permission from a municipality that allows construction to commence on a structure.

(44) "Building sewer" means that part of the drain system not within or under a building which conveys its discharge to a public sewer, private interceptor main sewer, private onsite wastewater treatment system or other point of discharge or dispersal.

(45) "Building sewer, sanitary" means a building sewer which conveys wastewater consisting in part of domestic wastewater.

(46) "Building sewer, storm" means a building sewer which conveys storm water, clear water, or both.

(47) "Building subdrain" means the horizontal portion of a drain system which does not flow by gravity to the building sewer.

(48) "Building subdrain branch" means a fixture drain which is individually connected to a building subdrain and is vented by means of a combination drain and vent system.

(49) "Burr" means a roughness or metal protruding from the walls of a pipe usually as the result of cutting the pipe.

(50) "Business establishment" means any industrial or commercial organization or enterprise operated for profit, including but not limited to a proprietorship, partnership, firm, business trust, joint venture, syndicate, corporation or association.

(51) "Camping unit transfer container" means a type of stationary holding tank used to collect and hold wastewater discharges generated by an individual camping trailer or recreational vehicle.

(51m) "Campsite receptor" means the vertical drain piping and trap combination that receives wastewater from recreational vehicles.

(52) "Catch basin" means a watertight receptacle built to arrest sediment of surface, subsoil or other waste drainage, and to retain oily or greasy wastes, so as to prevent their entrance into the building drain or building sewer.

(53) "Cesspool" means an excavation which receives domestic wastewater by means of a drain system without pretreatment of the wastewater and retains the organic matter and solids permitting the liquids to seep from the excavation.

(54) "Circuit vent" means a method of venting 2 to 8 traps or trapped fixtures without providing an individual vent for each trap or fixture.

(55) "Cleanout" means an accessible opening in a drain system used for the removal of obstructions.

(56) "Clear water" means wastewater other than storm water, having no impurities or where impurities are below a minimum concentration considered harmful by the department, including but not limited to noncontact cooling water and condensate drainage from refrigeration compressors and air conditioning equipment, drainage of water used for equipment chilling purposes and cooled condensate from steam heating systems or other equipment.

(56e) "Clinic sink" means a fixture having an integral trap and a flushing rim so that water cleanses the interior surface.

Note: This fixture has flushing and cleansing characteristics similar to a water closet. A clinic sink may also be referred to as a clinic service sink, a bedpan washing sink or a flushing rim sink.

(57) "Cold water" means water at a temperature less than 85°F.

(58) "Combination fixture" means a fixture combining one sink and laundry tray or a 2− or 3−compartment sink or laundry tray in one unit.

(59) "Combination drain and vent system" means a specially designed system of drain piping embodying the wet venting of one or more fixtures by means of a common drain and vent pipe adequately sized to provide free movement of air in the piping.

(59m) "Combination private water main" means a private water main that serves a fire protection system and any number of plumbing fixtures.

(59s) "Combination water service" means a water service that serves a fire protection system and any number of plumbing fixtures.

(60) "Common vent" means a branch vent connecting at or downstream from the junction of 2 fixture drains and serving as a vent for those fixture drains.

(60e) "Community−based residential facility" has the meaning specified under s. 50.01 (1g), Stats.

Note: Section 50.01 (1g), Stats., reads: "Community−based residential facility" means a place where 5 or more adults who are not related to the operator or administrator and who do not require care above intermediate level nursing care reside and receive care, treatment or services that are above the level of room and board but that include no more than 3 hours of nursing care per week per resident. "Community−based residential facility" does not include any of the following:

(a) A convent or facility owned or operated by members of a religious order exclusively for the reception and care or treatment of members of that order.

(b) A facility or private home that provides care, treatment and services only for victims of domestic abuse, as defined in s. 46.95 (1) (a), Stats., and their children.

(c) A shelter facility as defined under s. 16.308 (1) (d), Stats.

(d) A place that provides lodging for individuals and in which all of the following conditions are met:

1. Each lodged individual is able to exit the place under emergency conditions without the assistance of another individual.

2. No lodged individual receives from the owner, manager or operator of the place or the owner's, manager's or operator's agent or employee any of the following:

a. Personal care, supervision or treatment, or management, control or supervision of prescription medications.

b. Care or services other than board, information, referral, advocacy or job guidance; location and coordination of social services by an agency that is not affiliated with the owner, manager or operator, for which arrangements were made for an individual before he or she lodged in the place; or, in the case of an emergency, arrangement for the provision of health care or social services by an agency that is not affiliated with the owner, manager or operator.

(e) An adult family home.

(f) A residential care apartment complex.

(g) A residential facility in the village of Union Grove that was authorized to operate without a license under a final judgment entered by a court before January 1, 1982, and that continues to comply with the judgment notwithstanding the expiration of the judgment.

(61) "Conductor" means a drain pipe inside the building which conveys storm water from a roof to the storm drain or storm sewer.

(61m) "Containment" means the installation of a cross connection control method, device or assembly to prohibit the flow of contamination from a building or facility into a water supply system.

(62) "Contaminant load" means the concentrations of substances in a wastewater stream.

(62e) "Containment tank" means a device with a valved outlet designed to temporarily hold potentially hazardous wastewater for evaluation before discharging to a POWTS or municipal sewer.

(62m) "Continuous pressure" means a pressure greater than atmospheric and exerted for a period of more than 12 continuous hours.

(62s) "Conveyance system" means that portion of a drain system that consists of a series of pipes that transport water from one area to another without providing detention.

(63) "Corporation cock" means a valve:

(a) Installed in a private water main or a water service at or near the connection to a public water main; or

(b) Installed in the side of a forced main sewer to which a forced building sewer is connected.

(64) "Critical level" means the reference point on a vacuum breaker that must be submerged before backflow can occur. When the critical level is not indicated on the vacuum breaker, the bottom of the vacuum breaker shall be considered the critical level.

(65) "Cross connection" means a connection or potential connection between any part of a water supply system and another environment containing substances in a manner that, under any circumstances, would allow the substances to enter the water supply system by means of back siphonage or back pressure.

(65m) "Cross connection control assembly" means a testable backflow preventer consisting of an arrangement of components.

(66) "Cross connection control device" means any mechanical device which automatically prevents backflow from a contaminated source into a potable water supply system.

(67) "Curb stop" means a valve placed in a water service or a private water main, usually near the lot line.

(68) "Dead end" means a branch leading from a drain pipe, vent pipe, building drain or building sewer and terminating at a developed length of 2 feet or more by means of a plug, cap or other closed fitting.

(69) "Department" means the department of safety and professional services.

(70) "Design wastewater flow" means 150% of the estimated wastewater flow generated by a dwelling, building or facility.

(70m) "Detention" means the collection and temporary storage of water for subsequent gradual discharge.

(71) "Determination of failure" has the meaning specified under s. 145.245 (1) (a), Stats.

Note: Section 145.245 (1) (a), Stats., reads:

"Determination of failure" means any of the following:

1. A determination that a private sewage system is failing, according to the criteria under sub. (4), based on an inspection of the private sewage system by an employee of the state or a governmental unit who is certified to inspect private sewage systems by the department.

2. A written enforcement order issued under s. 145.02 (3) (f), 145.20 (2) (f) or 281.19 (2).

3. A written enforcement order issued under s. 254.59 (1) by a governmental unit.

(72) "Developed length" means the length of pipe line measured along the centerline of the pipe and fittings.

(72e) "Dfu" means drainage fixture unit.

(73) "Diameter" means in reference to a pipe the nominal inside diameter of the pipe.

(74) "Disinfection unit" means a type of POWTS treatment component, excluding a soil−based POWTS treatment component, that utilizes a chemical or photoelectric process to reduce the wastewater fecal coliform contaminant load.

(75) "Dispersal zone" means a dimensional volume of in situ soil that receives wastewater for treatment or distributes final effluent for dispersal.

(76) "Distribution cell" means a dimensional zone that is part of a POWTS treatment or dispersal component where wastewater is disseminated into in situ soil or engineered soil.

(77) "Documented data" means data which is developed in accordance with scientifically valid analytical protocols including field trials where appropriate, is subjected to peer review, results from more than one study, and consistent with other credible research.

(78) "Domestic wastewater" means the type of wastewater, not including storm water, normally discharged from or similar to that discharged from plumbing fixtures, appliances and devices including, but not limited to sanitary, bath, laundry, dishwashing, garbage disposal and cleaning wastewaters.

(79) "Double check backflow prevention assembly" means a type of cross connection control assembly which is composed of 2 independently acting check valves internally force−loaded to a normally closed position, tightly closing shut−off valves located at each end of the assembly and fitted with test cocks. The term "double check valve backflow preventer" has the same meaning as double check backflow prevention assembly.

(80) "Double check detector fire protection backflow preventer−assembly" means an assembly serving a fire protection system and consisting of 2 independently acting check valves, internally forced loaded to a normally closed position, 2 tightly closing shut−off valves, and properly located test cocks which also includes a parallel flow meter to indicate leakage or unauthorized use of water downstream of the assembly.

(80m) "Double check fire protection backflow prevention assembly" means an assembly serving a fire protection system and consisting of 2 independently acting check valves, internally forced loaded to a normally closed position, 2 tightly closing shut−off valves, and properly located test cocks. The term "double check valve backflow preventer for fire protection systems" has the same meaning as double check fire protection backflow prevention assembly.

(81) "Drain" means any pipe that carries wastewater or water−borne wastes.

(82) "Drain system" includes all the piping or any portion of the piping within public or private premises which conveys wastewater to a legal point of disposal, but does not include the mains of public sewer systems or a private onsite wastewater treatment system or public sewage treatment or disposal plant.

(82e) "Dual check backflow preventer wall hydrant−freeze resistant type" means a type of hose bibb that provides protection of the potable water supply from contamination due to backsiphonage or backpressure without damage to the device due to freezing, and is field testable to verify protection under the high hazard conditions present at a hose threaded outlet.

(82m) "Dual check valve type with atmospheric port backflow preventer" has the same meaning as specified in sub. (18).

(83) "Dwelling" means a structure, or that part of a structure, which is used or intended to be used as a home, residence or sleeping place by one person or by 2 or more persons maintaining a common household, to the exclusion of all others.

(84) "Effluent" means liquid discharged from a process, device, appurtenance or piping system.

(85) "Ejector" means an automatically operated device to elevate wastewater by the use of air under higher than atmospheric pressure.

(86) "Elevation" or "EL" means the vertical distance from the datum to a point under investigation.

(87) "Enforcement standard" or "ES" has the meaning specified under s. 160.01 (2), Stats.

Note: Section 160.01 (2), Stats., reads:
"Enforcement standard" means a numerical value expressing the concentration of a substance in groundwater which is adopted under ss. 160.07 and 160.09.

(88) "Engineered soil" means a mineral product that is equivalent to in situ soil for which treatment capability has been credited under Table 383.44−3, or superior to in situ soil in its ability to treat or disperse domestic wastewater from a POWTS.

(89) "Engineered system" means a system designed to meet the intent of the code but not the enumerated specifications of the state plumbing code.

(90) "Estimated wastewater flow" means the typical quantity of domestic wastewater generated daily by a dwelling, building or facility.

(90e) "Experimental plumbing system" has the same meaning as experimental system as specified in sub. (91).

(90m) "Exam sink" means a plumbing fixture used for hand washing in health care and related facilities.

Note: An exam sink may also be referred to as a treatment sink.

(91) "Experimental system" means a type of plumbing system from which valid and reliable data are being sought to demonstrate compliance with the intent of chs. SPS 382 to 384.

(92) "Failing private onsite wastewater treatment system" has the meaning specified under s. 145.245 (4), Stats.

Note: Section 145.245 (4) reads:
"Failing private sewage system" means a private sewage system which causes or results in any of the following conditions:
(a) The discharge of sewage into surface water or groundwater.
(b) The introduction of sewage into zones of saturation which adversely affects the operation of a private sewage system.
(c) The discharge of sewage to a drain tile or into zones of bedrock.
(d) The discharge of sewage to the surface of the ground.
(e) The failure to accept sewage discharges and backup of sewage into the structure served by the private sewage system.

(93) "Farm" means a parcel of 35 or more acres of contiguous land that is devoted primarily to agricultural use, as defined under s. 91.01 (2), Stats.

Note: Section 91.01 (2), Stats., reads:
(a) Any of the following activities conducted for the purpose of producing an income or livelihood:
1. Crop or forage production.
2. Keeping livestock.
3. Beekeeping.
4. Nursery, sod, or Christmas tree production.
4m. Floriculture.
5. Aquaculture.
6. Fur farming.
7. Forest management.
8. Enrolling land in a federal agricultural commodity payment program or a federal or state agricultural land conservation payment program.
(b) Any other use that the department, by rule, identifies as an agricultural use.

(94) "Faucet" means a valve end of a water pipe by means of which water can be drawn from or held within the pipe.

(95) "Final effluent" means the effluent from the last POWTS treatment component.

(96) "Fixture drain" means the drain from a fixture to a junction with another drain pipe.

(97) "Fixture supply" means that portion of a water distribution system serving one plumbing fixture, appliance or piece of equipment.

(98) "Fixture supply connector" means that portion of water supply piping which connects a plumbing fixture, appliance or a piece of equipment to the water distribution system.

(99) "Fixture unit, drainage" or "dfu" means a measure of the probable discharge into the drain system by various types of plumbing fixtures. The drainage fixture unit value for a particular fixture depends on its volume rate of drainage discharge, on the time duration of a single drainage operation, and on the average time between successive operations.

(100) "Fixture unit, supply" or "sfu" means a measure of the probable hydraulic demand on the water supply by various types of plumbing fixtures.

Note: The supply fixture unit value for a particular fixture depends on its volume rate of supply, on the time duration of a single supply operation, and on the average time between successive operations.

(101) "Floodfringe" has the meaning specified under s. NR 116.03 (14).

Note: Section NR 116.03 (14) reads: "Floodfringe" means that portion of a floodplain which is outside of the floodway, which is covered by flood water during the regional flood. The term "floodfringe" is generally associated with standing water rather than flowing water.

(102) "Flood level rim" means the edge of the receptacle from which water overflows.

(103) "Floodplain" has the meaning specified under s. NR 116.03 (16).

Note: Section NR 116.03 (16) reads:
"Floodplain" means that land which has been or may be covered by flood water during the regional flood. The floodplain includes the floodway, floodfringe, shallow depth flooding, flood storage and coastal floodplain areas.

(104) "Floodway" has the meaning specified under s. NR 116.03 (22).

Note: Section NR 116.03 (22) reads:
"Floodway" means the channel of a river or stream, and those portions of the floodplain adjoining the channel required to carry the regional flood discharge.

(105) "Floor sink" means a receptor for the discharge from indirect or local waste piping installed with its flood level rim even with the surrounding floor.

(106) "Flow" means the volumetric measure of a liquid stream in a specified time.

(107) "Flushometer valve" means a device which discharges a predetermined quantity of water to fixtures for flushing purposes and is closed by direct water pressure.

(108) "Flush valve" means a device located at the bottom of a tank for flushing water closets and similar fixtures.

(108m) "Foundation drain" means a subsoil drain that serves the area of the foundation of a building.

(108s) "Freeze resistant sanitary yard hydrant" means a type of device serving as a hose bibb that has design features that minimize the risk of freezing, prevent groundwater contamination and provide backflow protection. The term "freeze resistant sanitary yard hydrant with backflow protection" has the same meaning as freeze resistant sanitary yard hydrant.

(109) "Garage, private" means a building or part of a building used for the storage of vehicles or other purposes, by a family or less than 3 persons not of the same family and which is not available for public use.

(110) "Garage, public" means a building or part of a building which accommodates or houses self−propelled land, air or water vehicles for 3 or more persons not of the same family.

(111) "Governmental unit" has the meaning specified under s. 145.01 (5), Stats.

Note: Section 145.01 (5), Stats., reads:
"Governmental unit responsible for the regulation of private sewage systems" or "governmental unit", unless otherwise qualified, means the county, except that in a county with a population of 500,000 or more these terms mean the city, village or town where the private sewage system is located.

(112) "Graywater" means wastewater contaminated by waste materials, exclusive of urine, feces or industrial waste, deposited into plumbing drain systems.

(113) "Grease interceptor" means a receptacle designed to intercept and retain or remove grease or fatty substances.

(114) "Groundwater" has the meaning specified under s. 160.01 (4), Stats.

Note: Section 160.01 (4), Stats., reads:

"Groundwater" means any of the waters of the state, as defined under s. 281.01 (18), occurring in a saturated subsurface geological formation of rock or soil.

(115) "Hand−held shower" means a hose and a hand−held discharge piece such as a shower head or spray connecting to a fixture fitting.

(116) "Health care and related facility" means a hospital, nursing home, community−based residential facility, county home, infirmary, inpatient mental health center, inpatient hospice, ambulatory surgery center, adult daycare center, end stage renal facility, facility for the developmentally disabled, institute for mental disease, urgent care center, clinic or medical office, residential care center for children and youth or school of medicine, surgery or dentistry.

(117) "Health care plumbing appliance" means a plumbing appliance, the function of which is unique to health care activities.

(118) "High groundwater" means zones of soil saturation which include perched water tables, shallow regional groundwater tables or aquifers, or zones that are seasonally, periodically or permanently saturated.

(119) "High groundwater elevation" means the higher of either the elevation to which the soil is saturated when observed as a free water surface, or the elevation to which the soil has been seasonally or periodically saturated as indicated by the highest elevation of redoximorphic features in the soil profile.

(120) "High hazard" means a situation where the water supply system could be contaminated with a toxic substance or solution so as to make the water unsuitable for the designated use.

(121) "Holding tank" means a watertight receptacle for the collection and holding of wastewater.

(122) "Horizontal pipe" means any pipe or fitting which makes an angle of less than 45° with the horizontal.

(123) "Horizontal reference point" means a stationary, identifiable point to which horizontal dimensions can be related.

(124) "Hose connection backflow preventer" means a type of cross connection control device which consists of 2 independent checks, force−loaded or biased to a closed position, with an atmospheric vent located between the 2 check valves, which is force−loaded or biased to an open position, and a means for attaching a hose.

(125) "Hose connection vacuum breaker" means a type of cross connection control device which consists of a check valve member force−loaded or biased to a closed position and an atmospheric vent valve or means force−loaded or biased to an open position when the device is not under pressure.

(126) "Hot water" means water at a temperature of 110° F. or more.

(127) "Hot water storage tank" means a tank used to store water that is heated indirectly by a circulating water heater or by steam or hot water circulating through coils or by other heat exchange methods internal or external to the tank.

(128) "Human health hazard" has the meaning specified under s. 254.01 (2), Stats.

Note: Section 254.01 (2), Stats., reads:

"Human health hazard" means a substance, activity or condition that is known to have the potential to cause acute or chronic illness, to endanger life, to generate or spread infectious diseases, or otherwise injuriously to affect the health of the public.

(129) "Hydrostatic test" means a test performed on a plumbing system or portion thereof in which the system is filled with a liquid, normally water, and raised to a designated pressure.

(130) "Indian lands" means lands owned by the United States and held for the use or benefit of Indian tribes or bands or individual Indians, and lands within the boundaries of a federally recognized reservation that are owned by Indian tribes or bands or individual Indians.

(131) "Indirect waste piping" means drain piping which does not connect directly with the drain system, but which discharges into the drain system by means of an air break or air gap into a receptor.

(132) "Individual vent" means a pipe installed to vent a fixture trap.

(133) "Industrial wastewater" means the liquid wastes that result from industrial processes.

(133s) "Infiltration component" means any device or method that is intended to promote the assimilation of water into in situ soil.

(134) "Infiltrative surface" means the plane within a treatment or dispersal component at which effluent is applied to in situ soil or engineered soil.

(135) "In situ soil" means soil naturally formed or deposited in its present location or position and includes soil material that has been plowed using normal tillage implements and depositional material resulting from erosion or flooding.

(136) "Interceptor" or "separator" means a device designed and installed so as to separate and retain deleterious, hazardous or undesirable matter from wastes flowing through it.

(136s) "Irrigation" means the application of water to the root zone of plants or plantings.

(137) "Laboratory faucet backflow preventer" means a type of cross connection control device which consists of 2 independently acting check valves force−loaded or biased to a closed position and, between the check valves, a means for automatically venting to atmosphere which is force−loaded or biased to an open position.

(138) "Laboratory plumbing appliance" means a plumbing appliance, the function of which is unique to scientific experimentation or research activities.

(139) "Leaching chamber" means a product designed to support soil and create a cavity for the temporary storage of effluent and to provide an infiltrative surface for the distribution cell POWTS dispersal or treatment component.

(140) "Leader" means a pipe or channel outside a building which conveys storm water from the roof or gutter drains to a storm drain, storm sewer or to grade.

(141) "Lead−free" mean a chemical composition equal to or less than 0.2% of lead.

(142) "Linear loading rate" means the amount of effluent applied daily along the landscape contour expressed in gallons per day per linear foot along a site contour.

(143) "Load factor" means the percentage of the total connected fixture unit flow rate which is likely to occur at any point in a drain system.

(144) "Local station" means a National Weather Service (NWS) precipitation station or other station accepted by the department as collecting precipitation data in accordance with NWS methods.

(145) "Local waste piping" means a portion of drain piping which receives the wastes discharged from indirect waste piping and which discharges those wastes by means of an air break or air gap into a receptor.

(146) "Local vent" means a pipe connecting to a fixture and extending to outside air through which vapor or foul air is removed from the fixture.

(147) "Low hazard" means a situation where the water supply system could be contaminated with a nontoxic substance or solution so as to make the water unsuitable for the designated use.

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(148) "Main" means the principal pipe artery to which branches may be connected.

(149) "Manhole" means an opening constructed to permit access by a person to a sewer or any underground portion of a plumbing system.

(150) "Manufactured dwelling" has the meaning specified under s. SPS 320.07 (52) (a).

Note: Section SPS 320.07 (52) (a) was repealed.

(151) "Manufactured home" has the meaning specified under s. 101.91 (2), Stats.

Note: Section 101.91 (2), Stats., reads: "Manufactured home" means any of the following:

(am) A structure that is designed to be used as a dwelling with or without a permanent foundation and that is certified by the federal department of housing and urban development as complying with the standards established under 42 USC 5401 to 5425.

(c). A mobile home, unless a mobile home is specifically excluded under the applicable statute.

(152) "Manufactured home drain connector" means the pipe that joins the drain piping for a manufactured home to the building sewer.

(153) "Manufactured home community" has the meaning specified under s. 101.91 (5m), Stats.

Note: Section 101.91 (5m), Stats., reads: "Manufactured home community" means any plot or plots of ground upon which 3 or more manufactured homes that are occupied for dwelling or sleeping purposes are located. "Manufactured home community" does not include a farm where the occupants of the manufactured homes are the father, mother, son, daughter, brother or sister of the farm owner or operator or where the occupants of the manufactured homes work on the farm.

(154) "Mechanical joint" means a connection between pipes, fittings or pipes and fittings by means of a device, coupling, fitting or adapter where compression is applied around the center line of the pieces being joined, but which is not caulked, threaded, soldered, solvent cemented, brazed or welded.

(154m) "Mixed wastewater" means a combination of domestic and non−domestic wastewater.

(155) "Multiple dwelling" means a building containing more than 2 dwelling units.

(156) "Multipurpose piping system" means a water distribution system conveying water to plumbing fixtures and appliances and automatic fire sprinklers with the intention of serving both domestic and fire protection needs.

(157) "Municipality" means any city, village, town or county in this state.

(158) "Munsell soil color" means a color classification that specifies the relative degrees of the color variables in terms of hue, value and chroma.

(159) "Navigable waters" has the meaning specified under s. NR 115.03 (5).

Note: Section NR 115.03 (5) reads:

"Navigable waters" means Lake Superior, Lake Michigan, all natural inland lakes within Wisconsin and all streams, ponds, sloughs, flowages and other waters within the territorial limits of this state, including the Wisconsin portion of boundary waters, which are navigable under the laws of this state. Under s. 281.31 (2) (d), Stats., notwithstanding any other provision of law or administrative rule promulgated thereunder, shoreland ordinances required under s. 59.971, Stats., and this chapter do not apply to lands adjacent to farm drainage ditches if:

(a) Such lands are not adjacent to a natural navigable stream or river;

(b) Those parts of such drainage ditches adjacent to such lands were nonnavigable streams before ditching or had no previous stream history; and

(c) Such lands are maintained in nonstructural agricultural use.

(160) "Negative pressure" means a pressure less than atmospheric.

(160e) "Noncontinuous pressure" means a pressure greater than atmospheric and exerted for a period of no more than 12 continuous hours.

(160m) "Non−domestic wastewater" means any wastewater that is not domestic wastewater or storm water.

(161) "Nonpotable water" means water not safe for drinking, personal or culinary use.

(162) "Nonpublic" means, in the classification of plumbing fixtures, those fixtures in residences, apartments, living units of hotels and motels, and other places where the fixtures are intended for the use by a family or an individual to the exclusion of all others.

(163) "Nontoxic" means a substance in the diluted form that meets one of the following requirements:

(a) Is listed by the National Sanitation Foundation (NSF) as meeting the NSF evaluation criteria for nonfood compounds.

(b) Is acceptable to the United States Food and Drug Administration (FDA) Title 21 section 175.300 of the Federal Regulation on Food Additives.

(c) Is acceptable for contact with potable water or is deemed non−toxic by a third party certification that is acceptable to the department.

(d) Is deemed non−toxic by the department.

(163e) "Nursing home" has the meaning specified under s. 50.01 (3), Stats.

Note: Section 50.01 (3), Stats., reads:

"Nursing home" means a place where 5 or more persons who are not related to the operator or administrator reside, receive care or treatment and, because of their mental or physical condition require access to 24−hour nursing services, including limited nursing care, intermediate level nursing care and skilled nursing services. "Nursing home" does not include any of the following:

(c) A convent or facility owned or operated exclusively by and for members of a religious order that provides reception and care or treatment of an individual.

(d) A hospice, as defined in s. 50.90 (1), Stats., that directly provides inpatient care.

(e) A residential care apartment complex.

(163s) "Occasional occupancy" means occupying a building that is served by a POWTS for less than 120 calendar days per year.

(164) "Occupancy" means the purpose for which a building, structure, equipment, materials, or premises, or part thereof, is used or intended to be used.

(165) "Oil interceptor" means a device designed to intercept and retain oil, lubricating grease or other similar materials.

(166) "Offset" means a combination of fittings or bends that makes two changes in direction bringing one section of the pipe out of line but into a line parallel with the other section.

(167) "One or 2−family dwelling" means a building containing not more than 2 dwelling units.

(168) "Open air" means outside the building.

(168m) "Open bodies of water" means those portions of Lake Michigan and Lake Superior within the boundaries of Wisconsin, all lakes, bays, rivers, streams, springs, ponds, wells, impounding reservoirs, marshes, watercourses, drainage systems and other surface water, natural or artificial, public or private within the state or under its jurisdiction.

(169) "Ordinary high−water mark" has the meaning specified under s. NR 115.03 (6).

Note: Section NR 115.03 (6), reads:

"Ordinary high−water mark" means the point on the bank or shore up to which the presence and action of surface water is so continuous as to leave a distinctive mark such as by erosion, destruction or prevention of terrestrial vegetation, predominance of aquatic vegetation, or other easily recognized characteristic. Where the bank or shore at any particular place is of such character that it is difficult or impossible to ascertain where the point of ordinary high−water mark is, recourse may be had to the opposite bank of a stream or to other places on the shore of a lake or flowage to determine whether a given stage of water is above or below the ordinary high−water mark.

(170) "Participating governmental unit" means a governmental unit which applies to the department for financial assistance under ss. SPS 387.04 and 387.05, and which meets the conditions specified under s. 145.245 (9), Stats.

(170e) "Patient area plumbing fixture" means a plumbing fixture that is accessible to patients in a health care facility and is intended to be used for culinary, hygienic or domestic purposes.

(171) "Peak flow" means the largest anticipated recurrent wastewater discharge to a private onsite wastewater treatment system.

(171e) "Peak flow, stormwater" means the largest anticipated flow from a given storm event.

(172) "Pipe applied atmospheric type vacuum breaker" means a type of cross connection control device where the flow

of water into the device causes a float to close an air inlet port and when the flow of water stops the float falls and forms a check valve against back siphonage and at the same time opens the air inlet port to allow air to enter and satisfy the vacuum.

(173) "Pit privy" means an enclosed nonportable toilet into which nonwater−carried human wastes are deposited to a subsurface storage chamber that is not watertight.

(174) "Pitch" means the gradient or slope of a line of pipe in reference to a horizontal plane.

(175) "Place of employment" has the meaning specified under s. 101.01 (11), Stats.

Note: Section 101.01 (11), Stats., reads:

"Place of employment" includes every place, whether indoors or out or underground and the premises appurtenant thereto where either temporarily or permanently any industry, trade or business is carried on, or where any process or operation, directly or indirectly related to any industry, trade or business, is carried on, and where any person is, directly or indirectly, employed by another for direct or indirect gain or profit, but does not include any place where persons are employed in private domestic service which does not involve the use of mechanical power or in farming. "Farming" includes those activities specified in s. 102.04 (3), and also includes the transportation of farm products, supplies or equipment directly to the farm by the operator of said farm or employees for the use thereon, if such activities are directly or indirectly for the purpose of producing commodities for market, or as an accessory to such production. When used with relation to building codes, "place of employment" does not include an adult family home, as defined in s. 50.01 (1), or, except for the purposes of s. 101.11, a previously constructed building used as a community−based residential facility, as defined in s. 50.01 (1g), which serves 20 or fewer unrelated residents.

(176) "Plumbing" has the meaning specified under s. 145.01 (10), Stats.

Note: Section 145.01 (10), Stats., reads: "Plumbing" means:

(a) 1. All piping, fixtures, appliances, equipment, devices, and appurtenances in connection with water supply systems, water distribution systems, wastewater drainage systems, reclaimed water systems, and stormwater use systems, including hot water storage tanks, water treatment devices, and water heaters connected with these systems and also includes the installation thereof.

2. The construction, connection, installation, service, or repair of any drain or wastewater piping system that connects to the mains or other terminal within the bounds of, or beneath an area subject to easement for highway purposes, including private sewage systems and stormwater treatment and dispersal systems, and the alteration of any such systems, drains or wastewater piping.

3. The construction, connection, installation, service, or repair of water service piping that connects to the main or other water utility service terminal within the bounds of, or beneath an area subject to easement for highway purposes and its connections.

4. The water pressure system other than municipal systems as provided in ch. 281.

5. A plumbing and drainage system so designed and vent piping so installed as to keep the air within the system in free circulation and movement; to prevent with a margin of safety unequal air pressures of such force as might blow, siphon or affect trap seals, or retard the discharge from plumbing fixtures, or permit sewer air to escape into the building; to prohibit cross−connection, contamination or pollution of the water supply and distribution systems, and to provide an adequate supply of water to properly serve, cleanse and operate all fixtures, equipment, appurtenances and appliances served by the plumbing system.

(br) "Plumbing" does not include any of the following:

1. A rainwater gutter or downspout down to the point that it discharges into a plumbing system, a subsoil drain, or a foundation drain.

2g. A process water reuse system if the process water reuse system is not connected to any plumbing fixture or appliance.

2m. A stormwater culvert under a roadway or walkway that is placed there only to equalize the water level from one end of the culvert to the other end.

3. The practical installation of process piping within a sewage disposal plant.

(177) "Plumbing appliance" means any one of a special class of plumbing devices which is intended to perform a special function. The operation or control of the appliance may be dependent upon one or more energized components, such as motors, controls, heating elements, or pressure or temperature sensing elements. The devices may be manually adjusted or controlled by the user or operator, or may operate automatically through one or more of the following actions: a time cycle, a temperature range, a pressure range, or a measured volume or weight.

(178) "Plumbing fixture" means a receptacle or device which meets at least one of the following:

(a) Is either permanently or temporarily connected to the water supply system of the premises, and demands a supply of water from the system;

(b) Discharges wastewater or waste materials either directly or indirectly to the drain system of the premises.

(c) Requires both a water supply connection and a discharge to the drain system of the premises.

(179) "Plumbing system" includes the water supply system, the drain system, the vent system, plumbing fixtures, plumbing appliances and plumbing appurtenances that serve a building, structure or premises.

(180) "Point of standards application" has the meaning specified under s. 160.01 (5), Stats.

Note: Section 160.01 (5) Stats., reads:

"Point of standards application" means the specific location, depth or distance from a facility, activity or practice at which the concentration of a substance in groundwater is measured for purposes of determining whether a preventive action limit or an enforcement standard has been attained or exceeded.

(181) "Potable water" means water that is both:

(a) Safe for drinking, personal or culinary use.

(b) Free from impurities present in amounts sufficient to cause disease or harmful physiological effects.

(182) "POWTS" means a private onsite wastewater treatment system.

(183) "POWTS component" means any subsystem, subassembly or other system designed for use in or as part of a private onsite wastewater treatment system which may include treatment, dispersal or holding and related piping.

(184) "POWTS dispersal component" means a device or method that is intended to promote the assimilation of treated wastewater by the environment.

(185) "POWTS holding component" means any receptacle intended to collect wastewater for a period of time, including holding and dosing tanks.

(186) "POWTS treatment component" means a device or method that is intended to reduce the contaminant load of wastewater.

(186s) "Pre−development" means the condition of the topography of vegetation, including that resulting from human activities that existed prior to land disturbance for construction.

(187) "Prefabricated plumbing" means concealed drain piping, vent piping or water supply or a combination of these types of piping, contained in a modular building component, which will not be visible for inspection when delivered to the final site of installation.

(187e) "Prefabricated sump and pump system" means a simplex or duplex pump and sump designed as a combined unit.

(188) "Pressure relief valve" means a pressure actuated valve held closed by a spring or other means and designed to automatically relieve pressure at a designated pressure.

(189) "Pressure vacuum breaker assembly" means a type of cross connection control assembly which consists of an independently operating internally loaded check valve and an independently operating loaded air inlet located on the discharge side of the check valve, a tightly closing shut−off valve located at each end of the assembly, and test cocks. The term "pressure vacuum breaker" has the same meaning as pressure vacuum breaker assembly.

(190) "Pressurized flushing device" means a device that uses the water supply to create a pressurized discharge to flush a fixture exclusive of gravity type flushing systems.

(191) "Preventive action limit" or "PAL" has the meaning as specified under s. 160.01 (6), Stats.

Note: Section 160.01 (6), Stats., reads:

"Prevention action limits" means a numerical value expressing the concentration of a substance in groundwater which is adopted under s. 160.15, Stats.

(192) "Principal residence" means a residence that is occupied at least 51% of the year by the owner. Principal residence includes a residence owned by a trust or estate of an individual, if the residence is occupied at least 51% of the year by a person who has an ownership interest in the residence as a beneficiary of the trust or estate.

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(193) "Private interceptor main sewer" means a sewer serving 2 or more buildings and not part of the municipal sewer system.

(194) "Private onsite wastewater treatment system" has the meaning given for 'private sewage system' under s. 145.01 (12), Stats.

Note: Section 145.01 (12), Stats., reads:

"Private sewage system" means a sewage treatment and disposal system serving a single structure with a septic tank and soil absorption field located on the same parcel as the structure. This term also means an alternative sewage system approved by the department including a substitute for the septic tank or soil absorption field, a holding tank, a system serving more than one structure or a system located on a different parcel than the structure. A private sewage system may be owned by the property owner or by a special purpose district.

(195) "Private water main" means a water main serving 2 or more buildings and not part of the municipal water system.

(196) "Public" means, in the classification of plumbing fixtures, those fixtures which are available for use by the public or employees.

(197) "Public building" has the meaning specified under s. 101.01 (12), Stats.

Note: Section 101.01 (12), Stats., reads:

"Public building" means any structure, including exterior parts of such building, such as a porch, exterior platform or steps providing means of ingress or egress, used in whole or in part as a place of resort, assemblage, lodging, trade, traffic, occupancy, or use by the public or by 3 or more tenants. When used in relation to building codes, "public building" does not include a previously constructed building used as a community−based residential facility as defined in s. 50.01 (1g) which serves 20 or fewer unrelated residents or an adult family home, as defined in s. 50.01 (1).

(198) "Public sewer" means a sewer owned and controlled by a public authority.

(199) "Public water main" means a water supply pipe for public use owned and controlled by a public authority.

(200) "Quick closing valve" means a valve or faucet that closes automatically when released manually or controlled by mechanical means for fast action closing.

(201) "Receptor" means a fixture or device that receives the discharge from indirect or local waste piping.

(202) "Redoximorphic feature" means a feature formed in the soil matrix by the processes of reduction, translocation and oxidation of iron and manganese compounds in seasonally saturated soil.

(203) "Reduced pressure detector fire protection backflow prevention assembly" means a type of reduced pressure principle type backflow preventer serving a fire protection system and which includes a parallel flow meter to indicate leakage or unauthorized use of water downstream of the assembly.

(203m) "Reduced pressure fire protection principle backflow preventer" means an assembly serving a fire protection system and consisting of 2 independently−acting check valves, internally force loaded to a normally closed position, and separated by an intermediate chamber or zone in which there is a hydraulically operated relief means of venting to atmosphere, internally forced loaded to a normally open position. The term "reduced pressure principle backflow preventer for fire protection systems" has the same meaning as reduced pressure fire protection principle backflow preventer.

(204) "Reduced pressure principle backflow preventer" means a type of cross connection control assembly which contains 2 independently acting check valves, separated by an intermediate chamber or zone in which there is a hydraulically operated means for venting to atmosphere, and includes 2 shut−off valves and 4 test cocks.

(205) "Relief vent" means a vent which permits additional circulation of air in or between drain and vent systems.

(206) "Riser" means a water supply pipe that extends vertically one full story or more.

(207) "Roof drain" means a drain installed to receive water collecting on the surface of a roof and to discharge it into a conductor.

(208) "Roughing in" means the installation of all parts of the plumbing system which can be completed prior to the installation of fixtures including drain, water supply and vent piping and the necessary fixture supports.

(209) "Rowhouse" means a building which is not more than 3 stories in height and which contains only 3 or more attached, vertically separated, side−by−side or back−to−back dwelling units, with each dwelling unit served by an individual exterior exit within 6 feet of the exit discharge grade.

(210) "Safing" means a membrane or material installed beneath a fixture to prevent leakage from escaping to the floor, ceiling or walls.

(211) "Sand interceptor" means a receptacle designed to intercept and retain sand, grit, earth and other similar solids.

(212) "Sanitary sewer" means a pipe that carries wastewater consisting in part of domestic wastewater.

(212e) "Scrub sink" means a plumbing fixture used for hand and arm washing prior to surgery or other medical procedures.

Note: A scrub sink may also be referred to as a surgeon washup sink.

(213) "Scum" means the accumulated floating solids generated during the biological, physical or chemical treatment, coagulation or sedimentation of wastewater.

(214) "Secretary" means the secretary of the department of safety and professional services or designee.

(214m) "Service sink" means a fixture designed to be used for building or facility maintenance.

Note: A service sink may also be referred to as a mop sink, mop basin or janitor's sink.

(215) "Servicing" has the meaning as specified under s. NR 113.03 (57).

Note: Under s. NR 113.03 (57) "servicing" means removing the scum, liquid, sludge or other wastes from a private sewage system such as septic or holding tanks, dosing chambers, grease interceptors, seepage beds, seepage pits, seepage trenches, privies or portable restrooms and properly disposing or recycling of the contents as provided in this chapter.

(216) "Sewage" means wastewater containing fecal coliform bacteria exceeding 200 CFU, colony forming units, per 100 ml.

(217) "Sewage grinder pump" means a type of sewage pump which macerates wastewater consisting in part of sewage.

(218) "Sewage pump" means an automatic pump for the removal of wastewater from a sanitary sump.

(219) "Slip−joint" means a connection in which one pipe slips into another, the joint of which is made tight with a compression type fitting.

(220) "Sludge" means the accumulated solids generated during the biological, physical or chemical treatment, coagulation or sedimentation of water or wastewater.

(221) "Small commercial establishment" means a commercial establishment or business place with a maximum daily wastewater flow rate of less than 5,000 gallons per day as determined from the design criteria of the state plumbing code. Small commercial establishment includes a farm, including a residence on a farm, if the residence is occupied by a person who is an operator of the farm and if the maximum daily wastewater flow rate of the farm and the residence on the farm is less than 5,000 gallons−per−day as determined from the design criteria of the state plumbing code.

(222) "Soil" means the naturally occurring pedogenically developed and undeveloped regolith overlying bedrock.

(223) "Soil consistence" means the resistance of soil material to deformation or rupture as related to the degree of adhesion and cohesion of a soil mass.

(224) "Soil horizon" means a layer of soil material approximately parallel to the land surface and differing from adjacent genetically related layers in physical, chemical, or biologic characteristics.

(225) "Soil morphology" means the physical or structural characteristics of a soil profile particularly as related to the

arrangement of soil horizons based on color, texture, structure, consistence, and porosity.

(226) "Soil profile" means a vertical section of soil containing one or more soil horizons.

(227) "Soil profile evaluation" means a determination of soil properties or characteristics as they relate to wastewater or non-water−carried human waste treatment or dispersal.

(228) "Soil structure" means the combination or arrangement of individual soil particles into definable aggregates or peds, which are characterized and classified on the basis of size, shape, and degree of distinctness.

(229) "Soil texture" means the relative proportions of sand, silt and clay (soil separates) in a soil.

(230) "Spigot" means the end of a pipe which fits into a bell or hub.

(231) "Spill level" means the horizontal plane to which water will rise to overflow through channels or connections which are not directly connected to any drainage system, when water is flowing into a fixture, vessel or receptacle at the maximum rate of flow.

(231m) "Spill resistant vacuum breaker" means a cross connection control device consisting of one check valve force loaded closed, an air inlet force loaded open to atmosphere downstream of the check valve, 2 shutoff valves and 2 test cocks.

(232) "Spring line, pipe" means the line or place from which the arch of a pipe or conduit rises.

Note: See ch. SPS 382 Appendix for an illustration depicting the spring line of a pipe.

(233) "Stack" means a drain or vent pipe that extends vertically one full story or more.

(234) "Stack vent" means a vent extending from the highest horizontal drain connected to a stack.

(235) "Standpipe" means a drain pipe serving as a receptor for the discharge wastes from indirect or local waste piping.

(236) "State" means the state of Wisconsin, its agencies and institutions.

(237) "State plumbing code" means chs. SPS 381 to 387.

(238) "Sterilizer, boiling type" means a device of nonpressure type, used for boiling instruments, utensils, or other equipment for disinfecting.

(239) "Sterilizer, instrument" means a device for the sterilization of various instruments.

(240) "Sterilizer, pressure" means a pressure vessel fixture designed to use steam under pressure for sterilizing.

Note: A pressure sterilizer is also referred to as an autoclave.

(241) "Sterilizer, pressure instrument washer" means a pressure vessel designed to both wash and sterilize instruments during the operating cycle of the device.

(242) "Sterilizer, utensil" means a device for the sterilization of utensils.

(243) "Sterilizer vent" means a separate pipe or stack, indirectly connected to the drain system at the lower terminal, which receives the vapors from nonpressure sterilizers, or the exhaust vapors from pressure sterilizers, and conducts the vapors directly to the outer air.

(244) "Sterilizer, water" means a device for sterilizing water and storing sterile water.

(245) "Storm sewer" means a pipe, other than a pipe located inside a building, that carries any of the following: storm water, groundwater or clear water.

(246) "Storm water" means wastewater from a precipitation event.

(247) "Subsoil drain" means that part of a drain system that conveys groundwater to a point of discharge or dispersal.

(248) "Sump" means a tank or pit that receives wastewater that must be emptied by mechanical means.

(249) "Sump pump" means an automatic device located in a sump, pit or low point that is designed to elevate storm water, groundwater or clear water.

(250) "Sump vent" means a vent pipe from a nonpressurized sump.

(251) "Supports" means hangers, anchors and other devices for supporting and securing pipes or fixtures to structural members of a building.

(252) "Surface water" means those portions of Lake Michigan and Lake Superior within the boundaries of Wisconsin, all lakes, bays, rivers, streams, springs, ponds, impounding reservoirs, marshes, water courses, drainage systems, and other surface water, natural or artificial, public or private within the state or under its jurisdiction, except those waters which are entirely confined and completely retained upon the property of a facility.

(253) "Swimming pool" means a structure, basin, chamber or tank containing an artificial body of water for swimming, diving or recreational bathing.

(254) "Temperature and pressure relief valve" means a combination relief valve designed to function as both a temperature relief and pressure relief valve.

(255) "Temperature relief valve" means a temperature actuated valve designed to automatically discharge at a designated temperature.

(256) "Tempered water" means water ranging in temperature from 85°F. to less than 110°F.

(256e) "Ten−year, 24−hour storm" or "10−year, 24−hour storm" means a discrete rain storm event characterized by a specific duration, temporal distribution, rainfall intensity, return frequency and total depth of rainfall.

Note: The frequency, intensity and duration of rainfall varies considerably during a storm by geographic location. Precipitation frequency atlases, NOAA Atlas 2, have been prepared by the National Oceanic and Atmospheric Administration (NOAA), National Weather Service. In chapter SPS 382, this value may be expressed as a specific "design storm". The calculated volume of rainfall, or stormwater, may be determined from this value and used to calculate peak discharge.

(257) "Total suspended solids" or "TSS" means solids in wastewater that can be removed readily by standard filtering procedures in a laboratory and reported as milligrams per liter (mg/L).

(259) "Trap" means a fitting, device or arrangement of piping so designed and constructed as to provide, when properly vented, a liquid seal which prevents emission of sewer gases without materially affecting the flow of wastewater through it.

(260) "Trap seal" means the vertical distance between the top of the trap weir and the top of the dip separating the inlet and outlet of the trap.

(261) "Trap seal primer, water supply fed" means a type of valve designed to supply water to the trap in order to provide and maintain the water seal of the trap.

(262) "Trap weir" means that part of a trap that forms a dam over which wastes must flow to enter the drain piping.

(263) "Turf sprinkler system" means a system of piping, appurtenances and devices installed underground to distribute water for lawn or other similar irrigation purposes.

(264) "Unsaturated soil" means soil in which the pore spaces contain water at less than atmospheric pressure, as well as air and other gases.

(265) "Vacuum" means any pressure less than that exerted by the atmosphere.

(265e) "Vacuum breaker tee" means an assembly of fittings designed to eliminate the possibility of back siphonage in a system by allowing air to enter through a tee fitting.

(266) "Vacuum relief valve" means a device that admits air into the water distribution system to prevent excessive vacuum in a water storage tank or heater.

(267) "Vent" means a part of the plumbing system used to equalize pressures and ventilate the system.

(268) "Vent header" means a branch vent which connects 2 or more stack vents or vent stacks or both and extends to the outside air.

(269) "Vent stack" means a vertical vent pipe that provides air for a drain stack of 5 or more branch intervals.

(270) "Vent system" means a pipe or pipes installed to provide a flow of air to or from a drain system, or to provide a circulation of air within the system to protect trap seals from siphonage and back pressure.

(271) "Vertical pipe" means any pipe or fitting which makes an angle of 45° or less with the vertical.

(272) "Wall hydrant, freeze resistant automatic draining type vacuum breaker" means a type of device which is designed and constructed with anti−siphon and back pressure preventive capabilities and with means for automatic post shut−off draining to prevent freezing.

(273) "Wall mounted water closet" means a water closet attached to a wall in such a way that it does not touch the floor.

(273e) "Washer sanitizer" means a plumbing appliance used for washing and disinfecting equipment.

(274) "Waste" means the discharge from any fixture, appliance, area or appurtenance.

(275) "Waste sink" means a receptor for the discharge from indirect or local waste piping installed with its flood level rim above the surrounding floor.

(276) "Wastewater" means clear water, storm water, domestic wastewater, industrial wastewater, sewage or any combination of these.

(277) "Wastewater, treated" means the effluent conveyed through one or more POWTS treatment components to a POWTS dispersal component.

(277e) "Wastewater treatment device" means a device or method that is intended to beneficially alter the characteristics of wastewater.

(278) "Water closet" means a water−flushed plumbing fixture designed to receive human excrement directly from the user of the fixture.

(279) "Water conditioner" means an appliance, appurtenance or device used for the purpose of ion exchange, demineralizing water or other methods of water treatment.

(280) "Water distribution system" means that portion of a water supply system from the building control valve to the connection of a fixture supply connector, plumbing fixture, plumbing appliance, water−using equipment or other piping systems to be served.

(281) "Water heater" means any heating device with piping connections to the water supply system that is intended to supply hot water for domestic or commercial purposes other than space heating.

(282) "Water service" means that portion of a water supply system from the water main or private water supply to the building control valve.

(283) "Waters of the state" has the meaning specified under s. 281.01 (18), Stats.

Note: Section 281.01 (18), Stats., reads:

"Waters of the state" means those portions of Lake Michigan and Lake Superior within the boundaries of Wisconsin, all lakes, bays, rivers, streams, springs, ponds, wells, impounding reservoirs, marshes, watercourses, drainage systems and other surface water or groundwater, natural or artificial, public or private within the state or under its jurisdiction.

(284) "Water supply system" means the piping of a private water main, water service and water distribution system, fixture supply connectors, fittings, valves, and appurtenances through which water is conveyed to points of usage such as plumbing fixtures, plumbing appliances, water using equipment or other piping systems to be served.

(285) "Water treatment device" means a device which:

(a) Renders inactive or removes microbiological, particulate, inorganic, organic or radioactive contaminants from water which passes through the device or the water supply system downstream of the device; or

(b) Injects into the water supply system gaseous, liquid or solid additives other than water, to render inactive microbiological, particulate, inorganic, organic or radioactive contaminants.

(286) "Wetland" has the meaning given in s. 23.32 (1), Stats.

(287) "Wetland, constructed" means a man−made design complex of saturated substrates, emergent and submergent vegetation, and water that simulate natural wetlands for human use and benefits.

(288) "Wet vent" means that portion of a vent pipe that receives the discharge from other fixtures.

(288e) "Whirlpool" has the meaning as specified under s. SPS 390.03 (23) (j).

Note: Section SPS 390.03 (23) (j) reads: "Whirlpool" means a relatively small public swimming pool that uses high temperature water (greater than 93ºF) and that may include a water agitation system. A whirlpool may also be referred to as a spa.

Note: A fill and dump bathtub is not a whirlpool.

(288m) "Whirlpool bath tub" means a plumbing appliance consisting of a bathtub fixture that is equipped and fitted with a circulation piping system designed to accept, circulate and discharge bathtub water upon each use.

(289) "Yoke vent" means a vent connected to a drain stack for the purpose of preventing pressure changes in the drain stack.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; cr. (7e), (17e), (60e), (67e), (67m), (82m), (90e), (163e), (170e), (199e), (209e), (209m), (252e), (288e) and (288m), am. (18), (20), (79), (80), (189), (203) and (204), r. and recr. (116), Register, December, 2000, No. 540, eff. 1−1−01; CR 01−139: am. (209) Register June 2002 No. 558, eff. 7−1−02; corrections in (152) and (154) made under s. 13.93 (2m) (b) 7., Stats., Register June 2002 No. 558; CR 02−002: am. (7e), (42), (44), (46), (56), (80), (84), (90e), (120), (134), (147), (178), (181), (193), (195), (210), (245), (246), (247), and (276), cr. (7m), (35m), (51m), (56e), (61m), (62m), (65m), (72e), (90m), (108m), (160m), (187e), (212e), (214m), (265e), (273e), and (277e), r. and recr. (249) Register April 2003 No. 568, eff. 5−1−03; CR 02−129: cr (2m) and (168m) Register January 2004 No. 577, eff. 2−1−04; CR 04−035: cr. (59m), (59s), (62s), (70m), (129s), (133s), (136s), (171e), (186s) and (256e), am. (234) and (269) Register November 2004 No. 587, eff. 12−1−04; CR 07−100: cr. (163s) Register September 2008 No. 633, eff. 10−1−08; correction in (288e) made under s. 13.92 (4) (b) 7., Stats., Register September 2008 No. 633; CR 08−055: am. (5), (79), (115), (120), (147), (156), (189), (204), (234), (269) and (288), r. (20), (67e), (67m), (199e), (209e), (209m), (252e) and (258), cr. (80m), (82e), (108s), (203m) and (231m), r. and recr. (80), (151) to (154), (163) and (203) Register February 2009 No. 638, eff. 3−1−09; corrections in (286) and (288e) made under s. 13.92 (4) (b) 7., Stats., and corrections to numbering of (80m), (108s) and (203m) made under s. 13.92 (4) (b) 1., Stats., Register February 2009 No. 638; CR 10−064: r. and recr. (35), am. (116), (166), renum. (160m) to be (160e), cr. (62e), (154m), (160m) Register December 2010 No. 660, eff. 1−1−11; **correction in (intro.), (7e), (69), (88), (91), (170), (214), (237), (288e) made under s. 13.92 (4) (b) 6., 7., Stats., Register December 2011 No. 672.**

SPS 381.20 Incorporation of standards by reference. (1) CONSENT. (a) Pursuant to s. 227.21 (2), Stats., the attorney general has consented to the incorporation by reference of the standards listed in sub. (3).

(b) The codes and standards that are referenced in this chapter, and any additional codes and standards that are subsequently referenced in those codes and standards, shall apply to the prescribed extent of each such reference, except as modified by this chapter.

Note: Copies of the adopted standards are on file in the offices of the department and the legislative reference bureau. Copies of the standards may be purchased through the respective organizations listed in Tables 381.20−1 to 381.20−13.

(2) ALTERNATE STANDARDS. (a) Alternate standards that are equivalent to or more stringent than the standards referenced in this code may [be] used in lieu of the referenced standards when approved by the department or if written approval is issued by the department in accordance with par. (b).

1. Upon receipt of a fee and a written request, the department may issue an approval for the use of the alternate standard.

2. The department shall review and make a determination on an application for approval within 40 business days of receipt of all forms, fees and documents required to complete the review.

Note: Review fees for standards under this paragraph are listed in ch. SPS 302.

(b) Determination of approval shall be based on an analysis of the alternate standard and the standard referenced in this code,

prepared by a qualified independent third party or the organization that published the standard contained in this code.

(c) The department may include specific conditions in issuing an approval, including an expiration date for the approval. Violations of the conditions under which an approval is issued shall constitute a violation of this code.

(d) If the department determines that the alternate standard is not equivalent to or more stringent than the referenced standard, the request for approval shall be denied in writing.

(e) The department may revoke an approval for any false statements or misrepresentations of facts on which the approval was based.

(f) The department may reexamine an approved alternate standard and issue a revised approval at any time.

(3) ADOPTION OF STANDARDS. The standards referenced in Tables 381.20−1 to 381.20−13 are hereby incorporated by reference into this chapter.

Note: The tables in this section provide a comprehensive listing of all of the standards adopted by reference in this code. For requirements or limitations in how these standards are to be applied, refer to the code section that requires compliance with the standard.

(4) DEPARTMENT AUTHORITY. A department interpretation of an adopted standard under this chapter shall supersede any differing interpretation by either a lower level jurisdiction or an issuer of the adopted standard.

Table 381.20−1

AHAM	**Association of Home Appliance Manufacturers** **20 North Wacker Drive** **Chicago, Illinois 60606** **Phone: 202−872−5955** **Web page: www.aham.org**
Standard Reference Number	**Title**
DW−1−2005	Household Electric Dishwashers

Table 381.20−2

ANSI	**American National Standards Institute, Inc.** **1430 Broadway** **New York, New York 10018** **Phone: 212−642−4900** **Web page: www.ansi.org**
Standard Reference Number	**Title**
1. Z21.22−99 (R 2004)	Relief Valves for Hot Water Supply Systems
2. Z21.22a−2000	Relief Valves for Hot Water Supply Systems (Addenda 2000)
3. Z21.22b−2001	Relief Valves for Hot Water Supply Systems (Addenda 2001)
4. Z124.1.2−2005	Plastic Bath Tub and Shower Units
5. Z124.3−2005	Plastic Lavatories
6. Z124.4−2006	Plastic Water Closet Bowls and Tanks
7. Z124.6−97	Plastic Sinks
8. Z124.9−2004	Plastic Urinal Fixtures

Table 381.20−3

ARI	**Air−Conditioning and Refrigeration Institute** **1815 North Fort Myer Drive** **Arlington, Virginia 22209** **Phone: 703−524−8800** **Web page: www.ari.org**
Standard Reference Number	**Title**
ARI−1010−2002	Self−Contained Mechanically−Refrigerated Drinking−Water Coolers

Table 381.20−3e

ASME	American Society of Mechanical Engineers 345 East 47th Street New York, New York 10017 Phone: 800−843−2763 Web page: www.infocentral@asme.org	
	Standard Reference Number	**Title**
1.	A112.1.2−2004	Air Gaps in Plumbing Systems (For Plumbing Fixtures and Water−Connected Receptors)
1e.	A112.1.3−00	Air−gap Fittings for Use with Plumbing Fixtures, Appliances, and Appurtenances
2.	A112.6.1M−97 (R 2002)	Floor−Affixed Supports for Off−the−Floor Plumbing Fixtures for Public Use
2a.	A112.6.3−2001 (R 2007)	Floor and Trench Drains
3.	A112.14.1−03 (R 2008)	Backwater Valves
4.	A112.18.1−2005	Plumbing Supply Fittings
5.	A112.19.1M−94 (R 2000)	Enameled Cast Iron Plumbing Fixtures
5m.	A112.19.1M−1994	Errata November 1994 to Enameled Cast Iron Plumbing Fixtures
6.	A112.19.1M−1994	Supplement 1–1998 to Enameled Cast Iron Plumbing Fixtures
7.	A112.19.1M−1994	Supplement 2–2000 to Enameled Cast Iron Plumbing Fixtures
8.	A112.19.2−2003	Vitreous China Plumbing Fixtures and Hydraulic Requirements for Water Closets and Urinals
9.	A112.19.3−2000 (R 2004)	Stainless Steel Plumbing Fixtures (Designed for Residential Use)
10.	A112.19.3−2002	Supplement 1−2002 to Stainless Steel Plumbing Fixtures (Designed for Residential Use)
11.	A112.19.4−94 (R 2004)	Porcelain Enameled Formed Steel Plumbing Fixtures
12.	A112.19.5−2005	Trim for Water−Closet Bowls, Tanks, and Urinals
13.	B1.20.1−83 (R 2006)	Pipe Threads, General Purpose (Inch)
14.	B16.1−2005	Gray Iron Pipe Flanges and Flanged Fittings (Classes 25, 125, and 250)
15.	B16.3−1998 (R 2006)	Malleable Iron Threaded Fittings (Classes 150 and 300)
16.	B16.4−2006	Gray Iron Threaded Fittings (Classes 125 and 250)
17.	B16.5−2003	Pipe Flanges and Flanged Fittings NPS 1/2 Through NPS 24 (and addenda)
18.	B16.9−2003	Factory−Made Wrought Buttwelding Fittings
19.	B16.11−2005	Forged Fittings, Socket–Welding and Threaded
20.	B16.12−1998 (R 2006)	Cast Iron Threaded Drainage Fittings
21.	B16.15−85 (R1994)	Cast Bronze Threaded Fittings, Classes 125 and 250
22.	B16.18−2001 (R 2005)	Cast Copper Alloy Solder Joint Pressure Fittings
23.	B16.22−2001 (R 2005)	Wrought Copper and Copper Alloy Solder Joint Pressure Fittings
24.	B16.23−2002 (R 2006)	Cast Copper Alloy Solder Joint Drainage Fittings: DWV
25.	B16.24−2001	Cast Copper Alloy Pipe Flanges and Flanged Fittings: Class 150, 300, 400, 600, 900, 1500 and 2500
26.	B16.26−2006	Cast Copper Alloy Fittings for Flared Copper Tubes
27.	B16.28−94	Wrought Steel Buttwelding Short Radius Elbows and Returns
28.	B16.29−2001	Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings — DWV
29.	B16.42−1998 (R 2006)	Ductile Iron Pipe Flanges and Flanged Fittings (Classes 150 and 300)
30.	B16.45−1998 (R 2006)	Cast Iron Fittings for Sovent® Drainage Systems
31.	B36.19M−2004	Stainless Steel Pipe

Table 381.20−4

ASSE		**American Society of Sanitary Engineering** **P.O. Box 9712** **Bay Village, Ohio 4414** **Phone: 440−835−3040** **Web page: www.asse−plumbing.org**
Standard Reference Number		**Title**
1.	1001−2002	Atmospheric Type Vacuum Breakers
2.	1002−1999	Anti−siphon Fill Valves (Ballcocks) for Gravity Water Closet Flush Tanks
3.	1003−2001	Water Pressure Reducing Valves
4.	1004−1990	Commercial Dishwashing Machines
5.	1006−1989	Residential Use (Household) Dishwashers
6.	1007−1992	Home Laundry Equipment
7.	1008−2006	Plumbing Aspects of Residential Food Waste Disposer Units
8.	1009−1990	Commercial Food Waste Grinder Units
9.	1010−2004	Water Hammer Arresters
10.	1011−2004	Hose Connection Vacuum Breakers
11.	1012−2002	Backflow Preventer with Intermediate Atmospheric Vent
12.	1013−2005	Reduced Pressure Principle Backflow Preventers and Reduced Pressure Fire Protection Principle Backflow Preventers
13.	1014−2005	Backflow Prevention Devices for Hand−Held Showers
14.	1015−2005	Double Check Backflow Prevention Assemblies and Double Check Fire Protection Backflow Prevention Assemblies
15.	1016−2005	Automatic Compensating Valves for Individual Showers and Tub/Shower Combinations
15m.	1017–2003	Temperature Actuated Mixing Valves for Hot Water Distribution Systems
16.	1018−2001	Trap Seal Primer Valves — Potable Water Supplied
17.	1019−2004	Vacuum Breaker Wall Hydrants, Freeze Resistant Automatic Draining Type
18.	1020−2004	Pressure Vacuum Breaker Assembly
18m.	1021–2001	Drain Air Gaps for Domestic Dishwasher Applications
19.	1022−2003	Backflow Preventer for Beverage Dispensing Equipment
20.	1023−1979	Hot Water Dispensers, Household Storage Type, Electrical
20m.	1035−2002	Laboratory Faucet Backflow Preventers
21.	1037−1990	Pressurized Flushing Devices (Flushometers) for Plumbing Fixtures
22.	1047−2005	Reduced Pressure Detector Fire Protection Backflow Prevention Assemblies
23.	1048−2005	Double Check Detector Fire Protection Backflow Prevention Assemblies
24.	1052−2004	Hose Connection Backflow Preventers
24e.	1053–2005	Dual Check Backflow Preventer Wall Hydrant Freeze Resistant Type
25.	1055−2009	Chemical Dispensing Systems
26.	1056−2001	Spill Resistant Vacuum Breakers
26e.	1066−1997	Individual Pressure Balancing In−Line Valves for Individual Fixture Fittings
27.	5013–2009[a]	Minimum Performance Requirements for Testing Reduced Pressure Principle Backflow Preventers (RP) and Reduced Pressure Principle Fire Protection Backflow Preventers (RPF)
28.	5015–2009[a]	Minimum Performance Requirements for Testing Double Check Backflow Prevention Assemblies (DC) and Double Check Fire Protection Backflow Prevention Assemblies (DCF)
29.	5020–2009[a]	Minimum Performance Requirements for Testing a Pressure Vacuum Breaker Assembly
30.	5047–2009[a]	Minimum Performance Requirements for Testing Reduced Pressure Detector Fire Protection Backflow Prevention Assemblies (RPDF)
31.	5048–2009[a]	Minimum Performance Requirements for Testing Double Check Detector Fire Protection Backflow Prevention Assemblies (DCDF)
32.	5056–2009[a]	Minimum Performance Requirements for Testing Spill Resistant Vacuum Breaker

[a] Standard is contained in the ASSE 5000 Series of standards.

The Wisconsin Administrative Code on this web site is current through the last published Wisconsin Register. See also Are the Codes on this Website Official?

Table 381.20−5

ASTM	ASTM International 100 Barr Harbor Drive West Conshohocken, Pennsylvania 19428−2959 Phone: (610) 832−9585 Web page: www:astm.org	
	Standard Reference Number	**Title**
1.	A53−02	Pipe, Steel, Black and Hot−Dipped, Zinc−Coated Welded and Seamless, Specification for
2.	A74−06	Cast Iron Soil Pipe and Fittings, Specification for
3.	A123/A123M−02	Zinc (Hot−Galvanized) Coatings on Products, Specification for
4.	A270−03a	Seamless and Welded Austenitic Stainless Steel Sanitary Tubing, Specification for
5.	A403/A403M−07	Wrought Austenitic Stainless Steel Piping Fittings, Specification for
6.	A450/A450M−04a	Carbon, Ferritic Alloy, and Austenitic Alloy Steel Tubes
7.	A888−07a	Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Pipe Applications, Specifications for
8.	B32−04	Solder Metal
9.	B42−02^{E1}	Pipe, Seamless Copper, Standard Sizes
10.	B43−98	Seamless Red Brass Pipe, Standard Sizes, Specification for
11.	B88−03	Seamless Copper Water Tube, Specification for
11m.	B88M−05	Seamless Copper Water Tube, (Metric) Specification for
12.	B152/B152M−06a	Copper Sheet, Strip, Plate, and Rolled Bar, Specification for
13.	B251/B251M−02^{E1}	Tube, Wrought Seamless Copper and Copper
14.	B302−02	Threadless Copper Pipe, Specification for
15.	B306−02	Copper Drainage Tube (DWV), Standard Specifications for
15m.	B828−02	Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings, Practice for
16.	C14−07	Nonreinforced Concrete Sewer, Storm Drain, and Culvert Pipe, Specification for
17.	C14M−07	Nonreinforced Concrete Sewer, Storm Drain, and Culvert Pipe, (Metric) Specification for
18.	C33−03	Concrete Aggregates, Specification for
19.	C76−07	Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe, Specification for
20.	C76M−07	Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe, (Metric) Specifications for
21.	C425−04	Compression Joints for Vitrified Clay Pipe and Fittings, Specification for
22.	C443−07	Specification for Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets
22e.	C443M−07	Specification for Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets (Metric)
22m.	C507/C507M−07	Reinforced Concrete Elliptical Culvert, Storm Drain and Sewer, (Metric) Specifications for
23.	C564−03a	Rubber Gaskets for Cast Iron Soil Pipe and Fittings, Specification for
24.	C700−07	Vitrified Clay Pipe, Extra Strength, Standard Strength, and Perforated, Specification for
24e.	C877/C877M−02^{E}	External Sealing Bands for Concrete Pipe, Manholes and Precast Box Sections, (Metric) Standard Specifications for
24h.	C923−07	Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals, Specification for
24m.	C990/C990M−06	Joints for Concrete Pipe, Manholes, Precast Box Sections Using Preformed Flexible Joint Sealants, Specifications for
24s.	C1306−05a	Hydrostatic Pressure Resistance of a Liquid−Applied Waterproofing Membrane, Standard Test Method for
25.	D1527−99 (R 2005)	Acrylonitrile−Butadiene−Styrene (ABS), Schedules 40 and 80
26.	D1785−06	Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80 and 120, Specification for
27.	D2104−03	Standard Specifications for Polyethylene (PE) Plastic Pipe, Schedule 40

Table 381.20−5 (Continued)

	ASTM	ASTM International 100 Barr Harbor Drive West Conshohocken, Pennsylvania 19428−2959 Phone: (610) 832−9585 Web page: www:astm.org
	Standard Reference Number	**Title**
28.	D2235−04	Standard Specifications for Solvent Cement for Acrylonitrile−Butadiene−Styrene (ABS) Plastic Pipe and Fittings
29.	D2239−03	Polyethylene (PE) Plastic Pipe (SIDR−PR) Based on Controlled Inside Diameter, Specification for
30.	D2241−05	Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe (SDR−Series)
31.	D2282−99 (R 2005)	Acrylonitrile−Butadiene−Styrene (ABS) Plastic Pipe (SDR−PR), Specification for
32.	D2321−05	Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity−Flow Applications, Practice for
33.	D2447−03	Polyethylene (PE) Plastic Pipe, Schedules 40 and 80, Based on Outside Diameter, Specification for
34.	D2464−06	Threaded Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80, Specification for
35.	D2466−06	Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40, Specification for
36.	D2467−06	Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80, Specification for
37.	D2468−96a	Acrylonitrile−Butadiene−Styrene (ABS), Plastic Pipe Fittings, Schedule 40, Specification for
38.	D2564−04^{E1}	Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Systems, Specification for
39.	D2609−02	Plastic Insert Fittings for Polyethylene (PE) Plastic Pipe, Specification for
40.	D2657−07	Heat Fusion Joining of Polyolefin Pipe and Fittings, Standard Practice of
41.	D2661−06	Acrylonitrile−Butadiene−Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe and Fittings, Specification for
43.	D2665−07	Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings, Specification for
46.	D2680−01	Acrylonitrile−Butadiene−Styrene (ABS) and Poly (Vinyl Chloride) (PVC) Composite Sewer Piping, Specification for
47.	D2683−04	Socket−Type Polyethylene Fittings for Outside Diameter−Controlled Polyethylene Pipe and Tubing, Specification for
48.	D2729−03	Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings, Specification for
49.	D2737−03	Polyethylene (PE) Plastic Tubing, Specification for
50.	D2751−05	Acrylonitrile−Butadiene−Styrene (ABS) Sewer Pipe and Fittings, Specification for
51.	D2774−04^{E1}	Underground Installation of Thermoplastic Pressure Piping, Standard Practice for
52.	D2846/D2846M−06	Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Hot− and Cold−Water Distribution Systems, Specification for
53.	D2852−95	Styrene−Rubber (SR) Plastic Drain Pipe and Fittings, Specification for
54.	D2855−96	Making Solvent−Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings, Practice for
55.	D3034−06	Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings, Specification for
56.	D3035−06	Polyethylene (PE) Plastic Pipe (SDR−PR) Based on Controlled Outside Diameter, Specification for
57.	D3138−04	Solvent Cements for Transition Joints Between Acrylonitrile−Butadiene−Styrene (ABS) and Poly(Vinyl Chloride) (PVC) Non−Pressure Piping Components, Specifications for
59.	D3140−90	Flaring Polyolefin Pipe and Tubing, Practice for
60.	D3212−96a (R 2003)	Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals, Specification for
61.	D3261−03	Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing, Specification for
62.	D3311−06a	Drain, Waste, and Vent (DWV) Plastic Fittings Patterns, Specification for
63.	D4068−01	Chlorinated Polyethylene (CPE) Sheeting for Concealed Water−Containment Membrane, Standard Test Method for

Table 381.20−5 (Continued)

ASTM		ASTM International 100 Barr Harbor Drive West Conshohocken, Pennsylvania 19428−2959 Phone: (610) 832−9585 Web page: www:astm.org
	Standard Reference Number	**Title**
64.	D4491−99a (R 2004)	Water Permeability of Geotextile by Permittivity, Standard Test Method for
65.	D4533−04	Trapezoid Tearing Strength of Geotextiles, Standard Test Method for
66.	D4632−91 (R 2003)	Grab Breaking Load and Elongation of Geotextiles, Standard Test Method for
67.	D4751−04	Determining the Apparent Opening Size of a Geotextile, Standard Test Method for
68.	D4833−00^{E1}	Index Puncture Resistance of Geotextile, Geomembranes, and Related Products, Standard Test Methods for
69.	F402−05	Safe Handling of Solvent Cements, Primers and Cleaners Used for Joining Thermoplastic Pipe and Fittings, Practice for
70.	F405−05	Corrugated Polyethylene (PE) Tubing and Fittings, Specification for
71.	F409−02	Thermoplastic Accessible and Replaceable Plastic Tube and Tubular Fittings, Specification for
72.	F437−06	Threaded Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80, Specification for
73.	F438−04	Socket−Type Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 40, Specification for
74.	F439−06	Socket−Type Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80, Specification for
75.	F441/F441M−02	Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80, Specification for
76.	F442/F442M−99 (R 2005)	Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe (SDR−PR), Specification for
77.	F477−07	Elastomeric Seals (Gaskets) for Joining Plastic Pipe, Specification for
78.	F492−95	Propylene and Polypropylene (PP) Plastic−Lined Ferrous Metal Pipe Fittings
79.	F493−04	Solvent Cements for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe and Fittings, Specification for
80.	F628−06^{E1}	Acrylonitrile−Butadiene−Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe with a Cellular Core, Specification for
81.	F656−02	Primers for Use in Solvent Cement Joints of Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings, Specification for
81e.	F679−06a	Poly (Vinyl Chloride) (PVC) Large−Diameter Plastic Gravity Sewer Pipe and Fittings
81m.	F789−95a	Type PS−46 Poly (Vinyl Chloride) (PVC) Plastic Gravity Flow Sewer Pipe and Fittings
81s.	F794−03	Poly (Vinyl Chloride) (PVC) Profile Gravity Sewer Pipe and Fittings Based on Controlled Inside Diameter
82.	F810−07	Smoothwall Polyethylene (PE) Pipe for Use in Drainage and Waste Disposal Absorption Fields, Specification for
84.	F876−06	Crosslinked Polyethylene (PEX) Tubing, Specification for
85.	F877−07	Crosslinked Polyethylene (PEX) Plastic Hot− and Cold−Water Distribution Systems, Specification for
86.	F891−04	Coextruded Poly (Vinyl Chloride) (PVC) Plastic Pipe With a Cellular Core, Specification for
87.	F949−06a	Poly (Vinyl Chloride) (PVC) Corrugated Sewer Pipe With a Smooth Interior and Fittings
88.	F1281−07	Crosslinked Polyethylene/Aluminum/Crosslinked Polyethylene (PEX−AL−PEX) Pressure Pipe
89.	F1282−06	Polyethylene/Aluminum/Polyethylene (PE−AL−PE) Composite Pressure Pipe
90.	F1336−07	Poly (Vinyl Chloride) (PVC) Gasketed Sewer Fittings
91.	F1807−07	Metal Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross−linked Polyethylene (PEX) Tubing
92.	F1866−07	Poly (Vinyl Chloride) (PVC) Plastic Schedule 40 Drainage and DWV Fabricated Fittings, Specifications for

Table 381.20−6

AWS	**American Welding Society** **550 N.W. LeJune Road** **Miami, Florida 33126** **Phone: 800−443−9353** **Web page: www.aws.org/w/a**
Standard Reference Number	**Title**
AWS.A5.8M 2004	Filler Metals for Brazing and Braze Welding, Specification for

Table 381.20−7

AWWA	**American Water Works Association** **Data Processing Department** **6666 West Quincy Avenue** **Denver, Colorado 80235** **Phone: 303−794−7711** **Web page: www.awwa.org**
Standard Reference Number	**Title**
1. C110−03	American National Standard for Ductile−Iron and Gray−Iron Fittings for Water
2. C111−07	American National Standard for Rubber−Gasket Joints for Ductile−Iron Pressure Pipe and Fittings
3. C115−05	American National Standard for Flanged Ductile−Iron Pipe with Ductile−Type Iron or Gray−Iron Pipe Threaded Flanges
4. C151−02	Ductile−Iron Pipe, Centrifugally Cast, for Water
5. C153−06	American National Standard for Ductile−Iron Compact Fittings, 3 in. through 16 in., for Water and Other Liquids
5c. C220−2007	Stainless–Steel Pipe, ½ in. (13mm) and Larger
5e. C651−05	Water Mains, Disinfecting
6. C700−02	Cold−Water Meters — Displacement Type with Bronze Main Case (w/ 1991 Addendum)
7. C701−07	Cold−Water Meters — Turbine Type for Customer Service
8. C702−01	Cold−Water Meters — Compound Type
9. C704−02	Cold−Water Meters — Propeller Type for Main Line Applications
10. C706−96 (R 05)	Cold−Water Meters, Direct−Reading, Remote−Registration Systems for
11. C707−05	Cold−Water Meters, Encoder−Type, Remote−Registration Systems for
12. C708−05	Cold−Water Meters — Multi−Jet Type
13. C710−02	Cold−Water Meters, Displacement Type — Plastic Main
14. C900−07	Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings 4−inch to 12−inch (100mm Through 300mm) for Water Transmission and Distribution
15. C901−02	Polyethylene (PE) Pressure Pipe and Tubing, $^{1}/_{2}$ in. (13mm) Through 3 in. (76mm) for Water Service
16. C906−07	Polyethylene Pressure Pipe and Fittings, 4 in. through 63 in., for Water Distribution

Table 381.20−7e

	CAN/CSA	**Canadian Standards Association** **178 Rexdale Boulevard** **Rexdale (Toronto), Ontario, Canada** **M9W 1R3** **Phone: 800−463−6727** **Web page: www.csa.ca**
	Standard Reference Number	**Title**
1.	B64.1.1–07	Atmospheric Vacuum Breakers
2.	B64.1.2–07	Pressure Vacuum Breakers
3.	B64.1.3–07	Spill Resistant Vacuum Breakers
4.	B64.2–07	Hose Connection Vacuum Breakers
5.	B64.2.2–07	Hose Connection Vacuum Breakers with Automatic Draining Feature
6.	B64.3–07	Dual Check Valve Backflow Preventers with Atmospheric Port
7.	B64.3.1–07	Dual Check Valve Backflow Preventers with Atmospheric Port for Carbonators
8.	B64.4–07	Reduced Pressure Principle Backflow Preventers
9.	B64.4.1–07	Reduced Pressure Principle Backflow Preventers for Fire Protection Systems
10.	B64.5–07	Double Check Valve Backflow Preventers
11.	B64.5.1–07	Double Check Valve Backflow Preventers for Fire Protection Systems
12.	B64.7–07	Laboratory Faucet Vacuum Breakers
13.	CSA B125.1–05	Plumbing Supply Fittings
14.	B125.3–05	Plumbing Fittings
14e.	B125.3–05	Plumbing Fittings – Update No. 1 November 2006
14m.	B125.3–05	Plumbing Fittings – Update No. 2 November 2007
15.	B137.9−98	Polyethylene / Aluminum / Polyethylene Composite Pressure Pipe Systems
16.	B137.10−98	Crosslinked Polyethylene /Aluminum / Crosslinked Polyethylene Composite Pressure Pipe Systems
17.	B181.1−06	Acrylonitrile−butadiene−styrene (ABS) drain, waste, and vent pipe and pipe fittings
18.	B181.2−06	Polyvinylchloride (PVC) and chlorinated polyvinylchloride (CPVC) drain, waste, and vent pipe and pipe fittings

Table 381.20−8

	CISPI	**Cast Iron Soil Pipe Institute** **5959 Shallowford Road, Suite 419** **Chattanooga, Tennessee 37421** **Phone: 423−892−0137** **Web page: www.cispi.org**
	Standard Reference Number	**Title**
1.	301−05	Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications, Standard Specification for
2.	310−04	Coupling for Use in Connection with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications, Specification for

Table 381.20−9

	FMRC	**Factory Mutual Research Corp.** **1151 Boston−Providence Turnpike** **Norwood, Massachusetts 02062** **Phone: 800−320−6808** **Web page: www.fmglobal.com**
	Standard Reference Number	**Title**
1680		Couplings used in Hubless Cast Iron Systems for Drain, Waste or Vent, Sewer, Rainwater or Storm Drain Systems Above and Below Ground, Industrial/Commercial and Residential, January 1989

Table 381.20−10

	NFPA	**National Fire Protection Association** **11 Tracy Drive** **Avon, MA 02322−9908** **Phone: 617−770−3000** **Web page: www.nfpa.org**
	Standard Reference Number	**Title**
1.	NFPA 13D−2007	Installation of Sprinkler Systems in One− and Two−Family Dwellings and Manufactured Homes, Standard for the
2.	NFPA 24−2007	Installation of Private Fire Service Mains and Their Appurtenances, Standard for the

Table 381.20−11

	NSF	**NSF *International*** **789 Dixboro Road** **P.O. Box 130140** **Ann Arbor, Michigan 48113−0140** **Phone: (800) 673−6275** **Web page: www.nsf.org**
	Standard Reference Number	**Title**
1.	Standard 14−2007	Plastic Piping System Components and Related Materials
2.	Standard 40−2005	Residential Wastewater Treatment Systems
3.	Standard 41−2005	Non−liquid Saturated Treatment Systems
3m.	Standard 41−2005 Addendum 1	Non−liquid Saturated Treatment Systems
4.	Standard 44−2004	Residential Cation Exchange Water Softeners
5.	Standard 51−2007	Food Equipment Materials
6.	Standard 61−2007	Drinking Water System Components Health Effects

Table 381.20−12

	STI	**Steel Tank Institute** **570 Oakwood Road** **Lake Zurich, Illinois 60047** **Phone: 617−770−3000** **Web page: www.steeltank.com**
	Standard Reference Number	**Title**
	STI−P_3	External Corrosion Protection of Underground Steel Storage Tanks, Specifications and Manual for, 1996 edition

Table 381.20−13

	UL	**Underwriters Laboratories Inc.** **333 Pfingsten Road** **Northbrook, Illinois 60062** **Phone: 847−272−8800** **Web page: www.ul.com**
	Standard Reference Number	**Title**
1.	Standard 58−1996	Steel Underground Tanks for Flammable and Combustible Liquids — Ninth Edition
2.	Standard 1746−2007	External Corrosion Protection Systems for Steel Underground Storage Tanks — Third Edition

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; r. (2), renum. (3) to be (2) and am., r. and recr. Table 81.20−2, cr. Tables 81.20−3e, 81.20−7e and 81.20−10m, am. Tables 81.20−4 to 81.20−8 and 81.20−11, r. Table 81.20−14, Register, December, 2000, No. 540, eff. 1−1−01; correction in (1) made under s. 13.93 (2m) (b) 7., Stats., Register, December, 2000, No. 540; CR 02−002: r. and recr. Register April 2003 No. 568, eff. 5−1−03; CR 02−129: am Table 81.20−8 Register January 2004 No. 577, eff. 2−1−04; CR 04−035: am. Table 81.20−4 and 81.20−10m Register November 2004 No. 587, eff. 12−1−04; CR 07−100: cr. (4) Register September 2008 No. 633, eff. 10−1−08; CR 08−055: am. (1), Tables 81.20−1 to 81.20−9 and Tables 81.20−11 to 81.20−13, r. Table 81.20−10, renum. Table 81.20−10m to be Table 81.20−10 and am. Register February 2009 No. 638, eff. 3−1−09; CR 10−064: am. Tables 81.20−2, 81.20−3e, 81.20−4, 81.20−7 Register December 2010 No. 660, eff 1−1−11; **correction in (3) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

The Wisconsin Administrative Code on this web site is current through the last published Wisconsin Register. See also Are the Codes on this Website Official?

Chapter SPS 382

DESIGN, CONSTRUCTION, INSTALLATION, SUPERVISION, MAINTENANCE AND INSPECTION OF PLUMBING

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SPS 382.015 Purpose.
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Subchapter V — Special Plumbing Installations
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SPS 382.51 Manufactured homes and manufactured home communities.

Subchapter VI — Installation
SPS 382.60 Pipe hangers and supports.

Subchapter VII — Plumbing Treatment Standards
SPS 382.70 Plumbing treatment standards.

Note: Sections ILHR 82.01 to 82.25, 82.15 and 82.17 to 82.25 as they existed on February 28, 1985 were repealed and new sections ILHR 82.01 to 82.36 and 82.51 and 82.60 were created effective March 1, 1985. Chapter ILHR 82 was renumbered chapter Comm 82 under s. 13.93 (2m) (b) 1., Stats. and corrections made under s. 13.93 (2m) (b) 7., Stats., Register, February, 1997, No. 494. **Chapter Comm 82 was renumbered chapter SPS 382 under s. 13.92 (4) (b) 1., Stats., Register December 2011 No. 672.**

SPS 382.01 Scope. The provisions of this chapter apply uniformly to the design, construction, installation, supervision, maintenance and inspection of plumbing, including but not limited to sanitary and storm drainage, water supplies, wastewater treatment, and dispersal or discharge for buildings, except for POWTS systems as regulated by ch. SPS 383.

History: Cr. Register, February, 1985, No. 350, eff. 3−1−85; CR 02−002: am. Register April 2003 No. 568, eff. 5−1−03; CR 02−129: am. Register January 2004 No. 576, eff. 2−1−04; **correction made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 382.015 Purpose. Pursuant to s. 145.02, Stats., the purpose of this chapter is to provide that all plumbing in connection with buildings and facilities in the state, including buildings owned by the state or any political subdivision thereof, shall be safe, sanitary and such as to safeguard the public health and the waters of the state.

History: CR 02−002: cr. Register April 2003 No. 568, eff. 5−1−03.

SPS 382.03 Application. (1) The provisions of this chapter are not retroactive, unless specifically stated otherwise in the rule.

(2) Pursuant to s. 145.13, Stats., this chapter is uniform in application and a municipality may not enact an ordinance for the design, construction, installation, supervision, maintenance and inspection of plumbing which is more stringent than this chapter, except as specifically permitted by rule.

(3) A department interpretation of the requirements in this chapter shall supersede any differing interpretation by a lower level jurisdiction. A department decision on the application of the requirements in this chapter shall supersede any differing decision by a lower level jurisdiction.

Note: A decision of the department may be appealed. Section 101.02 (6) (e), Stats., outlines the procedure for submitting requests to the department for appeal hearings and the department procedures for hearing appeals.

History: Cr. Register, February, 1985, No. 350, eff. 3−1−85; CR 02−002: renum. to be (1), cr. (2) Register April 2003 No. 568, eff. 5−1−03; CR 07−100: cr. (3) Register September 2008 No. 633, eff. 10−1−08.

Subchapter I — Intent and Basic Requirements

SPS 382.10 Basic plumbing principles. This chapter is founded upon basic principles of environmental sanitation and safety through properly designed, installed and maintained plumbing systems. Some of the details of plumbing construction may vary, but the basic sanitary and safety principles desirable and necessary to protect the health of people are the same. As interpretations may be required and as unforeseen situations arise which are not specifically addressed, the following intent statements and basic requirements shall be used to evaluate equivalency where applicable:

(1) INTENT. (a) Plumbing in connection with all buildings, public and private, intended for human occupancy, shall be installed and maintained in such a manner so as to protect the health, safety and welfare of the public or occupants and the waters of the state.

(b) Plumbing fixtures, appliances and appurtenances, whether existing or to be installed, shall be supplied with water in sufficient volume and at pressures adequate to enable the fixtures, appliances and appurtenances to function properly and efficiently at all times and without undue noise under normal conditions of use. Plumbing systems shall be designed and adjusted to use the minimum quantity of water consistent with proper performance and cleaning.

(c) Devices for heating and storing water in pressure vessels or tanks shall be so designed and installed as to prevent dangers of explosion or overheating.

(d) Drain systems shall be designed, constructed and maintained so as to conduct the wastewater or sewage efficiently and shall have adequate cleanouts.

(e) The drain systems shall be so designed as to provide an adequate circulation of air in all pipes and no danger of siphonage, aspiration or forcing of trap seals under conditions of ordinary use.

(f) A plumbing system shall be of durable material, free from defective workmanship, and designed and constructed so as to provide satisfactory service for its reasonable expected life.

(g) Proper protection shall be provided to prevent contamination of food, water, sterile goods and similar materials by backflow of wastewater.

(h) All plumbing fixtures shall be installed so as to provide adequate spacing and accessibility for the intended use and cleaning.

(2) BASIC REQUIREMENTS. (a) Every building intended for human occupancy shall be provided with an adequate, safe and potable water supply.

(b) To fulfill the basic needs of sanitation and personal hygiene, each dwelling connected to a POWTS or public sewer shall be provided with at least the following plumbing fixtures: one water closet, one wash basin, one kitchen sink and one bathtub or shower, except a system or device recognized under ch. SPS 391 may be substituted for the water closet. All other structures for human occupancy shall be equipped with sanitary facilities in sufficient numbers as specified in chs. SPS 361 to 366.

(c) Hot or tempered water shall be supplied to all plumbing fixtures that normally require hot or tempered water for proper use and function.

(d) Where plumbing fixtures exist in a building that is not connected to a public sewer system, suitable provision shall be made for treating, recycling, dispersing or holding the wastewater.

(e) Plumbing fixtures shall be made of durable, smooth, non−absorbent and corrosion resistant material, and shall be free from concealed fouling surfaces.

History: Cr. Register, February, 1985, No. 350, eff. 3−1−85; correction in (3) made under s. 13.93 (2m) (b) 7., Stats; am. (2), Register, August, 1991, No. 428, eff. 9−1−91; am. (3), Register, March, 1992, No. 435, eff. 4−1−92; r. (7) and renum. (8) to (15) to be (7) to (14), Register, February, 2000, No. 530, eff. 3−1−00; am. (2), (7) and (12), r. and recr. (3) and r. (14), Register, April, 2000, No. 532, eff. 7−1−00; CR 01−139: am. (3) Register June 2002 No. 558, eff. 7−1−02; CR 02−002: r. and recr. Register April 2003 No. 568, eff. 5−1−03; correction in (2) (b) made under s. 13.92 (4) (b) 7., Stats., Register February 2008 No. 626; **correction in (2) (b) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

Subchapter II — Administration and Enforcement

SPS 382.20 Plan review and cross connection control assembly registration. (1) GENERAL. Plans and specifications shall be submitted to the department or to an approved agent municipality for review in accordance with pars. (a) and (b).

Note: The department forms required in this chapter are available from the Safety and Buildings Division at P.O. Box 7162, Madison, WI 53707−7162, or at telephone (608) 266−3151 and (608) 264−8777 (TTY), or at the Safety and Buildings' web site at http://dsps.wi.gov/sb/sb−divForms.html.

(a) *Department review.* Plumbing plans and specifications for the types of plumbing installations, except direct replacements, listed in Table 382.20−1 shall be submitted to the department for review, regardless of where the installation is to be located. A municipality shall be designated as an agent municipality in accordance with sub. (2). Written approval for the plumbing plans shall be obtained prior to installation of the plumbing.

(b) *Department or agent municipality review.* 1. Plumbing plans and specifications for the types of plumbing installations, except direct replacements, listed in Table 382.20−2 shall be submitted for review to an agent municipality, if the installation is to be located within the agent municipality or to the department, if the installation is not to be located within an agent municipality. A municipality shall be designated as an agent municipality in accordance with sub. (2). Written approval for the plumbing plans shall be obtained prior to installation of the plumbing.

Note: For a listing of agent municipalities, see Appendix A−382.20 (2).

Note: The number of plumbing fixtures to be submitted and reviewed by an agent municipality is a subject of local ordinances.

2. Plan review and approval of one− and 2−family dwellings. Review and approval of plumbing plans for one− and 2−family dwellings shall be in accordance with the provisions specified in s. SPS 320.09.

(c) *Cross connection control assembly registration.* The installation of each reduced pressure principle backflow preventer, reduced pressure fire protection principle backflow preventer, spill resistant vacuum breaker, reduced pressure detector fire protection backflow prevention assembly or pressure vacuum breaker shall be registered with the department no later than 7 days after installation of the assembly.

Table 382.20−1

Submittals To Department

Type of Plumbing Installation
1. All plumbing, new installations, additions and alterations, regardless of the number of plumbing fixtures involved, serving hospitals, nursing homes and ambulatory surgery centers.[a]
2. Plumbing, new installations, additions and alterations involving 16 or more plumbing fixtures, serving buildings owned by a metropolitan or sanitary sewer district.[b]
3. Plumbing, new installations, additions and alterations involving 16 or more plumbing fixtures, serving buildings owned by the state.[b]
4. Alternate and experimental plumbing systems.
5. Reduced pressure principle backflow preventers, reduced pressure fire protection principle backflow preventers, pressure vacuum breaker assemblies, reduced pressure detector fire protection backflow prevention assemblies, and spill resistant vacuum breakers serving health care and related facilities.
6. Stormwater and clearwater infiltration plumbing systems serving a public building or facility.[c]
7. Treatment systems, other than POWTS, designed to treat water for compliance with Table 382.70−1.[c]

[a] The registration of cross connection control devices as required under s. SPS 382.20 (1) (c) is included as a part of plan review and approval.

[b] For the purpose of plan review submittal, water heaters, floor drains, storm inlets, roof drains, multi−purpose piping (mpp) fire sprinklers and hose bibbs are to be included in the count.

c Agent municipalities may perform this review when so authorized by the department.

Table 382.20−2

Submittals To Department Or Agent Municipality

Type of Plumbing Installation
1. New installations, additions and alterations to drain systems, vent systems, water service systems, and water distribution systems involving 16 or more plumbing fixtures to be installed in connection with public buildings.[a,b]
2. Grease interceptors to be installed for public buildings.
3. Garage catch basins, carwash interceptors and oil interceptors to be installed for public buildings and facilities.
4. Sanitary dump stations.
5. Piping designed to serve as private water mains.
6. Water supply systems and drain systems to be installed for manufactured home communities and campgrounds.[c]
7. Piping designed to serve as private interceptor main sewers greater than 4 inches in diameter when sized for gravity flow.
8. Chemical waste systems regardless of the number of plumbing fixtures.[c]
9. Stormwater systems, not including infiltration plumbing systems, serving a public building or facility where the drainage area is one acre or more.[d]
10. Mixed wastewater holding device.

[a] For the purposes of plan review submittal, water heaters, floor drains, storm inlets, roof drains, multi−purpose piping (MPP) fire sprinklers and hose bibbs are to be included in the count. For a phased project such as a mall or office complex fixture count includes all proposed fixtures connected to a common building sanitary sewer, a common water service and all storm sewers serving the building.

[b] For the purpose of plan submittal, public buildings do not include zero−lot−line row houses where each living unit is served by an individual water service and an individual building sewer.

[c] Only agent municipalities which are cities of the first class may review these types of installations.

[d] Plan review involving 16 or more plumbing fixtures also applies.

(2) AGENT MUNICIPALITIES. The department may designate to an approved municipality the authority to review and approve plumbing plans and specifications for those plumbing installations to be located within the municipality's boundary limits and which require approval under sub. (1) (b).

(a) An agent municipality shall employ at least 2 full time plumbing inspectors who have been qualified by the department.

1. The primary duties of the plumbing inspectors shall include plumbing plan review.

2. The plumbing inspectors shall be Wisconsin licensed master or journeyman plumbers.

Note: See Appendix for listing of agent municipalities.

(b) An agent municipality may waive its jurisdiction for plan review and approval for any project, in which case plans shall be submitted to the department for review and approval.

(c) Agent municipalities may set by ordinance the fees for plan review services.

(3) PRIORITY PLAN REVIEW. An appointment may be made with the department to facilitate the examination of plans in less than the normal processing time. Complete plans along with the fee specified in s. SPS 302.09, shall be submitted to the department. The plans shall comply with all of the provisions of this section.

(4) PLANS AND SPECIFICATIONS. (a) At least 2 sets of plans and one copy of specifications which are clear, legible and permanent copies shall be submitted for examination and approval.

(b) All plans submitted for approval shall be accompanied by sufficient data and information for the department to determine if the installation and its performance will meet the requirements of chs. SPS 381 to 384.

1. Information to accompany the plans shall include the location or address of the installation and the name of the owner.

2. Plans proposing the installation, creation or extension of a sanitary private interceptor main sewer which is to discharge to a municipal treatment facility shall:

a. Be accompanied by a letter from the appropriate designated planning or management agency indicating conformance with an approved areawide water quality management plan under ch. NR 121; and

b. Not be approved, if the municipality is ineligible for sanitary sewer extension approvals under s. NR 110.05.

Note: For plans proposing the installation, creation or extension of a private interceptor main sewer which is to discharge to a municipal treatment facility, see also ch. NR 121.

3. Except as provided in subd. 4., plans proposing the installation of a building sewer for new construction which is to discharge to a municipal treatment facility shall:

a. Be accompanied by a letter from either the appropriate designated management agency or sanitary district indicating conformance with an approved areawide water quality management plan; and

b. Not be approved, if the municipality is ineligible for sanitary sewer extension approvals under s. NR 110.05.

4. Plans proposing the installation of a building sewer for new construction which is to discharge to a municipal treatment facility shall not be required to comply with subd. 3., if:

a. The proposed installation is served by an existing building sewer which extends from the lot line to the public sewer and the proposed installation does not exceed the capacity of the existing building sewer or sewers; or

b. The plans indicate that a drainage load of not more than 54 drainage fixture units will be discharged through the building sewer.

Note: See Appendix for listing of water quality management agencies.

(c) Plumbing plans, index sheets and specifications for a plumbing system submitted for review and approval shall be signed in accordance with any of the following methods:

1. A Wisconsin registered architect, engineer or plumbing designer shall sign and seal or stamp all plans and accompanying specifications in accordance with ch. A−E 2.

2. A master plumber, master plumber−restricted service, master plumber−restricted appliance or a utility contractor shall sign and date all plumbing plans and accompanying specifications as provided under s. 145.06, Stats. Each sheet of plans and specifications submitted shall be signed and dated and shall include the valid Wisconsin license number of the individual responsible for the installation. Where more than one sheet is bound together into one volume, only the title sheet or index sheet shall be signed and dated by the individual responsible for the installation. The signed title or index sheet shall clearly identify all of the other sheets in the volume.

3. A pump installer shall sign and date all plumbing plans and accompanying specifications for which the individual is responsible for the installation. Each sheet of plans and specifications submitted shall be signed and dated and shall include the valid Wisconsin license number of the individual responsible for the installation. Where more than one sheet is bound together into one volume, only the title sheet or index sheet shall be signed and dated by the individual responsible for the installation. The signed title or index sheet shall clearly identify all of the other sheets in the volume.

(d) 1. When requesting approval of an experimental plumbing system, all of the following shall be submitted:

a. At least 2 sets of plans signed in accordance with par. (d) and detailing the system installation for each site.

b. A letter of consent from the site or system owner of the installation. The letter shall acknowledge that the owner has received and read a copy of the experimental plumbing system submittal and is in agreement with all requirements listed within this subdivision.

c. Any additional information as requested by the department.

2. The registered architect, engineer, designer or master plumber responsible for the design of the experimental plumbing system shall, upon completion, certify in writing to the department that the installation is in compliance with the approved plans, specifications and data.

3. Onsite inspections shall be performed by the department at time intervals as specified by the department, but not less than once a year. Time intervals shall be included as conditions of approval. An inspection report shall be written. The department may assess a fee for each inspection.

Note: Refer to ch. SPS 302 for applicable fees.

4. No later than five years after the date of the completed installation the department may perform one of the following:

a. Order the removal of the experimental plumbing system.

b. Issue an alternate approval as specified in sub. (12) (a).

c. Provide an extension of the experiment with conditions.

5. If an experimental plumbing system is subsequently codified in chs. SPS 382 and 384, or ch. 145, Stats., the requirements as specified in subds. 3. and 4. do not apply.

(5) PLAN REVIEW. Except as provided in sub. (12), and pursuant to s. SPS 302.07 (3), the department shall review and make a determination on an application for plan review within 15 business days.

(a) *Conditional approval.* If, upon review, the department determines that the plans substantially conform to the provisions of chs. SPS 382 to 384, a conditional approval, in writing, shall be granted. All noncode complying conditions stated in the conditional approval shall be corrected before or during installation.

(b) *Denial of approval.* If, upon review, the department determines that the plans do not substantially conform to the provisions

of chs. SPS 382 to 384, the request of conditional approval shall be denied in writing.

(6) EVIDENCE OF APPROVAL. The plumber responsible for the installation of the plumbing shall keep at the construction site at least one set of plans bearing the department's or the agent municipality's stamp of approval and at least one copy of specifications. The plans and specifications shall be open to inspection by an authorized representative of the department.

(7) FEES. Fees for plumbing plan review and petition for variance shall be submitted in accordance with ss. SPS 302.64 and 302.52.

(8) REVISIONS. All changes or modifications, which involve the provisions of chs. SPS 382 to 384, made to plumbing plans and specifications, which have been granted approval under sub. (1), shall be submitted to the department or agent municipality for examination. All changes and modifications shall be approved in writing by the department or agent municipality prior to installation of the plumbing.

(9) REVOCATION OF APPROVAL. The department may revoke any approval, issued under the provisions of this chapter, for any false statements or misrepresentation of facts on which the approval was based.

(10) DEPARTMENT LIMITATION AND EXPIRATION OF APPROVAL. (a) A conditional approval of a plan by the department shall not be construed as an assumption by the department of any responsibility for the design; and the department does not hold itself liable for any defects in construction, nor for any damages that may result from the specific installation.

(b) Plan approval by the department or its authorized representative shall expire 2 years after the date indicated on the approval letter, if construction has not commenced within that 2 year period.

(11) PETITION FOR VARIANCE. (a) *Procedure.* The department shall consider and may grant a variance to a provision of this chapter in accordance with ch. SPS 303.

Note: Chapter SPS 303 requires the submittal of a petition for variance form (SBD−9890) and a fee, and that an equivalency is established in the petition for variance that meets the intent of the rule being petitioned. Chapter SPS 303 also requires the department to process regular petitions within 30 business days and priority petitions within 10 business days.

Note: Form SBD−9890−X is available on request at no charge from the department at the Safety and Buildings Division, P.O. Box 7162, Madison WI 537077162, telephone (608) 266−1818, or at the Safety and Buildings' web site at http://dsps.wi.gov/sb/sb−divForms.html.

(b) *Petition processing time.* Except for priority petitions, the department shall review and make a determination on a petition for variance within 30 business days of receipt of all calculations, documents and fees required to complete the review. The department shall process priority petitions within 10 business days.

Note: The petition for variance form (SBD−8) is available from the Safety and Buildings Division, P. O. Box 7162, Madison, WI 53707.

(12) ALTERNATE AND EXPERIMENTAL PLUMBING SYSTEM REVIEW AND APPROVAL. The provisions of this chapter, ch. SPS 384 or ch. 145, Stats., are not intended to prevent the design and use of approved innovative plumbing systems.

(a) *Alternate plumbing systems.* The department may issue an approval of an alternate plumbing system if the system complies with the intent of chs. SPS 382 and 384, or ch. 145, Stats.

1. For an alternate plumbing system, before availability for statewide installation and use, an alternate plumbing system approval shall be issued. Concepts, plans, specifications and the documentation to support the system design shall be submitted to the department for review.

2. The department may require the submission of any information deemed necessary for review. Sufficient evidence shall be submitted to substantiate at least the following:

a. Assertions of function and performance.

b. Compliance with the intent of chs. SPS 382 and 384, or ch. 145, Stats.

3. Pursuant to s. SPS 302.07 (3), the department shall review and make a determination on an application for an alternate plumbing system within 3 months. Approval for an alternate plumbing system shall be issued by the department in writing.

4. The department may include specific conditions in issuing an approval for an alternate plumbing system, including an expiration date for the approval. A violation of any of the conditions under which an approval is issued shall constitute a violation of this chapter.

5. If upon review the department determines that an alternate plumbing system does not comply with the intent of chs. SPS 382 and 384, or ch. 145, Stats., the request for approval shall be denied in writing.

(b) *Experimental plumbing systems.* The department may issue an approval of an experimental plumbing system for the purpose of proving compliance with the intent of chs. SPS 382 and 384 and ch. 145, Stats.

1. For an experimental plumbing system, a separate approval shall be obtained for each system or project to be installed for the purpose of proving compliance with the intent of chs. SPS 382 and 384 and ch. 145, Stats. Approval for an experimental plumbing system shall be issued by the department in writing.

2. The department may require the submission of additional information deemed necessary for determining that the design meets the intent of chs. SPS 382 and 384 and ch. 145, Stats.

3. Pursuant to s. SPS 302.07 (3), the department shall review and make a determination on an application for an experimental plumbing system within 6 months.

4. The department may include specific conditions in issuing an approval for an experimental plumbing system, including an expiration date for the approval. A violation of any of the conditions under which an approval is issued shall constitute a violation of this chapter.

5. Denial of an experimental plumbing system or project by the department shall be made in writing.

6. The department may establish parameters to limit the number of applications for review it will accept for experimental plumbing systems.

(c) *Modification.* If an approved alternate or experimental plumbing system is modified or additional assertions of function or performance are made, the approval shall be void, unless the system is resubmitted to the department for review and approval is granted.

(d) *Revocation of approval.* The department may revoke an approval issued under this section for any false statements or misrepresentations of facts or data on which the approval was based, or as a result of system failure.

(e) *Limitations.* An approval issued by the department for an alternate or experimental plumbing system may not be construed as an assumption of any responsibility for defects in design, construction or performance of any system nor for any damages that may result.

(f) *Fees.* Fees for the review of an alternate or experimental plumbing system under this section and any onsite inspections shall be submitted in accordance with ch. SPS 302.

(13) CROSS CONNECTION CONTROL REGISTRATION. (a) Registration, as specified in sub. (1) (c), shall be submitted in a format acceptable to the department.

Note: The forms required in this chapter are available from the Safety and Buildings Division, P.O. Box 7162, Madison, WI 53707−7162, or at telephone (608) 266−3151 and (608) 264−8777 (TTY), or at the Safety and Buildings' web site at http://dsps.wi.gov/sb/sb−divForms.html.

(b) The form for registering cross connection control devices and assemblies with the department shall include at least all of the following information:

1. The building or facility name and address where the device or assembly is or will be installed.

2. The location of the cross connection control device or assembly within the building or facility.

3. A description of the cross connection control device or assembly including the size, model number, serial number and manufacturer.

4. The name of the owner or owner's agent submitting the registration form and contact information.

(c) Each registration form submitted shall be accompanied by the appropriate fee in accordance with s. SPS 302.645.

(d) Upon receipt of a completed registration form, the department shall issue written confirmation of registration including a department assigned identification number for each cross connection control device or assembly.

(e) Upon permanent removal or replacement of any reduced pressure principle backflow preventer, reduced pressure fire protection principle backflow preventer, spill resistant vacuum breaker, reduced pressure detector fire protection backflow prevention assembly, or pressure vacuum breaker, the owner shall notify the department in writing using a format acceptable to the department.

(14) PENALTIES. Penalties for violations of this chapter shall be assessed in accordance with s. 145.12, Stats.

History: Cr. Register, February, 1985, No. 350, eff. 3−1−85; am. (1) (intro.), r. and recr. Tables 82.20−1 and 82.20−2, r. (5), renum. (6) to (12) to be (5) to (11), cr. (5) (intro.) and (12), Register, May, 1988, No. 389, eff. 6−1−88; correction in (1) (b) 1. made under s. 13.93 (2m) (b) 7., Stats., Register, May, 1988, No. 389; am. (4) (c) 2. intro. and 4. a. and b., Register, February, 1991, No. 422, eff. 3−1−91; am. (4) (c) 3.a., Register, August, 1991, No. 428, eff. 9−1−91**;** am. (1) (intro.), (a), (4) (a) to (c) 1., (5) (a), (b) and Tables 82.20−1 and 82.20−2, renum. (4) (d) and (e) to be (4) (d) 1. a. and b. and am. (4) (d) 1. a., cr. (4) (d) 2., Register, February, 1994, No. 458, eff. 3−1−94; correction in (7) made under s. 13.93 (2m) (b) 7., Stats., Register, February, 1994, No. 458**;** corrections made under s. 13.93 (2m) (b) 7., Stats., Register, October, 1996, No. 490; am. Tables 82.20−1, 2, (1) (b) 2., Register, February, 1997, No. 494, eff. 3−1−97**;** correction in (13) made under s. 13.93 (2m) (b) 7., Stats., Register, February, 2000, No. 530; am. Tables 82.20−1 and 82.20−2, r. (4) (b), Register, July, 2000, No. 535, eff. 9−1−00; cr. (4) (e), r. and recr. (11) and (12), am. Table 82.20−1, Register, December, 2000, No. 540, eff. 1−1−01; CR 02−002: am. (1) (intro.) and Tables 82.20−1 and 82.20−2, r. and recr. (1) (a), r. (1) (b) 2. and (4) (d), renum. (1) (b) (intro.), and 1., (4) (c), (e) and (13) to be (1) (b) 1. and 2., (4) (b), (d) and (14) and am. (4) (b) (intro.) and 2. (intro.), cr. (1) (c), (4) (c) and (13) Register April 2003 No. 568, eff. 5−1−03; CR 02−129: am. (title), (1) (intro) and (c), and (13) (e) Register January 2004 No. 577, eff. 2−1−04; CR 04−035: am. Tables 82.20−1 and 82.20−2 Register November 2004 No. 587, eff. 12−1−04; CR 06−119: am. (5) (intro.), (12) (a) 3. and (b) 3. Register July 2007 No. 619, eff. 8−1−07; CR 08−055: am. (1) (c) (intro.), (4) (b) 2. (intro.), (13) (e), Tables 82.20−1 and 82.20−2 Register February 2009 No. 638, eff. 3−1−09; correction in (3) made under s. 13.92 (4) (b) 7., Stats., Register February 2009 No. 638; CR 09−050: am. (1) (intro.), (b) 1. and Table 82.20−2, r. and recr. (1) (a), (c) and Table 82.20−1 Register December 2009 No. 648, eff. 1−1−10; CR 10−064: am. Tables 82.20−1 and 82.20−2 Register December 2010 No. 660, eff. 1−1−11; **correction in (1) (a), (b) 1., 2., (3), (4) (b), (d) 5., (5) (intro.), (a), (b), (7), (8), (11) (a), (12) (intro.), (a) (intro.), 2. b., 3., 5., (b) (intro.), 1., 2., 3., (f), (13) (c), Table 382.20−1 made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 382.21 Testing and inspection. (1) TESTING OF PLUMBING SYSTEMS. Except as provided in par. (a), all new plumbing and all parts of existing systems which have been altered, extended or repaired shall be tested as specified in sub. (2) to disclose leaks and defects before the plumbing is put into operation.

(a) *Waiver of testing.* 1. The testing of the plumbing shall not be required where the installation does not include the addition, replacement, alteration or relocation of any water distribution, drain or vent piping.

2. a. Field testing the installation of a storm building sewer and a storm private interceptor main sewer is not required.

b. The joints and connections to be employed for storm building sewer piping shall conform with s. SPS 384.40 (1) (a).

(b) *Local inspection.* Where the plumbing is installed in a municipality having a local inspector, the testing of the plumbing shall be done in the presence of a plumbing inspector, except as provided in subd. 1. b.

1. 'Notice of inspection.' a. The plumber responsible for the installation shall notify the plumbing inspector in person, by telephone or in writing when the work is ready for inspection.

b. Except as permitted in par. (c), if the inspection is not made by the end of the normal business day following the day of notification, not including Saturday, Sunday or legal holidays, the plumber may proceed with the testing and the installation.

c. Testing may be done without the presence of the inspector, if the master plumber responsible for the installation obtains the inspector's permission to provide a written test report in a format acceptable to the inspector.

Note: See the appendix for a sample affidavit form.

2. 'Preparations for inspection.' When the installation is ready for inspection, the plumber shall make such arrangements as will enable the plumbing inspector to inspect all parts of the plumbing system. The plumber shall have present the proper apparatus and appliances for making the tests, and shall furnish such assistance as may be necessary in making the inspection.

3. 'Rough−in inspection.' A rough−in inspection shall be made when the plumbing system is roughed−in and before fixtures are set. Except as provided in subd. 1., plumbing work shall not be closed in, concealed, or covered until it has been inspected and approved by the plumbing inspector and permission is granted to do so.

4. 'Final inspection.' a. Upon completion of the plumbing installation and before final approval is given, the plumbing inspector shall inspect the work.

b. Municipalities may require that a final test be conducted in accordance with sub. (2) (h) and that the final test, when required by the municipality, shall be observed by the plumbing inspector.

5. 'Reinspections.' Whenever the plumbing official finds that the work or installation does not pass any initial test or inspection, the necessary corrections shall be made to comply with this chapter. The work or installation shall then be resubmitted for inspection to the plumbing inspector.

(c) *Inspection of one−and 2−family dwellings.* The inspection of plumbing installations for one− and 2−family dwellings shall be in accordance with ss. SPS 320.08 to 320.11.

(d) The initial testing of cross connection control assemblies shall comply with s. SPS 382.22 (8).

(2) TESTING PROVISIONS. (a) *General.* The testing of plumbing installations shall be conducted in accordance with this paragraph.

1. 'Equipment, material and labor for tests.' All equipment, material and labor required for testing a plumbing system or part thereof shall be furnished by the plumber responsible for the installation.

2. 'Exposure of work.' Except as provided in pars. (b) and (e), all new, altered, extended or replaced plumbing shall be left uncovered and unconcealed until it has been tested. Where the work has been covered or concealed before it is tested, it shall be exposed for testing.

(b) *Sanitary building sewer and sanitary private interceptor main sewer.* A sanitary building sewer and a sanitary private interceptor main sewer shall be tested for leaks and defects with water or air before or after being covered in accordance with either subd. 1. or 2. The test for leaks and defects may be applied to the entire building sewer or private interceptor main sewer or in sections. For the purposes of this subdivision, the testing of a building sewer or private interceptor main sewer is not required to include the manholes serving the sewer.

1. The building sewer or private interceptor main sewer shall be tested by insertion of a test plug at the point of connection with the public sewer. The sewer shall then be filled with water under a head of not less than 10 feet. The water level at the top of the test head of water shall not drop for at least 15 minutes.

2. The air test shall be made by attaching an air compressor testing apparatus to any suitable opening, and, after closing all other inlets and outlets to the system, forcing air into the system until there is a uniform gauge pressure of 3 pounds per square

inch. This pressure shall be held without introduction of additional air for a period of at least 15 minutes.

(c) *Building drain.* The entire building drain with all its branches, receptacles and connections shall be brought so far as practical to the surface or grade of the basement floor and shall be tested with water or air in accordance with par. (g).

(d) *Drain and vent systems.* The piping of a drain and vent systems, including conductors, shall be tested upon completion of the rough piping installation with water or air in accordance with par. (g).

(e) *Private water mains and water services.* Private water mains and water services shall be inspected before being covered. The private water mains and water services shall be tested and proven water tight under water pressure not less than the working pressure under which it is to be used. The water used for testing shall be obtained from a potable source of supply.

Note: Standard NFPA 24 for combination water services and combination private water mains may include more stringent requirements for testing.

(f) *Water distribution system.* The piping of a water distribution system shall be tested and proved water tight under a water pressure not less than the working pressure under which it is to be used. The water used for tests shall be obtained from a potable source of supply.

(g) *Test methods for drain and vent systems.* A test for watertightness shall be applied to the entire drain and vent system at one time or to the entire system in sections after the rough piping has been installed in accordance with either subd. 1. or 2.

1. If applied to the entire system, all openings in the piping shall be tightly closed, except the highest opening, and the system shall be filled with water to the point of overflow. If the system is tested in sections, each opening shall be tightly plugged except the highest opening of the section under test, and each section shall be filled with water, but a section shall not be tested with less than a 10 foot head of water. In testing successive sections, at least the upper 10 feet of the next preceding section shall be tested, so that no joint or pipe in the building, except the uppermost 10 feet of the system, is subjected to a test of less than a 10 foot head of water. The water shall be kept in the system or in the portion under test for at least 15 minutes before inspection starts. The system shall then be tight at all points.

2. The air test shall be made by attaching an air compressor testing apparatus to any suitable opening, and, after closing all other inlets and outlets to the system, forcing air into the system until there is a uniform gauge pressure of 5 pounds per square inch or sufficient to balance a column of mercury 10″ in height. This pressure shall be held without introduction of additional air for a period of at least 15 minutes.

(h) *Final test.* Where required by the local plumbing inspector, after the plumbing fixtures have been installed and the traps filled with water, the connections shall be tested and proved gas and watertight by either one of the methods specified in subd. 1. or 2.

1. The smoke test shall be made by introducing a pungent, thick smoke, produced by one or more smoke machines, into the completed system. When the smoke appears at stack openings on the roof, the openings shall be closed and a pressure equivalent to a one inch water column shall be built and maintained for the period of the inspection.

2. The air test shall be made by attaching a gauge to any suitable opening and, after closing all other inlets and outlets in the system, adding air into the system until a pressure equivalent to a one inch water column exists. The pressure shall remain constant for at least a 5−minute test period without the introduction of additional air.

History: Cr. Register, February, 1985, No. 350, eff. 3−1−85; r. and recr. (1) (d) 5., am. (1) (d) 7. intro., Register, May, 1988, No. 389, eff. 6−1−88; correction in (1) (c) made under s. 13.93 (2m) (b) 7., Stats., Register, May, 1988, No. 389**;** renum. (1) (a) and (2) (b) to (i) to be (1) (a) 1. and (2) (a) to (h), r. (2) (a), cr. (1) (a) 2. and (3), r. and recr. (1) (d) 1. (intro.), am. (1) (d) 2. (intro.), Register, February, 1994, No. 458, eff. 3−1−94**;** am. (3) (b) 3., Register, October, 1996, No. 490, eff. 11−1−96; am. (3), Register, February, 1997, No. 494, eff. 3−1−97; r. and recr. (2) (a) and (3), cr. Table 82.21−1, Register, December, 2000, No. 540, eff. 1−1−01; CR 02−002: r. and recr. (1) (b) 4. b. and (2) (d), am. (1) (d) 8. b. Register April 2003 No. 568, eff. 5−1−03; CR 04−035: am. Table 82.21−1 Register November 2004 No. 587, eff. 12−1−04; CR 08−055: am. (title) and (1) (intro.), r. and recr. (1) (b) 1. b., r. (2) and Table 82.21−1, renum. (1) (d) and (3) to be (2) and Comm 82.22 (9) Register February 2009 No. 638, eff. 3−1−09; corrections in (1) (b) 4. b., (2) (a) 2., (b) (intro.), (c), (d), (g) (intro.) and (h) (intro.) made under s. 13.92 (4) (b) 7., Stats., Register February 2009 No. 638; CR 10−064: renum. (1) (b) 1. b. to be (1) (b) 1. c., cr. (1) (b) 1. b., (d) Register December 2010 No. 660, eff. 1−1−11; **correction in (1) (a) 2. b., (c), (d) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 382.22 Maintenance and repairs. (1) GENERAL. (a) All plumbing systems, both existing and new, and all parts thereof, shall be maintained in a safe and sanitary condition.

(b) All devices or safeguards that are required by this chapter shall be maintained in good working order.

(c) The owner shall maintain plumbing systems.

(2) EXISTING SYSTEMS. (a) Except as specified in par. (b), any existing plumbing system may remain and maintenance continue if the maintenance is in accordance with the original system design and any of the following:

1. The plumbing system was installed in accordance with the code in effect at the time of installation.

2. The plumbing system conforms to the present code.

(b) When a hazard to life, health or property exists or is created by an existing system, that system shall be repaired or replaced.

Note: A cross connection is considered a health hazard by the department.

(c) Existing sewers and water services may only be connected to new buildings when determined by examination and test to conform to the requirements of this chapter.

(3) FIXTURES REPLACED. (a) When a fixture, appliance or section of pipe is replaced, the replacement fixture, appliance or pipe shall conform to the provisions of this chapter.

(b) Where the existing drain or vent piping does not conform to the current provisions of this chapter, the department may require the new fixtures to be provided with deep seal traps.

(4) PLUMBING REUSED. (a) 1. Except as provided in par. (b) plumbing materials, fixtures or devices removed and found to be in good condition may be reused if such reuse is approved by the department or a local plumbing inspector.

2. The owner of the building or facility in which the reused materials are to be installed shall provide written consent.

(b) Water supply piping materials may only be reused when the intended use involves an equal or higher degree of hazard than the previous use as specified in Table 382.70–1.

(5) REPAIRS. All repairs to fixtures, devices or piping shall be completed in conformance with the provisions of this chapter, except repair clamps or bands may be used for emergency situations.

(6) DEMOLITION OF STRUCTURES. When a structure is demolished or removed, all sanitary sewer, storm sewer and water supply connections shall be sealed and plugged in a safe manner.

(7) DEAD ENDS. If a dead end is created in the removal of any part of a drain system, all openings in the drain system shall be properly sealed.

(8) TESTING OF CROSS CONNECTION CONTROL ASSEMBLIES. (a) The performance testing requirements of this subsection apply to all cross connection control assemblies regardless of date of installation.

Note: For further clarification see Table 382.22–1.

(b) 1. A performance test shall be conducted for the assemblies listed in Table 382.22–1 at all of the following intervals:

a. At the time of installation.

b. Immediately after repairs or alterations to the assembly have occurred.

c. At least annually.

2. The performance test shall be conducted using the appropriate test standard for the assembly as specified in Table 382.22–1.

3. A cross connection assembly performance test shall be conducted by an individual registered by the department in accordance with s. SPS 305.99.

4. a. The results of the cross connection control assembly performance test shall be submitted as specified in Table 382.22–1 in a format prescribed by the department accompanied by a filing fee as specified in s. SPS 302.645 (2).

b. As specified in Table 382.22–1, the results of the cross connection assembly performance test shall be submitted to the department and purveyor within 60 days of completion of the test.

5. The results of performance tests for the assemblies listed in Table 382.22–1 shall be made available upon request to the department, its agent or the local government unit.

Table 382.22−1
Testing And Submitting Requirements For Cross Connection Control Assemblies

ASSE Standard Name and Number	CAN/CSA Standard Name and Number	ASSE Test Standard Number and Test Required	Test Results to be Submitted to Department
Double Check Backflow Prevention Assemblies and Double Check Fire Protection Backflow Prevention Assemblies ASSE 1015	Double Check Valve Backflow Preventers CAN/CSA B64.5 and Double Check Valve Backflow Preventers For Fire Protection Systems CAN/CSA−B64.5.1	5015	No
Double Check Detector Fire Protection Backflow Prevention Assemblies ASSE 1048	_ _ _ _ _ _ _	5048	No
Pressure Vacuum Breaker Assembly ASSE 1020	Pressure Vacuum Breakers CAN/CSA−B64.1.2	5020	Yes
Reduced Pressure Principle Backflow Preventers and Reduced Pressure Fire Protection Principle Backflow Preventers ASSE 1013	Reduced Pressure Principle Backflow Preventers CAN/CSA B64.4 and Reduced Pressure Principle Backflow Preventers For Fire Protection Systems CAN/CSA−B64.4.1	5013	Yes
Reduced Pressure Detector Fire Protection Backflow Prevention Assemblies ASSE 1047	_ _ _ _ _ _ _	5047	Yes
Spill Resistant Vacuum Breaker ASSE 1056	Spill Resistant Vacuum Breakers CAN/CSA B64.1.3	5056	Yes

History: CR 08−055: cr. (1) to (8) and Table 82.22−1, (9) renum. from Comm 82.21 (3) Register February 2009 No. 638, eff. 3−1−09; correction to numbering in (3) made under s. 13.92 (4) (b) 1., Stats., Register February 2009 No. 638; CR 09−050: am. (8) (b) 4. a. and Table 82.22−1, r. (9) Register December 2009 No. 648, eff. 1−1−10; **correction in (4) (b), (8) (b) 1. (intro.), 2., 3., 4. a., b., 5. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

Subchapter III — Drain and Vent Systems

SPS 382.30 Sanitary drain systems. (1) SCOPE. The provisions of this section set forth the requirements for the design and installation of sanitary drain systems, including building drains and building sewers.

Note: The provisions for storm and clear water drain systems are specified in s. SPS 382.36.

(2) MATERIALS. All sanitary drain systems shall be constructed of approved materials in accordance with ch. SPS 384.

(3) LOAD ON DRAIN PIPING. (a) *Intermittent flow.* 1. 'Fixture.' The load factor on drain piping shall be computed in terms of drainage fixture unit values specified in Table 382.30–1 for the corresponding listed fixture.

2. 'Devices.' Drainage fixture unit values for intermittent flow devices not listed in Table 382.30–1 shall be computed on the basis of one fixture unit equalling one gallon per minute of flow.

Note: Equipment with a timed discharge cycle(s) of 2 minutes or less may be considered as an intermittent flow device.

(b) *Continuous flow devices.* Drainage fixtures unit values for continuous flow devices such as pumps, ejectors, air conditioning equipment or similar devices that discharge continuously shall be computed on the basis of 2 fixture units for each one gallon per minute of flow.

(4) SIZE OF DRAIN PIPING. (a) *Maximum loading.* 1. The total drainage load in any portion of drain piping shall not exceed the limits specified in Tables 382.30−2 and 382.30−3.

2. The drainage fixture unit values assigned to a receptor which is to receive only the indirect waste discharge from a relief valve on a domestic water heater may be disregarded when determining the minimum size of the building drain and building sewer. Any drain piping between the receptor and the building drain shall be sized by including the assigned fixture unit values for the type of receptor.

Note: See s. SPS 382.31 (17) for sizing requirements of combination drain and vent systems.

Note: See Appendix for further explanatory material.

(b) *Minimum size of building sewers.* 1. 'Gravity flow sewers.' The minimum size of a gravity flow sanitary building sewer shall be 4″ in diameter. A municipality or sanitary district by ordinance may require that portion of the building sewer between the lot line and the public sewer to be larger than 4″ in diameter.

2. 'Pressurized sewers.' a. Sewers pressurized through the use of sewage ejectors, sewage pumps or sewage grinder pumps shall be sized to maintain a minimum flow velocity of 2 feet per second and shall be in accordance with the ejector or pump manufacturer's recommendations.

b. Pressurized building sewers shall be sized not less than 2″ in diameter for sewage ejectors and sewage pumps, and 1¼″ in diameter for all sewage grinder pumps.

(c) *Minimum size of private interceptor main sewers.* 1. Except as provided in subd. 3., the minimum size of a gravity flow private interceptor main sewer shall be 4″ in diameter.

2. Except as provided in subd. 3., the minimum size of pressurized private interceptor main sewer shall be such so as to maintain a minimum flow velocity of 2 feet per second.

3. A municipality or a sanitary district may by ordinance, require the minimum size of a private interceptor main sewer to be larger than 4″ in diameter.

4. Private interceptor main sewers 6″ or less in diameter may not exceed the drainage fixture limits in Table 382.30−3.

5. Private interceptor main sewers 8″ or larger in diameter shall conform with the design criteria specified in s. NR 110.13.

Note: See Appendix A−382.30 (4) for further explanatory material.

(d) *Future fixtures.* Where provisions are made for the future installation of fixtures, the drainage fixture unit values of such fixtures shall be considered in determining the required sizes of drain and vent pipes. Construction to provide for future installations shall be terminated with a plugged fitting or fittings.

Table 382.30−1
Drainage Fixture Unit Values By Fixture Type

Type of Fixture	Drainage-Fixture UnitValue (dfu)	Trap Size Minimum Diameter (inches)
Automatic Clothes Washers:		
Commercial, individual	4	2
Commercial, large capacity	a	a
Self Service Laundry	4	2
Residential	4	2
Autopsy Table	h	h
Bathroom Group, includes: water closet, lavatory, bathtub or shower	6	
Bathtubs, all types[b]	2	1 1/2
Bedpan Washer	6	2
Beer Tap	1/2	1 1/4
Bidet	2	1 1/2
Bottle Cooler	1/2	1 1/4
Campsite Receptor	6	4
Coffee Maker	1/2	1 1/4
Cuspidor, fountain or dental	1	1 1/4
Dipper Well	1	1 1/4
Dishwasher, commercial type	c	c
Dishwasher, residential type	2	1 1/2
Drinking Fountain	1/2	1 1/4
Exhaust Hood Washer	4	2
Floor Drain:		
2 inch	2	2
3 inch	3	3
4 inch	4	4
Larger than 4 inch	4	d
Glass Filler	1/2	1 1/4
Glass Washer	2	1 1/2
Health Care Fixtures:		
Clinic sink	6	NA
Exam/treatment sink	1	1 1/4
Sitz bath	2	1 1/2
Ice Chest	1/2	1 1/2
Laundry Tray, 1 or 2 compartment	2	1 1/2
Lavatory	1	1 1/4
Lavatory, combination per trap	1	1½
Manufactured Home	11	NA
Refrigerated Food Display Case	1	1
Shower Stall:		
Residential	2	2
Public, individual	2	2
Public, group	2 per shower head	2

Table 382.30−1
Drainage Fixture Unit Values By Fixture Type

Type of Fixture	Drainage-Fixture UnitValue (dfu)	Trap Size Minimum Diameter (inches)
Sinks:[i]		
Bar, residential	1	1¼
Breakroom (single compartment)	1	1 1/2
Cup	1/2	1 1/4
Factory, wash, per set of faucets	1	1 1/2
Fountain wash up	1	1 1/2
Fountain or Bar, 4 compartments or less	3	1 1/2
Food Waste Grinder, commercial 2 HP or less	2	f
Food Waste Grinder, commercial 3 HP or more	3	f
Laboratory	2	1 1/2
Laboratory, school	2	1 1/2
Classroom	1	1 1/4
Pack or plaster	3	2
Residential, with or without food waste grinder	2	1 1/2
Restaurant, Scullery, pots and pans — 4 compartments or less	3	f
Food, rinsing, cleaning or thawing	3	2
Service Sink, Flushing Rim	6	3
Service Sink, 2 inch diameter, wall outlet	2	2
Service Sink, 3 inch diameter, wall outlet	3	3
Service Sink, 2 inch diameter, floor outlet	2	2
Service Sink, 3 inch diameter, floor outlet	3	3
Shampoo Sink, barber or beauty parlor	2	1 1/2
Surgeons, wash up	3	1 1/2
Wash Fountain, circular and semi−circular	2	1 1/2
Receptors of Indirect Wastes, gravity flow discharge:		
1 1/4 inch receptor outlet diameter	1	1 1/4
1 1/2 inch receptor outlet diameter	2	1 1/2
2 inch receptor outlet diameter	3	2
3 inch receptor outlet diameter	4	3
4 inch receptor outlet diameter	6	4
Larger than 4 inch receptor outlet diameter	8	f
Soda Dispenser	1/2	1 1/4
Sterilizers:		
Bedpan	4	2
Garbage can washer	3	3
Instrument or water	1	
Urinal	2	g
Water Closet, nonpublic	4	g
Water Closet, public	6	g

NA = not applicable

[a] Based on discharge rate of the fixture.

[b] Includes foot, sitz and infant baths and regular bathtubs with or without showers or whirlpool circulation piping.

[c] Based on discharge rates and number of outlets; a 4″ diameter trap and drain pipe minimum recommended.

[d] Trap size corresponds to the size of the floor drain.

[f] Trap size corresponds to the size of the drain outlet.

[g] Trap size specified in referenced standards of s. SPS 384.20.

[h] Trap size corresponds to the size of the drain outlet. Use the dfu value of the receptor serving the autopsy table.

[i] Sinks not specified in this table shall be assigned 1 dfu for 1 1/4″ tailpiece, 2 dfu for 1 1/2″ tailpiece and 3 dfu for 2″ tailpiece.

The Wisconsin Administrative Code on this web site is current through the last published Wisconsin Register. See also Are the Codes on this Website Official?

Table 382.30−2
Stacks And Drain Piping

Pipe Diameter (inches)	Maximum Number of Drainage Fixture Units That May Drain Through Any Portion of Drain Piping[a]			
	Drain Piping Other Than Stacks[b]	Stacks[c]		
		Total Discharge from Side Connections into One Branch Interval[d,e]	Stacks of 3 Branch Intervals or Less	Stacks of More Than 3 Branch Intervals
1 ¼	1	1	2	2
1 ½	3	2	4	8
2	6	6	10	24
3	20	20	48	72
4	160	90	240	500
5	360	200	540	1,100
6	620	350	960	1,900
8	1,400	600	2,200	3,600
10	2,500	1,000	3,800	5,600
12	3,900	1,500	6,000	8,400
15	7,000	f	f	f

[a] Through any portion of a stack includes all of the flow at the design point.
[b] Does not include building drains and subdrains, building sewers, private interceptor main sewers and forced discharge piping.
[c] Drain stacks may be reduced in size as the drainage load decreases to a minimum diameter of one half of the diameter required at the base of the stack, but not smaller than that required for a stack vent under s. SPS 382.31 (14) (a).
[d] Into one branch interval includes the discharge from the top fitting of the branch interval and does not include the discharge from the bottom most fitting creating the branch interval.
[e] Reduction in diameter may occur within a branch interval.
[f] Sizing based on design criteria.

Table 382.30−3
Building Drains, Building Subdrains, Building Sewers and Private Interceptor Main Sewers[a]

Pipe Diameter (inches)	Maximum Number of Drainage Fixture Units Which May Drain Through Any Portion of a Building Drain, Building Subdrain, Building Sewer or Private Interceptor Main Sewer			
	Pitch (inch per foot)			
	1/16	1/8	1/4	1/2
1 ¼	NP[b]	NP	1	1
1 ½	NP	NP	3	3
2	NP	NP	6	9
3	NP	36	42	50
4	NP	180	216	250
5	NP	390	480	575
6	NP	700	840	1,000
8	1,400	1,600	1,920	2,300
10	2,500	2,900	3,500	4,200
12	3,900	4,600	5,600	6,700
15	7,000	8,300	10,000	12,000

[a] Private interceptor main sewers 6 inches or less in diameter, see s. NR 110.13 for private interceptor main sewers 8 inches or larger in diameter.
[b] NP means Not Permitted.

Note: For further explanatory material see Appendix A−382.30 (4).

(5) PITCH OF HORIZONTAL DRAIN PIPING. All horizontal drain piping 4″ or larger in diameter shall be installed at a pitch which produces a computed velocity of at least 2 feet per second when flowing half full.

(a) *Horizontal branch drains.* 1. The minimum pitch of horizontal branch drains 2″ or less in diameter shall be $^1/_4$″ per foot.

2. The minimum pitch of horizontal branch drains larger than 2″ in diameter shall be $^1/_8$″ per foot.

(b) *Building drains and building sewers.* 1. The minimum pitch of building drains shall be in accordance with Table 382.30−3.

2. a. The minimum pitch of building sewers 10″ or less in diameter shall be in accordance with Table 382.30−3.

b. The minimum pitch of building sewers 12″ or larger in diameter shall conform with the minimum pitch specified for municipal sewers in s. NR 110.13.

Note: See also s. SPS 382.30 (4) (c) 5. for further explanatory material.

(c) *Private interceptor main sewers.* 1. The minimum pitch of private interceptor main sewers 6″ or less in diameter shall be in accordance with Table 382.30−3.

2. The minimum pitch of private interceptor main sewers 8″ or larger in diameter shall conform with the minimum pitch specified for municipal sewers in s. NR 110.13.

Note: See Appendix for further explanatory material.

(6) OFFSETS IN VERTICAL DRAINS. Offsets in vertical drain piping shall be in accordance with this subsection.

(a) *Offsets of 45° or less.* 1. An offset in a vertical drain, with a change in direction of 45° or less from the vertical, shall be sized as a vertical drain piping in accordance with sub. (4).

2. Except as provided in par. (c), where a horizontal branch connects to a drain stack within 2 feet above or below an offset with a change of direction of 30º to 45º from the vertical and the offset is located 5 or more branch intervals below the top of the stack, the offset shall be vented in accordance with s. SPS 382.31 (5) (a).

(b) *Offsets of more than 45°.* Except as provided in par. (c), a drain stack with an offset of more than 45º from the vertical shall be installed in accordance with subds. 1. to 5.

1. That portion of the drain stack above the highest offset shall be sized as for vertical drain piping in accordance with sub. (4).

2. That portion of the offset between and including the offset fittings shall be sized as building drain piping in accordance with sub. (4).

3. That portion of stack below the offset shall be not less than the size of the offset.

4. Where an offset of more than 45º is located more than four branch intervals below the top of the drain stack, a horizontal branch may not connect within the offset or within 2 feet above or below such offset.

5. a. Except as exempted in subd. 5. b., or par. (c), where an offset in a drain stack with a change of more than 45º from vertical is located below 5 or more branch intervals, the offset shall be vented in accordance with s. SPS 382.31 (5) (b).

b. The vent required in subd. 5. a. shall not be required where the drain stack, including the offset, is sized one pipe size larger than required for a building drain designed to serve as per sub. (4) and the entire stack and offset are not less in cross sectional area than that required for a stack plus the area of a vent as required in s. SPS 382.31 (5) (b).

Note: See Appendix for further explanatory material.

(c) *Exception.* Where an offset is located two or more feet below the lowest branch drain connection to the stack, the venting specified in this subsection and s. SPS 382.31 (5) (b) is not required.

(7) HORIZONTAL BRANCH DRAIN CONNECTION AT BASE OF A STACK. (a) A horizontal branch drain may not connect downstream from the base fitting of a drain stack 2″ or larger in diameter within the distance equal to 10 pipe diameters of the drain to which the horizontal branch drain connects.

(b) A building drain branch or building subdrain branch may not connect to a building drain or building subdrain downstream from the base fitting of a drain stack 2″ or larger in diameter within the distance equal to 20 pipe diameters of the building drain or building subdrain.

Note: See Appendix for further explanatory material.

(8) PIPING CHANGES IN DIRECTION. Changes in the direction of drain piping shall be accomplished in accordance with the requirements of this subsection.

(a) *Fittings.* All changes in direction of flow in drain piping shall be made by the appropriate use of 45 degree wyes, long or short sweep quarter bends, sixth, eighth, or sixteenth bends, or by a combination of these or other equivalent fittings. Except as provided in subds. 1. to 3., fittings which change the direction of flow for drain piping 8″ or less in diameter shall conform to the minimum radii specified in Table 382.30−4.

Note: See Appendix for further explanatory material.

1. The minimum radius for the first 90° fitting downstream from a trap serving a lavatory or sink shall be 1−3/4″ for drain piping 1−1/2″ in diameter. The fitting shall be a tee or quarter bend.

2. The minimum radius for the first 90° bend or elbow downstream from a water closet shall be 2−1/2″ for drain piping 3″ in diameter.

3. The minimum radius for the first 90° bend or elbow downstream from a water closet shall be 3″ for drain piping 4″ in diameter.

Table 382.30−4

Minimum Radii of Fittings (in inches)

Diameter of pipe (inches)	Changes in Direction of Flow	
	Horizontal to Vertical	Vertical to Horizontal and Horizontal to Horizontal
1−1/4	1−1/8	2−1/4
1−1/2	1−3/8	2−3/4
2	1−7/8	3−1/4
3	2−7/8	4−1/16
4	3−3/4	4−7/8
5	4−1/2	6−1/2
6	5	7
8	6	8

(b) *Blowout type fixtures.* Where blowout type fixtures are installed back to back, appropriate fittings shall be installed to prevent the passage of wastes from one fixture to the other.

(9) DRAIN FITTINGS AND CONNECTIONS. Drain fittings, connections, devices and methods of installation shall not obstruct or retard the flow of water, wastes, sewage or air in the drain system or venting system in an amount greater than the normal frictional resistance to flow, unless as otherwise permitted in this chapter or unless approved by the department.

(a) *Closet bend.* The reduction of a 4 x 3 inch closet bend or collar fitting from 4″ to 3″ shall not be considered an obstruction.

(b) *Side inlet tees or bends.* The side inlet of a low pattern or high pattern tee or bend shall not be used as a vent connection when the side inlet is placed in a horizontal position or when any arrangement of piping or fittings produces a similar effect.

(c) *Prohibited fittings and connections.* The types of fittings and connections specified in subds. 1. to 4. shall not be used for drain piping:

1. A heel inlet bend when the heel inlet is in the horizontal position;

2. A fitting or connection which has an enlargement chamber or recess with a ledge or shoulder, or reduction in pipe area in the direction of flow;

3. A fitting which has running threads; and

4. A connection by means of drilling and tapping of a drain or vent pipe, unless as otherwise approved by the department.

(d) *Saddles.* If a pipe saddle is used to connect drain piping together, the saddle shall be installed in accordance with s. SPS 384.30 (5) (d).

(10) SUMPS, EJECTORS AND PUMPS. (a) *Sumps.* 1. 'General.' All sanitary building subdrains shall discharge into an approved, vented sump with an airtight cover. The sump shall be so located as to receive the wastewater by gravity flow, and shall be located at least 25 feet from any water well or as otherwise approved by the department of natural resources.

2. 'Capacity.' Except as provided in pars. (c) and (d), the minimum capacity of the sump shall be determined in accordance with the provisions of subd. 2. a. to e.

a. The water supply fixture unit method shall be used to determine peak input flow in gallons per minute; only the fixtures that drain to the sump shall be included.

Note: When converting water fixture units to gallons per minute it is permissible to calculate the load as a supply system with predominantly flush tanks.

b. The capacity of the sump shall be such that the pump when actuated by the lowest "pump on" switch runs at least 20 seconds.

c. Between the highest "pump on" switch level and the sump inlet, the sump shall hold the amount of input that exceeds the discharge of the pumping equipment in a 5 minute peak input period, but in no case shall the vertical distance between the switch and the inlet be less than 3″.

d. The low water level shall be maintained in accordance with the pump manufacturer's requirements, but shall not be less than 4″ above the sump bottom.

e. Sumps containing one pump shall have an inside diameter of at least 24″. Sumps containing 2 pumps shall have an inside diameter of at least 30″.

Note: See Appendix for further explanatory material.

3. 'Vents.' All sumps and all drains leading to a sump shall be vented in accordance with s. SPS 382.31.

4. 'Materials.' All sumps shall be constructed in a watertight manner of approved materials in accordance with ch. SPS 384.

5. 'Removable covers.' Penetrations through the top of removable sump covers shall be limited to those for the electrical supply, the vent piping and the discharge piping for the pump or pumps.

(b) *Ejectors and pumps.* 1. 'Where required.' The liquid from all sanitary building sumps shall be lifted and discharged into the building sanitary drain system by automatic ejectors, pumps or any other equally efficient method approved by the department.

2. 'Duplex equipment.' a. Duplex ejector or pumping equipment shall be installed in a public building where 3 or more water closets or more than 20 drainage fixture units discharge into a sump.

b. Duplex ejector or pumping equipment shall be installed where the sanitary wastes of 2 or more one− or 2−family dwellings discharge into a sump.

c. Where duplex ejector or pumping equipment is installed, appropriate devices shall be installed to automatically alternate operation of the pumps or ejectors and to operate both pumps or ejectors when one unit cannot handle the load.

d. Where duplex pumping equipment is installed, an audible or visual alarm system with a manual control reset shall be installed to indicate pump failure.

3. 'Size.' The size and design of an ejector or pump shall be determined by the capacity of the sump to be served, the discharge head and discharge frequency. All ejectors and pumps shall provide a minimum flow velocity of 2 feet per second in the forced discharge piping.

Note: See Appendix for velocity in relation to flow rate by various pipe sizes.

Note: Ejectors or pumps discharging to septic tanks may disturb the normal settling properties of the tank environment; contact the Safety and Buildings Division for more information.

a. All sewage grinder pumps shall have a minimum $1^1/_4$″ diameter discharge opening and discharge piping.

b. All nongrinder−type sewage pumps serving water closets shall be capable of passing a 2″ diameter solid ball and shall have a minimum 2″ diameter discharge opening and discharge piping. All other pumps handling sanitary wastes shall be rated by the manufacturer as an effluent pump, shall be capable of passing a $^1/_2$″ diameter solid ball and shall have a minimum $1^1/_4$″ diameter discharge opening and discharge piping.

4. 'Discharge connections.' a. The discharge pipe from the ejector or pump shall be connected to the gravity drain by means of a wye pattern fitting. Where the fitting connects to a horizontal drain, the bottom of the wye branch of the fitting shall be located above the horizontal center line.

b. With the exception of exterior sumps, a full flow check valve shall be installed in the discharge piping from each ejector or pump.

c. Where duplicate ejector or pumping equipment is installed, each discharge pipe from an ejector or pump shall be provided with a gate or ball type valve installed downstream of each full flow check valve.

5. 'Discharge pipe air relief.' Air relief valves shall be provided at all high points in the discharge piping of an ejector or pump where the piping arrangement creates an air trap.

6. 'Prohibited connections.' No fixtures may be connected to the discharge pipe between the ejector or pump and the point where it enters the gravity drain.

7. 'Maintenance.' All ejectors, pumps and like appliances shall receive care as needed to keep them in a satisfactory operating condition.

(c) *Prefabricated pumps and sump systems.* The minimum capacity of a prefabricated pump and sump system shall be determined in accordance with all of the following:

1. The water supply fixture unit, wsfu, method shall be used to determine peak input flow in gallons per minute. The peak input shall include all the fixtures that drain to the sump.

2. Unless storage is provided as specified in par. (a) 2., the capacity of the prefabricated pump and sump system shall accommodate the peak input flow.

3. The low water level shall be maintained in accordance with the pump manufacturer's requirements.

(d) *Exterior sumps.* The minimum capacity of exterior sumps shall be determined in accordance with all of the following:

1. Peak input flow in gallons per minute shall be determined in accordance with either of the following:

a. The water supply fixture unit, wsfu, method of all the fixtures that drain to the sump.

b. The provisions as specified in s. SPS 383.43 (2) through (6).

2. In lieu of providing the duplex pumping equipment as specified in par. (b) 2., a one−day holding capacity may be provided above a high level alarm when installed on a simplex system.

(11) BUILDING DRAINS AND BUILDING SEWERS. (a) *Limitations.* No building sewer may pass through or under a building to serve another building, unless:

1. The building sewer serves farm buildings or farm houses, or both, which are all located on one property; or

2. The building sewer or private interceptor main sewer serves buildings located on the same property and a document, which indicates the piping and distribution arrangement for the property and buildings, shall be recorded with the register of deeds no later than 90 days after installation.

(b) *Building drains.* 1. 'Elevation.' a. All building drains shall be installed below the lowest floor levels on which fixtures may be installed if the public sewer, POWTs or private interceptor main sewer elevation permits.

b. Where any portion of an above−ground building drain discharges to a vertical pipe, the building drain shall connect to the building sewer at an elevation at least 30″ above the basement floor.

Note: See Appendix for further explanatory material.

2. 'Backwater protection.' A building drain subject to backflow or backwater shall be protected with a backwater valve or with a sump with pumping equipment in accordance with sub. (10).

a. Backwater valves, when fully open, shall have a capacity not less than that of the pipes in which installed.

b. Backwater valves shall be so located as to be readily accessible for cleaning.

3. 'Floor drain required.' a. Where a plumbing fixture or appliance is located on a floor which is entirely below grade, a floor drain shall be installed to serve that floor.

b. In any room containing the recessed or concealed portions of sterilizers located in health care or related facilities, at least one floor drain connecting to the drainage system shall be installed in a manner to adequately drain the entire floor area.

(c) *Building sewers.* 1. 'Minimum depth.' a. The top of a building sewer shall be located at a depth of not less than 42″ below finished grade, except as provided in subd. 1. b. or subd. 2.

b. The top of a building sewer which discharges to a septic tank, holding tank or grease interceptor shall be located at a depth of not less than 18″ below finished grade.

2. 'Protection from frost.' a. Except as provided in subd. 2. c. to e., a building sewer or private interceptor main sewer shall be protected from frost in accordance with subd. 3. in areas where the top of the building sewer or private interceptor main sewer is located less than 60″ below a surface area from which snow will be cleared.

b. Except as provided in subd. 2. c. to e., a building sewer or private interceptor main sewer shall be protected from frost in accordance with subd. 3. in areas where the top of the building sewer or private interceptor main sewer is located less than 42″ below a surface area which snow will not be cleared.

c. Where a building sewer or private interceptor main sewer discharges to a holding tank, POWTs treatment tank or grease interceptor, the portion of a building sewer or private interceptor main sewer which is within 30 feet from the connecting building drain and which is under a surface area from which snow will not be cleared shall not be required to be protected from frost.

d. Frost protection for a building sewer shall not be required where the predicted depth of frost as determined from Figure 382.30−1 and Table 382.30−6 does not extend below the top of the building sewer.

e. Where a building sewer or private interceptor main sewer is installed to serve summer use public facilities, frost protection requirements shall not apply.

Note: This exemption applies to frost sleeves as provided in s. SPS 382.35 (5) (a) 2.

3. 'Insulation for building sewers.' Where required by subd. 2. a. or b., building sewer or private interceptor main sewer insulation for frost protection shall be provided in accordance with one of the methods specified in subd. 3. a. to d.

a. Extruded polystyrene foam insulation shall be installed at a depth of at least 18″ below finished grade and at least 6″ above the top of the sewer pipe. The minimum thickness and width of the foam insulation shall be determined from Figure 382.30−1 and Tables 382.30−5 to 382.30−7. If the insulation is to be installed more than 6″ above the top of the sewer, the number of inches exceeding 6″ shall be added to the width of insulation determined from Table 382.30−7.

b. Extruded polystyrene foam insulation shall be installed using a box method. The 3−sided box shall be formed with 3 lengths of polystyrene foam insulation where the top of the box extends horizontally to the farthest edge of both vertical sides. The insulation shall be installed at or below a depth of at least 12″ below finished grade and 6″ above the top and 6″ from each side of the building sewer or private interceptor main sewer. The minimum thickness of the foam insulation shall be determined from Figure 382.30−1 and Table 382.30−5.

Note: See Appendix for further explanatory material.

c. Lightweight insulating concrete shall be installed to the depth of the spring line of the sewer and shall extend laterally at least 6″ on both sides of the sewer. The minimum thickness of the insulating concrete shall be determined from Figure 382.30−1 and Table 382.30−5. The thickness shall be measured from the top of the sewer. The top of the insulation shall be installed at least 12″ below finished grade.

d. Alternative methods of frost protection shall be approved by the department.

Figure 382.30−1. Frost protection zones.

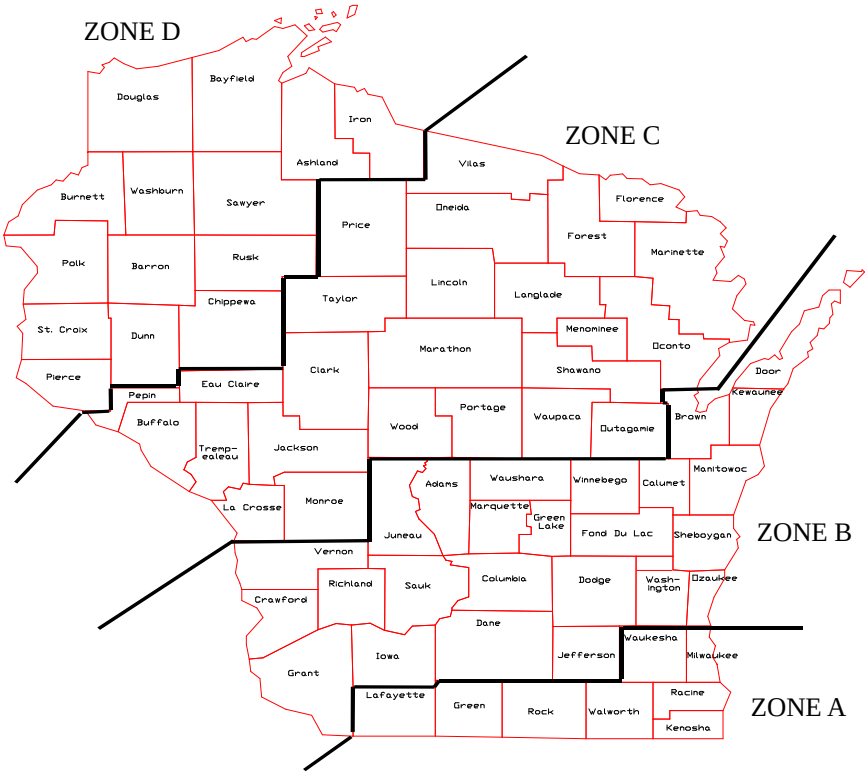

Table 382.30−5
Minimum Thickness of Insulation

Frost Protection Zone	Extruded Polystyrene Foam (in inches)	Insulating Concrete (in inches)
A	1.0	6
B	1.5	9
C	2.0	12
D	2.5	15

Table 382.30−6
Predicted Depth of Frost in Various Types of Backfill Soil (in feet)

Soil Type	Frost Protection Zone			
	A	B	C	D
Clay, Clay Loam	2.5	3.0	3.5	4.0
Silt Loam, Silty Clay Loam	3.5	4.0	4.5	5.5
Sandy Clay Loam	4.0	4.5	5.5	6.0
Sandy Loam, Loamy Sand	4.5	5.0	6.0	6.5
Sand	5.0	5.5	6.5	7.5
Gravelly Sand	6.0	7.5	9.0	10.0

Table 382.30−7
Minimum Width of Extruded Polystyrene Foam Insulation (in feet)

Predicted Depth of Frost (feet)	Depth of Sewer (in feet)					
	2.0	2.5	3.0	3.5	4.0	4.5
2.5	2	NR				
3.0	3	2	NR			
3.5	4	3	2	NR		
4.0	5	4	3	2	NR	
4.5	6	5	4	3	2	NR
5.0	7	6	5	4	3	2
5.5	8	7	6	5	4	3
6.0	9	8	7	6	5	4
6.5	10	9	8	7	6	5
7.0	10	10	9	8	7	6
7.5	10	10	10	9	8	7
8.0	10	10	10	10	9	8
8.5	10	10	10	10	10	9
9.0	10	10	10	10	10	10
10.0	10	10	10	10	10	10

NR means Not Required.

(d) *Location limitations.* Building drains, building sewers or private interceptor main sewers shall be separated from water wells by the applicable separation distances contained in chs. NR 811 and 812 or as otherwise approved by the department of natural resources.

Note: See s. SPS 382.40 for provisions regarding the separation of water supply piping, building sewers and private interceptor main sewers.

Note: See Appendix for further explanatory material. Section NR 812.08 may require additional setbacks.

(e) *Installation of building drains and building sewers.* 1. 'Trenching.' All excavations for building drains and building sewers shall be open trench work, unless otherwise permitted by local ordinance or accepted by the local inspector.

2. 'Stable bottom.' Where the bottom of the trench can be maintained in a stable condition and free of water during the time of installation the building drain and the building sewer shall be bedded and initially backfilled to comply with all the following requirements:

a. Where the trench bottom does not contain stone larger than one inch in size or where bedrock is not encountered, the trench may be excavated to grade.

b. Where stone larger than one inch size or when bedrock is encountered, the trench shall be excavated to a depth at least 3 inches below the grade elevation and shall be brought back to

grade with a bedding of sand, gravel or crushed stone that shall be of a size that all the material shall pass a ¾−inch sieve.

c. Bedding shall be sufficiently dry and hand or mechanically compacted to a minimum of 90 percent standard proctor density.

d. Initial backfill to a depth of 12 inches over the pipe shall be sand, crushed stone or excavated material which is neither corrosive nor organic in nature.

e. Initial backfill shall be of a size that passes a one−inch sieve.

f. A concrete floor may be placed over a building drain having less than 12 inches of initial backfill.

g. Initial backfill shall be placed in increments not to exceed 6 inches in depth.

h. Initial backfill shall be well tamped for the full width of the trench and length of the sewer.

3. 'Unstable bottom.' Where a mucky or unstable bottom is encountered in the trench, the required dry and stable foundation conditions shall be provided by providing one of the following options:

a. Sheathing shall be driven and left in place to a depth of 48 inches below the trench bottom or to solid foundation to a lesser depth.

b. Removal of wet and yielding material to a depth of 24 inches or to solid material and replacement of the unstable material with limestone screenings, pea gravel or equivalent material.

c. Install a longitudinally reinforced concrete cradle the width of the trench and at least 3 inches thick.

d. Install a longitudinally reinforced concrete slab the width of the trench and at least 3 inches thick.

e. Backfill and bedding shall comply with subd. 2. d. to h.

4. 'Backfill completion.' Care shall be exercised in placing the balance of the backfill to prevent breakage of the pipe. Large boulders or rock, concrete slabs, or frozen masses shall not be used in the backfill. At least 36″ of backfill cover shall be provided over the top of the pipe before the pipe trench is wheel−loaded.

5. 'Pipe openings protected.' The ends of all pipes not immediately connected shall be closed so as to prevent the introduction of earth or drainage from an excavation.

(f) *Connection to public sewer.* The connections of building sewers to public sewers shall be in accordance with conditions of approval for the public sewer granted by the department of natural resources under s. 281.41, Stats.

1. 'Gravity public sewer.' When a building sewer connection to the public sewer is not found within 3 feet of the point designated by the local governing body or its authorized representative, the connection shall be made in accordance with one of the provisions specified in subd. 1. a. to d.

a. A saddle fitting approved by the department and acceptable to the municipality or sanitary district shall be installed.

b. Where acceptable to the municipality or sanitary district a portion of the main sewer may be removed and a tee or wye fitting approved by the department may be inserted with compression joints in the public sewer acceptable to the municipality or the sanitary district. The insertion shall be made under the supervision of the authorized representative of the municipality or the sanitary district.

c. When the public sewer is concrete or clay, the end of the connecting sewer may be set upon or in an opening cut into the top half of the public sewer, but shall not protrude into the public sewer. The connection shall be secured by encasing the main sewer pipe and the connection in concrete at least 3″ thick so as to assure permanency of the connection and adequate backing of the public sewer pipe.

d. In lieu of the use of a fitting and in the event that an opening cannot be located in the top half of the public sewer, a length of concrete or clay public sewer pipe may be removed and a section with a wye fitting shall be inserted in its place. The joints at the ends of the section shall be encased in concrete at least 3″ thick. The connection or insertion shall be made under the supervision of the authorized representative of the municipality or the sanitary district.

2. 'Pressurized public sewer.' Where a forced building sewer discharges to a pressurized public sewer all of the following requirements shall apply:

a. A curb stop shall be installed on the same property as close as possible to the connection to the common forced main sewer.

b. A check valve shall be installed in the pressurized building drain or building sewer.

c. An accessible quick disconnect shall be installed upstream of the check valve.

Note: See Appendix for further explanatory material.

(g) *Prohibited installations.* 1. 'Harmful discharge.' No person may connect to a public sewer any building drain or building sewer through which is discharged any substance likely to cause undue corrosion, obstruction, nuisance, explosion or interference with sewage treatment processes.

2. 'Storm water and clear water connections.' Except as provided in s. SPS 382.36 (3), storm drain piping and clear water drain piping may not discharge to a sanitary building drain which connects to a publicly−owned treatment works.

Note: See s. SPS 382.36 for provisions relative to storm sewers.

(h) *Locating requirements.* A means to locate buried non−metallic sewers and private interceptor main sewers discharging to municipal mains shall be accomplished in accordance with one of the following options:

Note: See the appendix for further information.

1. A tracer wire shall be installed in accordance with all of the following:

a. Tracer wire shall be installed along the length of the non−metallic pipe.

b. Tracer wire shall be a minimum of 18 gauge, insulated, single−conductor copper wire or equivalent.

c. Tracer wire shall be located directly above and within 6 inches of the non−metallic pipe.

d. Tracer wire shall be accessible and locatable within the owner's property at 400−foot intervals or increments thereof.

e. Exterior access locations shall include a means of protecting the tracer wire.

f. In−ground sleeves shall be installed as provided in s. SPS 382.35 (5) (a) 2. c. and d.

g. Where tracer wire is more than 6 inches from the pipe, tracer wire insulation color shall comply with subd. 1. h.

h. Tracer wire insulation color for non−metallic sewer pipe shall be green.

i. Tracer wire conductivity shall be tested prior to use.

j. Conductive warning tape may not be utilized in lieu of tracer wire.

2. Global positioning system data shall be recorded with the municipality where the non−metallic pipe is installed.

3. Another equally−effective means acceptable to the department shall be employed to mark the location of the non−metallic pipe.

(12) PRIVATE INTERCEPTOR MAIN SEWERS. (a) The connection of a private interceptor main sewer to a public sewer shall be in accordance with the conditions of approval for the public sewer granted by the department of natural resources under s. 281.41, Stats.

(b) Private interceptor main sewers which discharge to a municipal treatment facility shall be designed in accordance with the appropriate water quality management plan.

(c) All private interceptor main sewers shall be tested in accordance with s. SPS 382.21.

(d) Private interceptor main sewers 6″ or less in diameter shall be installed in accordance with the criteria for building sewers specified in sub. (11) (b) and (c) and (d) and (e).

(e) Private interceptor main sewers 8″ or larger in diameter shall be:

1. Provided with frost protection in accordance with sub. (11) (c); and

2. Installed in accordance with the municipal sewer criteria specified in s. NR 110.13.

(f) No private interceptor main sewer may pass through or under a building to serve another building, unless one of the following conditions are met:

1. The private interceptor main sewer serves farm buildings, farm houses, or both which are located on one property.

2. The private interceptor main sewer serves buildings that are located on one property and a document, which indicates the piping and distribution arrangement for the property and buildings, shall be recorded with the register of deeds no later than 90 days after installation.

(13) LOCATION OF DRAIN PIPING. (a) Drain piping located below the ceilings of areas where food, ice or potable liquids are prepared, handled, stored or displayed shall be installed with the least number of joints and shall be installed in accordance with subds. 1. to 5.

1. All pipe openings through floors shall be provided with sleeves bonded to the floor construction and protruding not less than one inch above the top of the finish floor with the space between sleeve and the piping sealed.

2. Plumbing fixtures, except bathtubs and showers, shall be of the wall mounted type. Bathtubs shall have waste and overflow connections made above the floor and piped to a trap below the floor.

3. Floor and shower drains installed shall be equipped with integral seepage pans.

4. Cleanouts for piping shall be extended through the floor construction above.

5. Piping subject to operation at temperatures that will form condensation on the exterior of the pipe shall be thermally insulated.

(b) Where drain piping is located in ceilings of areas where food, ice or potable liquids are prepared, handled stored or displayed, the ceilings shall be of the removable type, or shall be provided with access panels in order to provide an access for inspection of the piping.

(c) Exposed drain piping shall not be located over a pool, surge tank or an open filter for a pool.

History: Cr. Register, February, 1985, No. 350, eff. 3−1−85; am. Table 82.30−1, (8) (a), (9) (c) (intro.) and 3., and (10) (b) 3. b., r. and recr. (4) (d) 2., Table 82.30−4, (10) (a) 2. b., (11) (intro.) and (f) 2., cr. (8) (a) 1. to 3. and (9) (d), r. (9) (c) 4., renum. (9) (c) 5. to be 4. and am., Register, May, 1988, No. 389, eff. 6−1−88; r. and recr. (4) (d), am. Table 82.30−3 and 82.30−7, r. (11) (intro.), renum. (11) (a) to (f) to be (b) to (g), cr. (11) (a) and (12) (f), Register, August, 1991, No. 428, eff. 9−1−91; am. Table 82.30−1, Register, April, 1992, No. 436, eff. 5−1−92; am. (7) (a) and (b), (11) (c) 1. a., (12) (e) 1. and Table 82.30−1, cr. (10) (a) 5., r. (11) (b) 1. b., renum. (11) (b) 1. c. to be (11) (b) 1. b., Register, February, 1994, No. 458, eff. 3−1−94; reprinted to restore dropped copy in (10) (b) 3. b., Register, July, 1994, No. 463; corrections in (11) (f) and (12) (g) made under s. 13.93 (2m) (b) 7., Stats., Register, April, 1998, No. 508; am. (11) (g) 2., Register, April, 2000, No. 532, eff. 7−1−00; CR 02−002: am. (4) (d) 5., (5) (b) 2. b., (c) 2., (10) (a) 2., (b) 4. b., (11) (b) 1. a., (c) 2. a. to c., 3. (intro.), (g) 2., (12) (f) (intro.) and 1., and Tables 82.30−1, 2, 3, 5 and 6, cr. (10) (b) 2. d., (c), (d), (11) (b) 3. b. and (c) 2. e., r. and recr. (11) (a) 2., (d), and (12) (f) 2., renum. (11) (b) 3., (c) 3. b. and c. to be (11) (b) 3. a., (c) 3. c. and d., Register April 2003 No. 568, eff. 5−1−03; CR 04−035: r. (3) (b) 32. a., am. Table 82.30−1 Register November 2004 No. 587, eff. 12−1−04; CR 07−069: cr. (11) (h) Register February 2008 No. 626, eff. 3−1−08; CR 08−055: am. (3), (6) (a) 2., (b) 1. to 3., (10) (a) 1., Tables 82.30−1 and 82.30−3, r. (4) (b), renum. (4) (c) to (e) and (11) (h) 1. g. to i. to be (4) (b) to (d), and (11) (h) 1. h. to j., r. and recr. (6) (b) 4., 5., (11) (e) 2., 3., (f) 2. and Table 82.30−2, cr. (11) (h) 1. g. Register February 2009 No. 638, eff. 3−1−09; correction in (6) (a) made under s. 13.92 (4) (b) 1., Stats., Register February 2009 No. 638; CR 10−064: am. (6) (a) 2., (b) (intro.), 5. a., Table 82.30−2, cr. (6) (c) Register December 2010 No. 660, eff. 1−1−11; **correction in (2), (3) (a) 1., 2., (4) (a) 1., (c) 4., (5) (b) 1., 2. a., (c) 1., (6) (a) 2., (b) 5. a., b., (c), (8) (a), (9) (d), (10) (a) 3., 4., (d) 1. b., (11) (c) 2. d., 3. a., b., c., (g) 2., (h) 1. f., (12) (c), Table 328.30−1, Table 328.30−2 made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 382.31 Vents and venting systems. (1) SCOPE. The provisions of this section set forth the requirements for the design and the installation of vents and venting systems.

(2) MATERIALS. All vents and venting systems shall be constructed of approved materials in accordance with ch. SPS 384.

(3) GENERAL. (a) *Vents.* Every trap and trapped plumbing fixture shall be provided with an individual vent, except as otherwise permitted in this chapter. Vents and venting systems shall be designed and installed so that the water seal of a trap shall be subject to a maximum pneumatic pressure differential equal to one inch of water column.

(b) *Main stack.* Each gravity−flow sanitary building sewer shall be served by at least one stack which extends from a building drain to a vent terminal or vent header. The stack shall be not less than 3″ in diameter from the building drain to the vent terminal or vent header.

(4) VENT STACKS AND STACK VENTS. (a) *Where required.* A vent stack and a stack vent shall be installed to serve any drain stacks of 5 or more branch intervals.

(b) *Installation.* 1. The connection of the vent stack to a drain stack shall be at or below the lowest branch drain connection to the drain stack. The connection to the drain stack shall be by means of a wye pattern fitting installed in a vertical portion of the stack.

2. A vent stack and a stack vent shall:

a. Extend to a vent terminal in accordance with sub. (16);

b. Connect to a vent stack which extends to a vent terminal; or

c. Connect to a stack vent at least 6″ above the flood level rim of the highest fixture discharging into a drain stack.

3. Vent stacks and stack vents may connect into a common vent header and then shall extend to a vent terminal.

4. The connection of a vent stack with another vent may not be less than 38″ above the next higher floor level where the plumbing fixtures are vented, but in no case lower than 2″ above the elevation of the highest flood level rim of any fixture served by the vent.

Note: See Appendix for further explanatory material.

(5) RELIEF AND YOKE VENTS FOR STACK OFFSETS. (a) *Vents serving offsets of 30 to 45º in drain stacks.* 1. Except as permitted in subd. 2., where a horizontal branch connects to a drain stack within 2 feet above or below an offset with a change of direction of 30 to 45º from the vertical and the offset is located below 5 or more branch intervals, the offset shall be vented in accordance with par. (b) 1. to 3.

2. Where the drain stack and offset are sized as building drain as per Table 382.30–3, the vents serving the offset of 30 to 45° in a drain stack are not required.

(b) *Vents serving offsets of more than 45º in drain stacks.* Offsets of more than 45º in drain stacks shall be vented where 5 or more branch intervals are located above the offset. The offset shall be vented by venting the upper and lower section of the stack.

1. 'Upper section.' The upper section of the stack shall be vented as a separate stack with a vent stack connection installed in accordance with sub. (4). The offset shall be considered the base of the stack.

2. 'Vent connection above offset.' The vent stack shall connect with a wye pattern fitting above the stack offset and at or below the lowest drain branch above the offset.

3. 'Lower section.' The lower section of the stack shall be vented by a yoke vent connecting below the offset above or at the next lower horizontal branch.

a. Except as provided in subd. 3. b., the connection of the yoke vent to the drain stack shall be by means of a wye pattern fitting.

b. The yoke vent connection may be a vertical extension of the stack.

c. The connection of the yoke vent to another vent shall not be less than 38 inches above the next higher floor level where plumbing fixtures are installed that discharge into the drain stack.

(6) RELIEF VENTS FOR STACKS OF MORE THAN 10 BRANCH INTERVALS. (a) Drain stacks of more than 10 branch intervals shall be provided with a relief vent at each tenth interval installed.

(b) The lower end of the relief vent required in par. (a) shall connect to the stack by use of a wye pattern fitting below the horizontal branch serving that floor.

(c) The upper end of the relief vent required in par. (a) shall connect to the vent stack not less than 38 inches above the next higher floor level where plumbing fixtures are installed that discharge into the drain stack.

(7) RELIEF VENTS FOR BUILDING DRAINS. A building drain with a change in elevation of 12 feet or more and at an angle of 45° or more from the horizontal shall be provided with a relief vent.

(a) The connection of the relief vent to the building drain shall be by means of a wye pattern fitting installed within 2 feet upstream of the top of the change in elevation.

(b) The connection of the relief vent to another vent shall be not less than 38″ above the next higher floor level where plumbing fixtures are installed that discharge through the building drain.

Note: See Appendix for further explanatory material.

(8) VENTS FOR SANITARY SUMPS. (a) *Interior sanitary sumps.* Sanitary sumps shall be provided with a vent connecting either to the sump above the drain inlet or to the drain inlet within 12″ of the sump.

(b) *Exterior sanitary sumps.* Sanitary sumps shall be provided with a vent that terminates in accordance with sub. (16) (h).

(9) FIXTURE VENTS. (a) *Developed length between vent and trap.* Each fixture trap shall be protected with a vent located in accordance with the provisions of subds. 1. and 2.

1. Each fixture trap which is not an integral part of the fixture shall be protected with a vent so located that the developed length of the fixture drain piping from the trap weir to the vent connection is within the limits set forth in Table 382.31−1.

2. Each fixture trap which is an integral part of the fixture shall be protected with a vent so located that the developed length of the fixture drain piping from fixture outlet to the vent connection is within the limits set forth in Table 382.31−1. For a floor outlet water closet or similar fixture, the point where the fixture drain piping turns horizontal shall be considered as the fixture outlet.

(b) *Minimum distance.* A vent shall not connect to a fixture drain within the distance equal to 2 diameters of the drain piping from the weir of a trap.

Note: See Appendix for further explanatory material.

Table 382.31−1

Maximum Developed Length Between Vent and Trap (in feet)

Diameter of Fixture Drain[a] (inches)	Vent Connecting to Horizontal Drain Piping			Vent Connecting to Vertical Drain Piping					
				by means of a Sanitary Tee Fitting			by means of a Wye Pattern Fitting[b]		
	Pitch of Fixture Drain (inch per foot)			Pitch of Fixture Drain (inch per foot)			Pitch of Fixture Drain (inch per foot)		
	1/8	1/4	1/2	1/8	1/4	1/2	1/8	1/4	1/2
1 1/4	NP[c]	5.0	2.5	NP	3.5	2.0	NP	1.5	1.0
1 1/2	NP	6.0	3.0	NP	5.0	3.0	NP	4.0	2.0
2	NP	8.0	4.0	NP	6.0	4.0	NP	4.5	4.0
3	24	12.0	6.0	10.0	8.0	6.0	8.0	6.0	6.0
4[d]	32	16.0	8.0	12.0	10.0	8.0	10.0	8.0	8.0

[a] Diameters to be selected on the basis of the smallest drain pipe installed downstream from the trap serving a particular fixture.
[b] The wye pattern fitting refers to a tee−wye fitting, a combination wye and eighth bend fitting or a wye and eighth bend combination of fittings with no more than one inch between the wye fitting and eighth bend fitting.
[c] NP means Not Permitted.
[d] The maximum developed length for fixture drains larger than 4 inches in diameter shall be approved by the department.

(10) CIRCUIT VENTING. In lieu of providing individual vents, a horizontal drain to which at least 2 but not more than 8 wall outlet fixtures or at least 2 but not more than 8 floor outlet fixtures, other than blowout type fixtures and wall−outlet carrier type water closets, are connected to the same horizontal branch drain, may be vented by a circuit vent in accordance with pars. (a) to (e).

(a) The circuit vent shall connect to the horizontal drain at a point between the 2 most upstream fixtures.

(b) 1. A circuit vented horizontal drain into which 4 or more fixtures discharge shall be provided with a relief vent. The relief vent shall connect to the circuit vented horizontal drain downstream of the most downstream fixture drain which is vented by the circuit vent and upstream of any other drain connections.

2. Two circuit vented horizontal drains serving a total of 8 fixtures, 4 on each branch, shall be provided with at least one relief vent, unless the horizontal drains connect to a drain stack with no other drain connections located above the circuit vented horizontal drains. One relief vent may serve both horizontal drains, if installed downstream of the point where the 2 horizontal drains are joined.

Note: See Appendix for further explanatory material.

(c) A horizontal drain served by a circuit vent may not diminish in size from the most downstream fixture drain connection vented by the circuit vented drain to the circuit vent connection. Where a relief vent is installed, the horizontal drain served by the circuit vent shall not diminish in size from the relief vent connection to the circuit vent connection.

(d) Fixture drains served by a circuit vent shall conform to the provisions of sub. (9). The connection of the fixture drain to the branch drain served by the circuit vent shall be considered as the vent connection.

(e) Additional wall outlet fixtures with a drainage fixture unit value of one or less which are served by individual vents or common vents may discharge into a horizontal drain served by a circuit vent.

(11) COMMON VENTS. In lieu of providing individual vents, fixtures may be common vented in accordance with pars. (a) and (b).

(a) *Vertical drains.* A common vent may serve a maximum of 2 fixtures where both fixture drains connect to a vertical drain at the same elevation. Where this connection is by means of a sanitary tee fitting with a side inlet, the centerline of the side inlet opening may not be below the centerline of the larger opening. The drain connection of a blowout type fixture or a kitchen sink served by a common vent may not be by means of a double sanitary tee fitting.

(b) *Horizontal branches.* The fixture drains from 2 wall−outlet fixtures, each with a drainage fixture unit value of one or less, or the fixture drains from 2 traps serving a kitchen sink with or with-

out a dishwasher may connect to a horizontal branch without individual vents provided a common vent connects to the branch drain downstream of both fixture drains. Both fixture drains shall be of the same diameter. The developed length of the drain from the vent to the farthest trap shall conform to sub. (9).

Note: See Appendix for further explanatory material.

(12) RETURN VENTS. Plumbing fixtures may be vented in accordance with pars. (a) to (d).

(a) Wall outlet fixtures may be vented by extending an individual vent, vertical wet vent or a common vent as high as possible under the fixture enclosure and returning the vent vertically downward and connecting the vent to the fixture drain or branch drain by means of a wye pattern fitting.

(b) Horizontal vent piping shall connect to the vertical section of the fixture vent and extend to a point where it can extend vertically to a vent terminal in accordance with sub. (16) or connect to another vent in accordance with sub. (15).

(c) Drainage fittings shall be used on all sections of the vent pipe below the floor level and a minimum slope of ¼″ per foot to the drainage point shall be provided.

(d) Cleanouts shall be provided on the vent piping in accordance with s. SPS 382.35.

Note: See Appendix for further explanatory material.

(13) WET VENTING. In lieu of providing individual vents, fixtures may be wet vented in accordance with pars. (a) to (c).

(a) *Vertical wet vents.* 1. Where 2 wall outlet fixtures are located on the same floor level with their fixture drains connecting to the same vertical drain pipe at different elevations, the lower fixture drain may be wet vented in accordance with subd. 1. a. to e.

a. No other fixtures may discharge into the vertical drain pipe above or between the 2 wall outlet fixtures. Additional fixtures may discharge into the vertical drain pipe below the 2 wall outlet fixtures.

b. A branch vent shall connect to the vertical drain pipe immediately above the higher fixture drain connection.

c. The drain between the 2 fixtures shall be at least one pipe size larger than the upper fixture drain, but not smaller than 2″ in diameter.

d. Both fixture drains shall conform to sub. (9). The connection of the lower fixture drain to the vertical drain shall be considered as the vent connection.

e. The higher fixture drain may not serve a water closet.

Note: See Appendix for further explanatory material.

(b) *Horizontal wet vents.* A drain from a lavatory or lavatories which are either provided with individual vents or a common vent may serve as the wet vent for not more than 2 bathtubs or showers and not more than 2 water closets in accordance with subds. 1. to 7. No other fixtures may discharge into or be served by the wet vent.

1. All of the fixtures shall be located in nonpublic bathroom groups.

2. The lavatories and bathtubs or showers shall have a common horizontal drain with the drain for the lavatories serving as a wet vent for the bathtubs or showers.

3. Where 2 bathtubs or showers are served by the same wet vent, their fixture drains shall connect independently to the common horizontal drain downstream of the vertical drain serving the lavatory or lavatories.

4. Where 2 bathtubs or showers and 2 water closets are served by the same wet vent a relief vent shall be provided, unless the wet vented horizontal drain connects to a drain stack with no other drain connections located above the wet−vented horizontal drain. The relief vent shall connect to the horizontal drain at a point downstream of the fixture drains for the water closets and upstream of any other fixture drain connections.

5. One or 2 water closets may connect to the common horizontal drain with the drain from the lavatories and bathtubs or showers also serving as a wet vent for the water closets. Where 2 water closets are served by the same wet vent, their fixture drains shall connect independently to the common horizontal drain at the same point.

6. The wet vent shall be at least 2″ in diameter. No more than 4 drainage fixture units may discharge into a 2″ diameter wet vent.

7. A branch vent shall connect immediately above the highest fixture drain connection and shall be sized in accordance with sub. (14).

(c) *Other types of wet vents.* An individual vent serving a floor outlet fixture, a common vent serving floor outlet fixtures, a circuit vent, a relief vent serving a circuit vented drain or a relief vent serving a wet vented horizontal drain may serve as a wet vent in accordance with subds. 1. to 4.

1. No more than 2 wall outlet fixtures, each fixture with a drainage fixture unit value of one or less, may have their fixture drains connected into the individual vent, common vent, circuit vent or relief vent.

2. The wet vent shall be at least 2″ in diameter.

3. The branch vent to which the wet vent connects shall be sized in accordance with sub. (14). The branch vent may serve the wall outlet fixtures in lieu of individual vents or a common vent.

4. The fixtures discharging into the wet vent shall be located on the same floor level as the fixtures served by the wet vent.

Note: For explanatory material refer to Appendix A−382.31 (13).

(14) VENT SIZE. (a) *Stack vents and vent stacks.* Stack vent and vent stack pipe sizes shall be determined in accordance with Table 382.31−2 on the basis of developed length and the diameter of the drain stack at its base.

1. The developed length of the stack vent shall be measured along the vent pipe, from the highest drain branch connection to the vent terminal or to the connection to a vent header.

2. The developed length of the vent stack shall be measured along the vent pipe from the vent stack base connection to the vent terminal or to the connection to a vent header.

Note: See Appendix for further explanatory material.

(b) *Vent headers.* 1. Vent header pipe sizes shall be determined in accordance with Table 382.31−3 with the number of drainage fixture units being the sum of the fixture unit loads of the stacks vented through that portion of the header. The diameter of a vent header shall not be less than any vent connecting to it.

2. The developed length of the vent header shall be measured along the pipe from the most distant vent stack or stack vent base connection to the vent terminal.

Note: See Appendix for further explanatory material.

(c) *Branch vents.* Branch vent pipe sizes shall be determined in accordance with Table 382.31−3. The developed length of the branch vent shall be measured along the pipe from the furthest fixture drain served by the branch vent to the point where it connects to a vent pipe of a larger diameter or to a vent terminal.

Note: See Appendix for further explanatory material.

(d) *Individual vents.* Individual vent pipe sizes shall be determined in accordance with Table 382.31−3. The developed length of an individual vent shall be measured along the vent pipe from the fixture drain served by the vent to the point where it connects to a vent pipe of a larger diameter or to a vent terminal.

Note: See Appendix for further explanatory material.

(e) *Common vents.* Common vent pipe sizes shall be determined in accordance with Table 382.31−3. The developed length of a common vent shall be measured along the vent pipe from the drain served by the vent to the point where it connects to a vent pipe of a larger diameter or to the vent terminal.

The Wisconsin Administrative Code on this web site is current through the last published Wisconsin Register. See also Are the Codes on this Website Official?

Table 382.31−2

Size and Length of Vent Stacks and Stack Vents

Diameter of Drain Stack at Base (inches)	Maximum Developed Length of Vent (feet)									
	Diameter of Vent (inches)									
	$1^1/_4$	$1^1/_2$[a]	2	3	4	5	6	8	10	12
$1^1/_2$	50	150	NL[b]							
2	NP[c]	50	150	NL						
3		NP	50	400	NL					
4		NP	20	180	700	NL				
5			NP	50	200	700	NL			
6			NP	20	70	200	700	NL		
8				NP	25	60	250	800	NL	
10					NP	25	60	250	800	NL
12						NP	25	100	300	900

[a] Not more than 2 water closets or similar flush action type fixtures of 4 or more drainage fixture units.
[b] NL means No Limit.
[c] NP means Not Permitted.

Table 382.31−3

Minimum Diameters And Maximum Length Of Individual, Common, Branch And Circuit Vents And Vent Headers

Drainage Fixture Units (dfu)	Maximum Developed Length of Vent (feet)								
	Diameter of Vent (inches)								
	$1^1/_4$[a]	$1^1/_2$[b]	2	3	4	5	6	8	10
2	50	NL[c]							
4	40	200	NL						
8	NP[d]	150	250	NL					
10	NP	100	200	NL					
24	NP	50	150	NL					
42	NP	30	100	500	NL				
72		NP	50	400	NL				
240		NP	40	250	NL				
500		NP	20	180	700	NL			
1100			NP	50	200	700	NL		
1900			NP	20	70	200	700	NL	
3600				NP	25	60	250	800	NL
5600					NP	25	60	250	800

[a] No water closets permitted.
[b] Not more than 2 water closets or similar flush action type fixtures of 4 or more drainage fixture units.
[c] NL means No Limit.
[d] NP means Not Permitted.

(f) *Circuit vents.* Circuit vent pipe sizes shall be determined in accordance with Table 382.31−3. The developed length of the circuit vent shall be measured along the vent from the connection with the branch drain served by the vent to the point where it connects to a vent pipe of a larger diameter or to a vent terminal.

(g) *Relief vents.* Relief vents shall be sized in accordance with the provisions of subds. 1. to 3. The developed length of a relief vent shall be measured along the vent from the connection with the branch drain served by the vent to the point where it connects to a vent pipe of a larger diameter or to a vent terminal.

1. 'Circuit vented branch drain.' The diameter of a relief vent for a branch drain served by a circuit vent shall be at least one half the diameter of the branch drain. The maximum developed length shall be determined from Table 382.31−3 based on the number of drainage fixture units served by the vent.

2. 'Building drain.' The diameter of a relief vent serving a building drain, as required in sub. (7), shall be at least one half the diameter of the building drain. The maximum developed length shall be determined from Table 382.31−3 based on the number of drainage fixture units served by the vent.

3. 'Horizontal wet vent.' The diameter of a relief vent serving a horizontal wet vent shall be at least 1½″. The maximum developed length shall be determined from Table 382.31−3 based on the number of drainage fixture units served by the vent.

(h) *Yoke vents.* A yoke vent serving a drain stack shall be sized as a vent stack in accordance with par. (a).

(i) *Vents for sumps.* 1. a. Except as provided in subd. 1. b., the size of a vent for a sanitary pump with other than a pneumatic ejector, shall be determined in accordance with Table 382.31−4.

b. The size of a vent for a sanitary sump located outside with other than a pneumatic ejector shall be determined in accordance with Table 382.31−4, but shall not be less than 2″ in diameter.

2. The air pressure relief pipe from a pneumatic ejector shall not be connected to vent or vent system serving a sanitary drain system, storm drain system or chemical waste system.

a. The relief pipe shall be of a size to relieve the air pressure inside the ejector to atmospheric pressure, but shall not be less than 2″ in diameter where the ejector is located outside and $1^1/_4$″ in diameter for all other ejector locations.

b. The vent shall terminate in accordance with the provisions of sub. (16).

Table 382.31−4

Size and Length of Vents for Sanitary Sumps

Discharge Capacity of Ejector (gpm)	Maximum Developed Length of Vent[a] (feet)				
	Diameter of Vent (inches)				
	$1^1/_4$[d]	$1^1/_2$[d]	2	3	4
10	NL[b]				
20	270	NL			
40	72	160	NL		
60	31	75	270	NL	
80	16	41	150	NL	
100	10	25	97	NL	
150	NP[c]	10	44	370	NL
200		NP	20	210	NL
250		NP	10	132	NL
300		NP	10	88	380
400			NP	44	210
500			NP	24	130

[a] The developed length of the vent is measured along the pipe from the connection to the sump, to the point where it connects to a vent pipe of a larger diameter.
[b] NL means No Limit.
[c] NP means Not Permitted.
[d] Diameter not permitted for exterior sumps.

(j) *Vents for chemical basins.* The size of vents serving chemical dilution or neutralizing basins shall be determined in accordance with Table 382.31−3 and based upon the number of drainage fixture units discharging into the basins.

(15) VENT GRADES AND CONNECTIONS. (a) *Vent grade.* All vent and branch vent pipes shall be graded and connected so as to drain back to a drain pipe by means of gravity.

(b) *Installation.* Vents shall be installed in accordance with subds. 1. to 3.

1. Except for wet vent piping, the connection of a vent to horizontal drain piping shall be at a point above the horizontal center line of the drain piping.

2. Except as provided in subs. (12) and (17), vent piping serving a wall−outlet fixture may not offset horizontally less than 36″ above the floor, but in no case lower than the elevation of the highest flood level rim of any fixture served by the vent.

3. Vent piping may not connect to a branch vent less than 38″ above the floor, but in no case lower than 2″ above the elevation of the highest flood level rim of any fixture served by the vent.

Note: See Appendix for further explanatory material.

(16) VENT TERMINALS. All vents and vent systems shall terminate in the open air in accordance with this subsection.

(a) *Extension above roofs.* Extensions of vents through a roof shall terminate at least 8″ above the roof. Where the roof is to be used for any purpose other than weather protection, the vents shall extend at least 7 feet above the roof.

(b) *Waterproof flashings.* The penetration of a roof system by a vent shall be made watertight with an approved flashing.

(c) *Prohibited uses.* Vent terminals shall not be used as flag poles, support for antennas or other similar purposes.

(d) *Location of vent terminals.* 1. A vent shall not terminate under the overhang of a building.

2. All vent terminals shall be located:

a. At least 10 feet from an air intake;

b. At least 5 feet from a power exhaust vent;

c. At least 10 feet horizontally from or 2 feet above roof scuttles, doors and openable windows; and

d. At least 5 feet from or 2 inches above parapet walls.

3. Where a structure has an earth covered roof extending from surrounding grade, the vent extension shall run at least 7 feet above grade and terminate with an approved vent cap. The portion of vent pipe outside the structure shall be without joints, except one fitting may be installed where the pipe leaves the top or side of the structure.

(e) *Extension through wall.* Where approved by the department, a vent may terminate through an exterior wall. Such a vent shall terminate at least 10 feet horizontally from any lot line and shall terminate downward. The vent shall be screened and shall comply with par. (d).

(f) *Extensions outside buildings.* Drain or vent pipe extensions shall not be located or placed on the outside of an exterior wall of any new building, but shall be located inside the building.

(g) *Frost closure.* For protection against frost closure, each vent terminal shall be at least 2″ in diameter. Where it is necessary to increase the diameter of the vent, the change in diameter shall be made at least 6″ inside the building.

Note: See Appendix for further explanatory material.

(h) *Penetrations through grade.* Except when installation is in accordance with par. (d) 3., penetrations through grade shall terminate at least 12″ above finished grade and terminate with a vent cap or return bend.

(17) COMBINATION DRAIN AND VENT SYSTEMS. In lieu of providing individual vents, fixtures may be vented in accordance with pars. (a) to (c).

(a) *Stacks.* 1. A drain stack may serve as a combination drain and vent system for fixtures in accordance with subd. 1. a. to e.

a. The drain stack shall not serve more than 3 fixtures. Each fixture shall be located on a separate floor level.

b. The drain stack shall be limited to serving fixtures with a drainage fixture unit value of no greater than 2.0. A urinal may not discharge into the combination drain and vent portion of the stack. The largest drainage fixture unit value served by the stack shall determine the stack size as specified in Table 382.31−5.

c. The drain stack shall not be offset horizontally above the lowest fixture drain connection.

d. The developed length of any fixture drain from the trap weir to the drain stack shall not exceed the limits specified in Table 382.31−1.

e. The drain stack and its attendant vent shall be sized in accordance with Table 382.31−5.

Note: See Appendix for further explanatory material.

Table 382.31−5

Stack Sizing by DFU Value

Drainage Fixture Unit (dfu) Value	Size of Stack (inches)
0.5	$1^1/_2$
1.0	2
2.0	3

2. A drain stack may serve as a combination drain and vent system for a kitchen sink and a wall outlet fixture with a drainage fixture unit value of 2 or less in accordance with subd. 2. a. to d.

a. One kitchen sink within a dwelling unit, with or without a food waste grinder or dishwasher connection, shall connect to the

drain stack above the wall outlet fixture with a drainage fixture unit value of 2 or less. No other fixtures may connect to the drain stack.

b. The drain stack shall be at least 2 inches in diameter below the kitchen sink connection and it shall be at least 4 inches in diameter below the connection to the lower fixture.

c. In lieu of the minimum sizes as required in subd. 2. b., the entire stack below the kitchen sink connection may be 3 inches in diameter.

d. The drain stack shall not offset horizontally above the fixture drain connection for the lower fixture.

(b) *Building drains.* A building drain or a building subdrain may serve as a combination drain and vent system for floor drains and floor outlet fixtures in accordance with subds. 1. to 6.

1. A vent or drain at least 2 inches in diameter shall be connected upstream of any building drain branch or building subdrain branch.

2. No more than 2 water closets may connect to the building drain or building subdrain by means of building drain branches or building subdrain branches.

3. a. That portion of the building drain or building subdrain between the connection of the building drain branch or building subdrain branch and the vent or drain required in subd. 1. shall be at least one pipe size larger than the minimum size permitted in Table 382.30–3 based on the total drainage fixture unit load, but not less than 3 inches.

b. The vent or drain required in subd. 1. shall be at least one−half the diameter of that portion of the building drain or building subdrain which is vented by the vent or drain, but may not be less than 2 inches in diameter.

c. A vent serving a drain required in subd. 1., shall be at least one half the diameter of that portion of the building drain or building subdrain which is vented by the system, but may not be less than 2 inches in diameter.

4. The trap of a floor drain or a floor outlet fixture, except a water closet, connected to a building drain branch or building subdrain branch shall be at least 3″ in diameter.

5. A building drain branch or building subdrain branch may not connect to a building drain or building subdrain downstream from the base fitting of a drain stack 2″ or larger in diameter within the distance equal to 20 pipe diameters of the building drain or building subdrain.

6. The pitch and the developed length of the building drain branch or building subdrain branch may not exceed the limits specified in Table 382.31−1.

Note: See Appendix for further explanatory material.

(c) *Laboratory sink venting.* A horizontal drain may serve as a combination drain and vent system for island laboratory sinks in accordance with subds. 1. to 7.

1. A vent stack or a drain stack at least 2″ in diameter shall be connected upstream of any fixture drain vented by the combination drain and vent system.

2. a. That portion of the horizontal drain between the connection of fixture drain and the vent stack or drain stack required in subd. 1. shall be at least one pipe size larger than the minimum size permitted in Table 382.30−2 based on total drainage fixture unit load.

b. The vent stack or drain stack required in subd. 1. shall be at least one−half the diameter of that portion of the horizontal drain which is vented by the stack, but may not be less than 2″ in diameter.

c. A stack vent serving a drain stack required in subd. 1. shall be at least one half the diameter of that portion of the horizontal drain which is vented by the stack, but may not be less than 2″ in diameter.

3. All fixture drains vented by the horizontal drain shall be at least 3″ in diameter.

4. Fixture drains to be vented by the horizontal drain shall connect individually to the horizontal drain.

5. An individual vent or common vent shall be extended as high as possible under the sink enclosure and then returned vertically downward and connected to the horizontal drain. A cleanout shall be provided on the vent piping.

6. In lieu of connecting the vent to the horizontal drain which forms the combination drain and vent system, the vent may connect to a horizontal fixture drain vented by the combination drain and vent system. The pitch and developed length of the horizontal fixture drain shall not exceed the limits specified in Table 382.31−1.

7. Fixture drains to be vented by the horizontal drain shall not connect to a horizontal drain downstream from the base fitting of a drain stack 2″ or larger in diameter within the distance equal to 20 pipe diameters of the horizontal drain serving the stack.

Note: See Appendix for further explanatory material.

(18) PROHIBITED USES. A vent or vent system shall not be used for purposes other than the venting of the plumbing system.

(a) *Boiler blowoff basin vents.* Vent piping from boiler blowoff basins shall not be connected to a vent or vent system serving a sanitary drain system, storm drain system or chemical waste system.

(b) *Chemical waste vents.* Vent piping for chemical waste systems shall not be connected to a vent system serving a sanitary drain system or storm drain system.

(c) *Steam vents.* Vents serving steam operated sterilizers, cleansing or degreasing equipment, pressing machines or any other apparatus which normally discharges steam into the vent shall not be connected to a vent or a vent system serving a sanitary drain system, storm drain system or chemical waste system.

History: Cr. Register, February, 1985, No. 350, eff. 3−1−85; am. (11) (a), (17) (b) 3. b. and (c) 2. b., r. and recr. (11) (b), r. (13) (a) 2., cr. (17) (b) 3. c. and (c) 2. c., Register, May, 1988, No. 389, eff. 6−1−88; reprinted to correct (17) (c) 4., Register, February, 1991, No. 422; cr. (4) (b) 4. and (17) (a) l. f., r. and recr. (5) (c) l. c. and (17) (c) 4., am. (5) (c) 2. c., (10) (intro.), (b) 1., (11) (b), (17) (a) l. e. and (17) (b), Register, August, 1991, No. 428, eff. 9−1−91; am. (6) (c), (7) (b), (10) (intro.), (a), (b) 1., (e), (13) (a) 1. c., (c) (intro.), 1. and 4., r. (16) (h), Register, February, 1994, No. 458, eff. 3−1−94; CR 02−002: renum. (8) to be (8) (a) and am., cr. (8) (b), (14) (j) and (16) (h), am. (11) (a), (12) (intro.), (a), (13) (c) 1. (17) (a) 1. (intro.) to b., and Table 82.31−4, r. and recr. Table 82.31−5, Register April 2003 No. 568, eff. 5−1−03; CR 08−055: am. (4) (a), (10) (c), (13) (a) 1. e., (14) (g) 2., (17) (a) 1. e., (b) 1. and 3., r. and recr. (5) and (6), r. (17) (a) 1. f. Register February 2009 No. 638, eff. 3−1−09; correction in (17) (a) 1. (intro.) made under s. 13.92 (4) (b) 7., Stats., Register February 2009 No. 638; CR 10−064: am. (5) (a) 2., (6) (c), (17) (a) 2., r. (14) (g) 2., renum. (14) (g) 3. and 4. to be (14) (g) 2. and 3. Register December 2010 No. 660, eff. 1−1−11; correction in (14) (g) (intro.) made under s. 13.92 (4) (b) 7., Stats., Register December 2010 No. 660; **correction in (2), (5) (a) 2., (9) (a) 1., 2., (12) (d), (14) (a) (intro.), (b) 1., (c), (d), (e), (f), (g) 1., 2., 3., (i) 1. a., b., (j), (17) (a) 1. b., d., e., (b) 3. a., 6., (c) 2. a., 6. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 382.32 Traps and direct fixture connections.

(1) SCOPE. The provisions of this section set forth the requirements for the types and installation of traps and direct fixture connections.

(2) MATERIALS. All traps and fixture connections shall be of approved materials in accordance with ch. SPS 384.

(3) GENERAL. Each plumbing fixture, each compartment of a plumbing fixture and each floor drain shall be separately trapped by a water seal trap, except as provided in par. (a) or as otherwise permitted by this chapter. A fixture shall not be double trapped.

(a) *Trap exceptions.* The plumbing fixtures listed in subds. 1. to 3. shall not be required to be separately trapped:

1. Fixtures having integral traps;

2. Compartments of a combination plumbing fixture installed on one trap, provided:

a. No compartment is more than 6″ deeper than any other;

b. The distance between the compartments' waste outlets farthest apart does not exceed 30″; and

c. No compartment waste outlet is equipped with a food waste grinder.

3. Storm drains as provided in s. SPS 382.36 (12) (a).

(b) *Trap seals.* Each trap shall provide a liquid seal depth of not less than 2″ and not more than 4″, except as otherwise specified in this chapter.

(c) *Loss of trap seal.* A trap seal primer valve may be installed on a trap subject to high rates of evaporation.

1. A trap seal primer valve or other means of trap seal protection acceptable to the department shall be provided for a trap subject to seal loss due to evaporation.

Note: Liquids acceptable to use for reducing trap seal evaporation include mineral oil, vegetable oil, propylene glycol and glycerin.

2. Trap seal primer valves shall conform to ASSE 1018.

Note: A list of referenced standards is contained in ch. SPS 381.

(d) *Design.* Traps shall be self−scouring and shall not have interior partitions, except where such traps are integral with the fixture. Uniform diameter P−traps shall be considered self−scouring.

(e) *Size.* Traps shall be of diameters not less than those specified in Table 382.30−1 of s. SPS 382.30.

(f) *Prohibited traps.* The installation of the types of traps listed in subds. 1. to 6. shall be prohibited:

1. Bell traps;

2. Drum traps, except where specifically approved by the department;

3. S−traps which are not integral parts of fixtures;

4. Separate fixture traps which depend on interior partitions for the trap seal;

5. Traps which depend upon moving parts to maintain the trap seal; and

6. Traps which in case of defect would allow the passage of sewer air.

(4) INSTALLATION. (a) *Setting of traps.* All traps shall be rigidly supported and set true with respect to the water level and so located as to protect the water seals, and shall be protected from freezing and evaporation.

(b) *Distance from fixture drain outlets.* 1. 'Vertical distance.' Except as provided in subd. 1. a. to c., the vertical distance between the top of the fixture drain outlet and the horizontal center line of the trap outlet shall not exceed 15″.

a. The vertical distance between the top of the strainer of a floor drain or the opening of a standpipe receptor and the horizontal center line of the trap outlet shall not exceed 36″.

b. The vertical distance between the top of the fixture drain outlet of a pedestal fixture or a cuspidor and the horizontal center line of the trap outlet shall not exceed 60″.

c. The vertical distance between the water level in the bowl of a floor outlet water closet and the center line of the horizontal portion of the fixture drain shall not exceed 36″.

d. The vertical distance from the inlet to the horizontal centerline of the fixture drain for a campsite receptor, exterior storm drain inlet, or a receptor for a sanitary dump station may exceed 3 feet so as to permit the trap to be installed below the predicted depth of frost.

2. 'Horizontal distance.' Except as provided in subd. 2. a. and b., the horizontal distance between the vertical centerline of a fixture drain outlet and the vertical centerline of the trap inlet shall not exceed 15″.

a. The horizontal distance for a pedestal drinking fountain shall not exceed 24″.

b. The horizontal distance for an exterior sanitary area drain or a residential garage floor drain discharging through an interior trap shall not exceed 25 feet.

c. The minimum horizontal distance between the vertical centerline of the outlet from a floor−mounted water closet and a 3−inch double tee shall be 30 inches.

Note: See Appendix for further explanatory material.

(5) DIRECT FIXTURE DRAIN CONNECTION. Except as provided in s. SPS 382.33, all plumbing fixtures and appliances discharging wastes shall connect directly to a drain system.

(a) *Floor drains.* 1. Floor drains shall be so located as to be accessible for cleaning purposes.

2. A floor drain receiving the wash from garbage cans shall be at least 3″ in diameter.

(b) *Kitchen sinks.* Horizontal drain piping serving a kitchen sink trap shall not connect to vertical drain piping by means of a double sanitary tee.

(c) *Water closets.* A water closet shall discharge through a drain pipe or fitting with a minimum diameter of 3″.

1. A floor mounted wall outlet water closet shall connect to a 4 inch or 4 × 3 inch closet collar fitting or to a horizontal or vertical carrier type fitting.

2. A floor outlet water closet shall connect to a 4 inch or 4 × 3 inch closet collar fitting. A 4 × 3 inch closet bend fitting may be installed where a 4 inch closet collar fitting is used.

3. A wall mounted wall outlet water closet shall connect to a horizontal or vertical carrier type fitting.

4. Two water closets discharging to a vertical drain from opposite sides by means of the same fitting shall be installed in accordance with subd. 4. a. and b.

a. Where the vertical drain is 3″ in diameter, the fitting for floor outlet water closets shall be a 3 inch double wye pattern fitting.

b. Where the water closets are wall outlet types the fitting shall be a double wye pattern fitting or a carrier−type fitting.

(d) *Blowout−type fixtures.* Blowout−type plumbing fixtures shall be installed in accordance with the approval of the department.

History: Cr. Register, February, 1985, No. 350, eff. 3−1−85; am. (4) (a), cr. (5) (intro.) and (d), Register, May, 1988, No. 389, eff. 6−1−88; am. (4) (b) 1. b., Register, April, 2000, No. 532, eff. 7−1−00; CR 02−002: r. and recr. (3) (c) 1. and (4) (b) 2., am. (4) (b) 1. b., cr. (4) (b) 1. d., Register April 2003 No. 568, eff. 5−1−03; CR 02−129: am. (3) (intro.) Register January 2004 No. 577, eff. 2−1−04; CR 04−035: am. (3) (a) 3. Register November 2004 No. 587, eff. 12−1−04; CR 08−055: cr. (4) (b) 2. c. Register February 2009 No. 638, eff. 3−1−09; **correction in (2), (3) (a) 3., (e), (5) (intro.) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 382.33 Indirect and local waste piping. (1) SCOPE. (a) The provisions of this section set forth the requirements for the installation of indirect waste piping and local waste piping.

(b) Indirect waste piping and local waste piping draining the fixtures, appliances and devices having a public health concern, including but not limited to those listed in Table 382.33−1, shall be considered as plumbing and shall comply with the provisions of this section.

(2) MATERIALS. Indirect waste piping more than 30″ in length and all local waste piping shall be of approved materials in accordance with ch. SPS 384.

(3) SIZE. Except as provided in pars. (a) and (b), indirect waste piping more than 30″ in length and all local waste piping shall be sized in accordance with s. SPS 382.30.

(a) Indirect or local waste piping not exceeding 20 feet in length for refrigerated food display cases may not be less than one inch in diameter.

(b) Indirect waste piping, attached to an appliance, appurtenance or equipment through which pressurized waste is discharged, shall be sized in accordance with specifications of the manufacturer of the appliance, appurtenance or equipment.

Table 382.33−1

Types of Fixtures, Appliances and Devices of a Public Health Concern

Refrigerated food storage rooms and compartments
Refrigerated food display cases
Ice compartments
Vending machines
Steam tables and kettles
Food preparation sinks
Potato peelers
Egg boilers
Boiler blowoff basin outlet drains
Coffee makers and urns
Food processing equipment
Baptismal founts
Clothes washers and extractors
Dishwashers
Stills
Sterilizers
Bar and soda fountains
Boiler blowoff basin outlet drains

(4) INSTALLATION. Indirect waste piping and local waste piping shall be so installed as to permit access for flushing and cleaning.

(5) TRAPS. (a) *Indirect waste piping.* 1. Gravity flow indirect waste piping more than 30″ in length shall be provided with a trap in accordance with s. SPS 382.32 (4), except indirect waste piping draining a sterilizer shall not be trapped.

2. All indirect waste piping draining a refrigerated food storage room, compartment or display case shall be provided with a trap in accordance with s. SPS 382.32 (4).

(b) *Local waste piping.* Local waste piping handling sanitary wastes and more than 30″ in length shall be provided with a trap in accordance with s. SPS 382.32 (4).

(6) MAXIMUM LENGTH. Indirect waste piping and local waste piping handling sanitary wastes shall not exceed 30 feet in length horizontally nor 15 feet in length vertically.

Note: See Appendix for further explanatory material.

(7) AIR-GAPS AND AIR-BREAKS. All indirect waste piping and all local waste piping shall discharge by means of an air−gap or air−break into a receptor.

(a) *Air−gap installation*. The installation of an air gap shall conform to any of the following requirements:

1. The distance of an air gap shall comply with one of the following:

a. The distance of an air gap serving indirect waste piping one inch or less in diameter and a receptor shall be at least twice the diameter of the indirect waste piping.

b. The distance of an air gap between indirect waste piping larger than one inch in diameter and a receptor shall not be less than 2 inches.

2. The installation of all air−gap fittings shall comply with ASME A112.1.3.

3. The installation of a residential dishwashing machine manufactured air gap shall comply with ASSE 1021.

(b) *Air–break installation.* The air−break between indirect waste piping or local waste piping and the receptor shall be accomplished by extending the indirect waste piping or local waste piping below the flood level rim of the receptor and terminating at an elevation above the trap outlet.

Note: See Appendix for further explanatory material.

(8) RECEPTORS. A receptor receiving the discharge from indirect waste piping or local waste piping shall be of a shape and capacity as to prevent splashing or flooding. Receptors shall be installed in accordance with this subsection and shall be accessible.

(a) *Waste sinks and standpipes.* A waste sink or a standpipe serving as a receptor shall have its rim at least one inch above the floor.

(b) *Floor sinks.* A floor sink serving as a receptor shall be equipped with a removable metal basket over which the indirect waste piping or local waste piping is to discharge, or the floor sink shall be equipped with a dome strainer. Indirect waste piping or local waste piping shall not discharge through a traffic grate, but shall terminate over an ungrated portion of the floor sink.

(c) *Local waste piping.* Local waste piping may not receive discharge from another local waste pipe.

(d) *Other receptors.* A plumbing fixture may not be used as a receptor for indirect or local waste piping, except as provided in subds. 1. to 7.

1. The indirect waste piping of a portable dishwasher or water treatment device serving one or 2 outlets may discharge into a kitchen sink of a dwelling unit or to a branch tail piece serving a kitchen sink.

2. The indirect waste piping of an automatic clothes washer or water treatment device may discharge into a laundry tray.

3. The indirect or local waste piping serving a cross connection control device or assembly, water treatment device, air conditioner, humidifier or furnace condensate may discharge into a branch tailpiece serving a laundry tray.

4. The local waste piping serving a water heater temperature and pressure relief valve, water treatment device, cross connection control device or assembly, humidifier, sterilizer, or a furnace or air conditioner may discharge into the riser of a floor drain when installed in accordance with sub. (7) (b).

5. The indirect or local waste piping serving a water heater temperature and pressure relief valve, water treatment device, cross connection control device or assembly, or a furnace or air conditioner may discharge to a floor served by a floor drain so as not to create a health or safety hazard.

6. The indirect or local waste piping serving a water heater temperature and pressure relief valve or water treatment device may discharge through the cover of a clear water sump so as not to adversely affect floats by means of a fixed air gap installed in accordance with subs. (7) (a) 2. and (8).

7. The indirect waste piping serving a dental mold grinder may discharge into the riser or a trap serving a laboratory sink that is provided with a plaster trap and is installed within 3 feet of the mold grinder.

Note: See Appendix A−382.33 (8) (a) to (d) for further explanatory material.

(9) INDIRECT WASTE PIPING REQUIRED. (a) *Boilers, pressure tanks and relief valves.* Boilers, pressure tanks, relief valves and similar equipment discharging to a drain system shall be by means of an air−gap.

1. Steam pipes shall not connect or discharge to any part of a plumbing system.

2. a. Except as provided in subd. 2. b., wastewater more than 160° F in temperature shall be discharged by means of indirect waste to the plumbing system.

b. Steam condensate blow down shall be cooled to 160°F in temperature prior to discharging to a plumbing system.

(b) *Clear water.* When discharging to a plumbing system, all clear water shall discharge by means of an air−gap.

(c) *Clothes washers.* 1. 'Residential types.' Residential−type clothes washers shall discharge into the sanitary drain system by means of an air−break.

a. A standpipe receptor may not extend more than 36 inches nor less than 18 inches above the centerline of the trap outlet.

b. A standpipe receptor shall terminate at least 26 inches but not more than 48 inches above the floor on which the clothes washer is located.

2. 'Self−service laundries.' Pumped−discharge automatic clothes washing equipment in launderettes, laundromats and self−service laundry establishments shall have the wastes discharge to a drain system by means of standpipes. The standpipes shall be installed in accordance with subd. 1.

a. The maximum number of washers which may be connected to a trap shall be in accordance with Table 382.33−2.

b. Washer wastes shall not be discharged to gutters, troughs, local waste piping, indirect waste manifold or other similar connections.

3. 'Commercial.' Gravity discharge−type clothes washing equipment shall discharge by means of an air−break or by other approved methods into a floor receptor, trench or trough.

a. The receptor shall be sized to hold one full simultaneous discharge load from every machine draining into the receptor.

b. The size of the receptor drain shall be determined by the manufacturer's discharge flow rate and the frequency of discharge.

Note: See Appendix for further explanatory material.

c. All wastes from the washers shall flow through a Commercial laundry interceptor as specified in s. SPS 382.34.

Table 382.33−2
Washer Connections

Trap Diameter	Maximum Number of Washers
2 inches	1 machine
3 inches	3 machines
4 inches	4 machines

(d) *Dishwashing machines.* All dishwashing machines shall discharge to the sanitary drain system.

1. 'Residential type.' The indirect waste piping from a residential−type dishwashing machine shall not exceed a developed length of 10 feet. The indirect waste piping from a residential−type dishwashing machine shall be installed in accordance with one of the following methods:

a. Where an air−gap or air−break is located below the countertop, the indirect waste piping from the dishwashing machine shall discharge to a standpipe. The standpipe shall be at least 1 ½ inches in diameter and shall extend at least 15 inches above the trap weir.

b. Where an air−gap or air−break is located above the countertop, the indirect waste piping from the dishwashing machine shall discharge to local waste piping. The local waste piping shall connect to the kitchen sink branch tailpiece above the trap inlet, the standpipe or to the dishwashing machine connection of a food waste grinder. When the local waste piping discharges to a standpipe, the standpipe shall be at least 1 ½ inches in diameter and shall extend at least 15 inches above the trap weir. Where a hose is used for local waste piping, the developed length shall not exceed 18 inches.

2. 'Commercial'. Commercial dishwashing machines shall discharge into a sanitary drain system by means of an air−gap or air−break into a trapped and vented receptor. The indirect waste piping may not be more than 30 inches in length.

(e) *Drips and drain outlets.* Appliances, devices and apparatus not defined as plumbing fixtures which have drip or drain outlets, which discharge to the plumbing system, shall discharge into an approved receptor by means of an approved air−gap or air−break.

(f) *Elevator drains.* 1. All drains serving elevator pits shall discharge to the storm drain system as specified in s. SPS 382.36 (4).

2. Drains serving elevator pits shall not connect directly with the storm drain system by means of gravity flow piping.

3. A sump may not be located in an elevator machine room.

4. A drain serving an elevator pit that discharges to a sump shall have a submerged inlet constructed to maintain a minimum 6″ trap seal.

5. A sump located in an elevator pit may only receive storm or clear water waste from the elevator pit or the elevator machine room, or both.

Note: See Appendix for further explanatory material.

(g) *Food handling establishments.* Plumbing fixtures, devices and appurtenances installed in food handling establishments engaged in the storage, preparation, selling, serving or processing of food shall be installed in accordance with this paragraph.

1. 'Bar and soda fountain sinks.' Where a bar or soda fountain sink is so located that the trap for the sink cannot be vented as specified in s. SPS 382.31, the sink drain shall discharge to the sanitary drain system through indirect waste piping.

a. Where the indirect waste piping is not trapped, the wastes shall be discharged by means of an air−gap.

b. Where the indirect waste piping is trapped, the wastes shall be discharged by means of an air−gap or air−break.

2. 'Beer taps, coffee makers, glass fillers and soda dispensers.' The drip pan from a beer tap, coffee maker, glass filler, soda dispenser or similar equipment shall discharge to the sanitary drain system through indirect waste piping by means of an air−break or air−gap.

3. 'Novelty boxes, ice compartments and ice cream dipper wells.' Novelty boxes, ice compartments and ice cream dipper wells shall discharge to the sanitary drain system through indirect waste piping by means of an air−gap.

a. The indirect waste piping shall not exceed 30″ in length.

b. The indirect waste piping draining a novelty box or ice compartment may not discharge or connect to the indirect waste piping or local waste piping of any other fixture, appliance or device other than a novelty box or ice compartment.

4. 'Refrigerated food storage rooms, compartments and display cases.' Drains serving refrigerated food storage rooms, compartments or display cases shall discharge to the sanitary drain system through indirect waste piping. The indirect waste piping shall drain by gravity to a receptor by means of an air−gap or air−break. Where an air−break is installed, the flood level rim of the receptor shall be at least 2″ below the top of the fixture strainer or drain opening in the refrigerated room, compartment or display case.

5. 'Enclosed food processing equipment.' Coffee urns, egg boilers, potato peelers, steam kettles, steam tables, vending machines and similar types of enclosed food processing equipment shall be discharged to the sanitary drain system through indirect waste piping by means of an air−gap.

6. 'Food preparation.' Open culinary sink compartments for thawing or washing food shall discharge to the sanitary drain system through an independent connection by means of an air−gap. The fixture drain upstream of the air−gap shall not exceed a length of 30″.

Note: See Appendix for further explanatory material.

(h) *Sterilizers.* Appliances, devices or apparatus, such as stills, sterilizers and similar equipment requiring waste connections and used for sterile materials, shall discharge through indirect waste piping to the sanitary drain system by means of an air−gap.

Note: See s. SPS 382.50 regarding sterilizer wastes.

(i) *Cross connection control devices or assemblies.* Where a receptor is provided, the vent port discharge from cross connection control devices or assemblies shall discharge to the receptor by means of an air−gap.

(j) *Vacuum systems—central units.* Central vacuum units shall discharge by means of an air−gap or air break.

(k) *Swimming pools.* 1. The backwash and drain wastewater from a swimming pool, wading pool or whirlpool shall discharge in accordance with Table 382.38−1.

2. The discharge from deck drains serving indoor pools shall be directed to the sanitary sewer via an air−gap.

3. The discharge from deck drains serving outdoor pools shall be directed to the storm sewer by way of an air−gap or to grade.

4. The requirements for sewer connections as specified in ch. SPS 390 applies to all public swimming pools.

(10) WATER TREATMENT DEVICES. (a) The waste discharge of a water treatment device to the drain system shall be protected in accordance with s. SPS 382.41 with respect to cross connection control.

(b) The indirect waste piping or tubing from a water treatment device shall be of a material conforming to one or more of the standards listed in Tables 384.30−8 or 384.30−11.

Note: For appliances, devices and equipment not included in this section or other sections contact the department for information and proposed installation review.

History: Cr. Register, February, 1985, No. 350, eff. 3−1−85; r. and recr. Table 82.33−1 and (9) (g) 5., cr. (8) (c) 3., (9) (g) 6. and (k), Register, May, 1988, No. 389, eff. 6−1−88; r. and recr., (3), am. (9) (c) 1. a., (d) 2. and (g) 4., Register, August, 1991, No. 428, eff. 9−1−91**;** am. (8) (d) 1., 2. and (9) (g) 3. b., r. (9) (k), cr. (10), Register, February, 1994, No. 458, eff. 3−1−94; correction in (9) (i) 5., made under s. 13.93 (2m) (b) 7., Stats., Register, February, 1994, No. 458; r. and recr. (9) (f), Register, April, 1998, No. 508, eff. 5−1−98; correction in (9) (i) 5. made under s. 13.93 (2m) (b) 7., Stats., Register, April, 1998, No. 508; r. and recr. (9) (i), cr. Table 82.33−3, Register, December, 2000, No. 540, eff. 1−1−01; CR 02−002: am. (5) (a) 2., (7) (b), (9) (c) 1. b., (e), (g) 6., renum. (8) (a) 1., (9) (a) 2. and (10) to be (8) (a), (9) (a) 2. a. and (10) (a) and am. (9) (a) 2. a., r. (8) (a) 2., r. and recr. (8) (c), (d), (9) (b), (d) 1. and (i), cr. (9) (a) 2. b., (c) 1. c., and (10) (b) Register April 2003 No. 568, eff. 5−1−03; CR 02−129: am. (9) (c) 1. b., r. (9) (d) 3. and table 82.33−3, cr. (9) (k) Register January 2004 No. 577, eff. 2−1−04; CR 08−055: r. and recr. (7) (a), cr. (8) (d) 6. and 7., am. (9) (c) 1. a., b. and (f) 1., r. (9) (c) 1. c. Register February 2009 No. 638, eff. 3−1−09; correction in (8) (d) (intro.) made under s. 13.92 (4) (b) 7., Stats., Register February 2009 No. 638; CR 10−064: am. Table 82.33−2 Register December 2010 No. 660, eff. 1−1−11; **correction in (1) (b), (2), (3) (intro.), (5) (a) 1., 2., (b), (9) (c) 2. a., 3. c., (f) 1., (g) 1., (k) 1., 4., (10) (a), (b) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 382.34 Wastewater treatment and holding devices. (1) SCOPE. The provisions of this section set forth the requirements for design and installation of plumbing wastewater treatment and holding devices, appurtenances and systems, including but not limited to interceptors, catch basins, decontamination tanks and dilution and neutralizing basins.

(2) MATERIALS. All piping, devices and appliances for wastewater treatment and holding devices, appurtenances and systems shall be of approved materials in accordance with ch. SPS 384.

(3) GENERAL. Any deleterious waste material which is discharged into a plumbing system shall be directed to a wastewater treatment or holding device. The wastewater treatment or holding device shall be capable of separating, diluting or neutralizing the deleterious waste material to a degree that the wastewater is no longer deleterious. Wastewater treatment or holding devices that retain any waste materials shall be designed and installed to facilitate periodic removal or treatment, or both.

(a) *Treatment for reuse.* 1. Except as limited in subd. 2., graywater, storm water, clear water, blackwater and other wastewaters as approved by the department may be reused in conformance with s. SPS 382.70.

2. Except as provided in subd. 3., wastewater discharged from water closets or urinals shall not be reused for drinking water.

3. All treatment works permitted by the department of natural resources, or a POWTS which includes an in situ soil dispersal or treatment component may treat wastewater discharged from water closets or urinals for reuse.

(b) *Deleterious waste materials.* For the purpose of this subsection, deleterious waste materials include any waste material, other than that from dwelling units, which may:

1. Congeal, coagulate or accumulate in drains and sewers, thereby, creating stoppages or retarding the discharge flow;

2. Retard or interfere with municipal sewage treatment processes;

3. Pass through a treatment process and pollute the watercourse receiving the treatment effluent;

4. Create explosive, flammable, noxious, toxic or other hazardous mixtures of materials; or

5. Damage, destroy or deteriorate sewers or piping materials or structures.

Note: See ch. SPS 310 as to flammable and combustible liquids.

(c) *Private systems.* The special or industrial wastes from any plumbing system shall be treated, held or dispersed in compliance with the rules of the state agency having jurisdiction. The treatment, holding or dispersal system shall be installed so as not to endanger any water supply which is or may be used or which may create a nuisance, unsanitary conditions or water pollution.

(d) *Velocity control.* Interceptors, catch basins and other similar devices shall be designed, sized and installed so that flow rates shall be developed and maintained in a manner that solid and floating materials of a harmful, hazardous or deleterious nature will be collected in the interceptor for disposal.

(e) *Maintenance.* All devices installed for the purpose of intercepting, separating, collecting, holding or treating harmful, hazardous or deleterious materials in liquid or liquid−borne wastes shall be operated and cleaned of intercepted or collected materials or of any residual from treatment at such intervals which may be required to prevent their passage through the interceptor.

(f) *Service reassembly.* Any fixed orifice, vent or trap of an interceptor, catch basin or other similar device shall remain intact and shall not be removed or tampered with except for cleaning purposes. After service, all parts of the interceptor, collector or treatment device, such as baffles, weirs, orifice plates, channels, vents, traps, tops, and fastening bolts or screws shall be replaced in proper working position.

(g) *Location.* 1. Wastewater holding devices, interceptors, catch basins and other similar devices shall be accessible for service, maintenance, repair and inspection.

a. No wastewater holding device, interceptor, catch basin or similar device may be surrounded or covered as to render it inaccessible for service or inspection.

b. No wastewater holding device, interceptor, catch basin or similar device may have its top located more than 6 feet above the surrounding floor.

c. Enough space shall be provided to enable the removal of any interior parts of the wastewater holding device, interceptor, catch basin or similar device.

d. At least 18 inches of clear space shall be provided above the top of the wastewater holding device, interceptor, catch basin or similar device.

2. An exterior wastewater holding device, interceptor, catch basin or similar device shall not be located within 5 feet of a building or any portion of a building or swimming pool; 10 feet of water service; 2 feet of a lot line and 10 feet of a clearwater cistern.

3. An exterior wastewater holding device, interceptor, catch basin, or similar device shall not be located within 10 feet of the high water mark of a lake, stream, pond or flowage.

Note: The department of natural resources under chs. NR 811 and 812 may require additional setbacks. See Appendix for further explanatory material.

(h) *Disposition of retained materials.* Deleterious waste materials retained by a wastewater holding device, interceptor, catch basin or similar device shall not be introduced into any drain, sewer or natural body of water without approval of the state agency having jurisdiction.

(4) GARAGE FLOOR AREA WASTEWATER. (a) *Garages for public buildings and facilities.* 1. Where a drain will be installed to receive the wastewater from floor areas of public buildings and facilities on which self−propelled land, air or water vehicles can be driven, the wastewater shall discharge using one of the following methods:

a. In areas where vehicles will be serviced, the wastewater shall discharge through a garage catch basin or oil interceptor connected to a municipal sewer or holding tank approved to receive industrial wastewater.

b. In areas where vehicles will be driven or stored, the wastewater shall discharge through a floor drain equipped with a solid bottom sediment bucket, garage catch basin or oil interceptor.

2. Garage catch basins design shall conform to all of the following:

a. The holding area of the catch basin shall be watertight.

b. The catch basin shall have a minimum inside diameter of 36″.

c. The minimum depth of the basin shall be 24″ measured from the lowest portion of the trap on the outlet of the basin.

d. The outlet of the basin shall be at least 4″ in diameter and trapped with a water seal of at least 6″ and constructed on the interior or exterior of the basin. Where an external trap is provided, the trap shall be within 36″ of the basin.

e. Except as provided in subd. 5., the water line in the basin shall be at least 2″ below all horizontal drains discharging into the basin. Where an external trap is provided, the measurement point on the horizontal drain shall be upstream of the trap.

f. The basin shall be provided with a cover at least 23 inches square or 23 inches in diameter.

g. Gravity drains from fixtures serving garage floor areas located on different floors from the basin may discharge into the basin if the drain stack carrying the wastewater is located at a distance equal to at least 20 times the inside diameter of the horizontal piping upstream of the basin.

h. Catch basins with solid covers shall be vented in accordance with sub. (8) (c).

3. Drains with traps may connect to the garage catch basin under all of the following conditions:

a. The trap shall be a minimum of 3″ in diameter.

b. Except as provided in subd. 3. c., the developed length from all trap outlets to the basin shall not exceed the distance as specified in Table 382.31−1.

c. Where the maximum distance exceeds that as specified in Table 382.31−1, the trap shall be vented in accordance with s. SPS 382.31 (3) and the connection to the basin shall form a 6−inch trap seal. The trap seal may be constructed on either the interior or exterior of the basin, but within 36″ of the basin.

4. Drains without traps may discharge into a garage catch basin under all of the following conditions:

a. The fixture drain shall have a minimum 4−inch inside diameter.

b. The fixture drain shall be piped with a 6−inch water seal constructed either on the interior or exterior of the basin.

c. An exterior trap shall be constructed within 36″ of the basin.

d. The developed length of the fixture drain shall not exceed the distance equal to 24 times the diameter of the fixture drain.

e. Fixture drains shall individually discharge into a garage catch basin.

5. Pressurized drains from garage floor areas discharging to a garage catch basin shall conform to all of the following conditions:

a. The pressurized drain piping shall terminate inside the basin with a 6−inch submerged inlet. The termination shall be at least 12″ above the floor of the basin.

b. The pressurized equipment, devices and piping shall be designed and installed to produce a maximum velocity of 2 feet per second at the point of connection to the basin.

Note: Plans for garage floor discharge−holding tanks may require plan approval by the department of natural resources.

(b) *Garages for one− and 2−family dwellings.* 1. Floor drains serving garages for one− and 2−family dwellings shall be provided with a solid bottom sediment basket.

Note: See Appendix for further explanatory material.

2. a. Except as permitted in subd. 2. b., catch basins serving garages for one− and 2−family dwellings shall be designed and installed in accordance with par. (a) 2.

b. The minimum inside diameter of catch basins serving garages for one− and 2−family dwellings shall be 18 inches.

(c) *Grates for garage catch basins, floor drains and trenches.* A garage catch basin, floor drain and trench drain shall be provided with an approved, removable cast iron or steel grate of a thickness and strength for the anticipated loads. The grate shall have an available inlet area equal to at least the outlet drain for the catch basin, floor drain or trench drain.

(5) GREASE AND OIL TREATMENT. (a) All plumbing installations for occupancies, other than dwelling units, where grease, fats, oils or similar waste products of cooking or food are introduced into the drain system shall be provided with grease and oil treatment in accordance with this subsection.

(b) *General.* 1. 'Public sewers.' All new, altered or remodeled plumbing systems which discharge to public sewers shall be provided with one or more grease interceptors.

a. Where one or more exterior grease interceptors are provided all, and only, kitchen wastes shall be discharged to an exterior interceptor.

b. Except as required in subd. 1. c. or d., where one or more interior grease interceptors are provided the wastes from a food waste grinder, a sanitizing compartment of a sink or a rinse compartment of a sink, may bypass the interceptor or interceptors.

c. The wash compartment of a scullery sink shall discharge through a grease interceptor.

d. The pre−wash compartment not discharging through a garbage disposal shall discharge through a grease interceptor.

2. 'Private onsite wastewater treatment systems.' All new, altered or remodeled plumbing systems which discharge to private onsite wastewater treatment systems shall be provided with exterior grease interceptors.

a. Except as provided in subd. 2. b., only kitchen and food wastes shall be discharged to an exterior grease interceptor.

b. For remodeling, when it is not practicable to separate kitchen and toilet wastes, combined kitchen wastes and toilet wastes may be discharged directly to a private onsite wastewater treatment component tank or tanks which conform to par. (c). The required capacity of a grease interceptor shall be added to the required septic tank capacity as specified in ch. SPS 383.

c. For holding tank installations, the combined kitchen and toilet wastes may discharge directly to a holding tank where the location accepting the pumpage from the tank provides written acceptance of the combined waste to the department.

3. 'Existing installations.' The department may require the installation of any treatment device deemed necessary by the department for existing plumbing installations where the waterway of a drain system, sewer system or private onsite wastewater treatment system is reduced or filled due to grease.

(c) *Exterior grease interceptors.* Exterior grease interceptors shall receive the entire waste discharge from kitchens or food processing areas. All exterior interceptors shall be designed and constructed in accordance with this paragraph, so as to constitute an individual structure.

1. 'Design.' a. The liquid depth of the interceptor shall not be less than 42″ nor more than an average of 72″.

b. A rectangular interceptor tank shall have a minimum width of 36″ and a minimum length of 72″. The longest dimension of the tank shall be parallel to the direction of waste flow.

c. A horizontal−cylindrical interceptor tank shall have a minimum inside diameter of 52″ and a minimum length of 72″. The longest dimension of the tank shall be parallel to the direction of waste flow.

d. Vertical−cylindrical interceptor tanks shall have a minimum inside diameter of 72″.

e. Each prefabricated interceptor tank shall be clearly marked to indicate liquid capacity and the name and address or registered trademark of the manufacturer. The markings shall be impressed into or embossed onto the outside wall of the tank immediately

above the outlet opening. Each site−constructed concrete tank shall be clearly marked at the outlet opening to indicate the liquid capacity. The marking shall be impressed into or embossed onto the outside wall of the tank immediately above the outlet opening.

f. The inlet and outlet openings of interceptor tanks or tank compartments shall be provided with, open−end sanitary tee fittings or baffles, so designed and constructed as to distribute the flow and retain the grease in the tank or tank compartments. The sanitary tee fittings or baffles shall extend at least 6″ above the liquid level. At least 2″ of clear space shall be provided above the top of the sanitary tee fittings or baffles. The sanitary tee fitting or baffle at the inlet opening shall extend below the liquid level of the tank a distance equal to ⅓ of the total liquid depth. The sanitary tee fitting or baffle at the outlet opening shall extend below the liquid level of the tank a distance equal to ⅔ of the total liquid depth. The waterline in the interceptor shall be at least 2″ below the horizontal drain discharging to the interceptor.

g. Each compartment of an interceptor tank shall be provided with at least one manhole opening located over either the inlet or outlet opening. Additional manhole openings shall be provided such that no interior compartment wall of a tank is more than 4 feet from the edge of the manhole opening. The distance between manhole openings serving the same compartment shall not exceed 8 feet. Manhole openings shall be not less than 23″ in the least dimension. Manholes shall terminate at or above ground surface and be of approved materials. Steel tanks shall have a minimum 2″ collar for the manhole extensions permanently welded to the tank. The manhole extension on fiberglass tanks shall be of the same material as the tank and an integral part of the tank. The collar shall have a minimum height of 2″.

h. Manhole risers for interceptor tanks shall be provided with a substantial, fitted, watertight cover of concrete, steel, cast iron or other approved material. Manhole covers shall terminate at or above grade and shall have an approved locking device.

i. A minimum 4 × 6 inch permanent label shall be affixed to the manhole cover, identifying the interceptor tank with the words GREASE INTERCEPTOR. Where the tank acts as the septic tank and grease interceptor the label shall identify it as such. The wording used on the warning label shall be approved by the department, as part of the materials approval for the tank under ch. SPS 384.

j. An inlet or outlet opening which does not have a manhole opening as specified in subd. 1. g. shall be provided with an airtight inspection opening located over the inlet or outlet. The inspection opening shall be at least 4″ in diameter. The inspection opening shall terminate at or above grade.

Note: See Appendix for further explanatory material.

2. ‘Capacity and sizing.’ The minimum liquid capacity of a grease interceptor shall be determined in accordance with the provisions of this subdivision, except no grease interceptor may have a capacity of less than 1000 gallons if the interceptor is to discharge to a private onsite wastewater treatment system or less than 750 gallons if the interceptor is to discharge to a municipal sewer system and treatment facility.

a. The minimum capacity of a grease interceptor serving a restaurant with seating shall be equal to C, where

$$C = S \times H \times A$$

where, S = Number of seats, with each drive−in car service space counting as 3 seats and each drive−up service window counting as 60 seats.

H = Hours per day that meals are served, at least 6 hours but not more than 12 hours.

A = Appliance factor:

0.75 for a kitchen with no dishwashing machine and no food waste grinder.

1.0 for a kitchen with either a dishwashing machine or a food waste grinder.

1.25 for a kitchen with both a dishwashing machine and a food waste grinder.

b. The minimum capacity of a grease interceptor serving a dining hall, hospital, nursing home, school kitchen, church kitchen or a kitchen for carryout or delivery service shall be equal to C, where:

$$C = \frac{M \times G \times H}{2 \times P}$$

where, M = Meals served per day.

G = 3 gallons per meal served.

H = Hours per day that meals are served, at least 6 hours but not more than 12 hours.

P = Meal periods per day; 1, 2 or 3.

c. The minimum capacity of a grease interceptor as determined in subd. 2. a. or b. may be halved for establishments with all paper service, but may not be less than 1000 gallons if the interceptor is to discharge to a private sewage system or less than 750 gallons if the interceptor is to discharge to a municipal sewer system and treatment facility.

3. ‘Installation.’ a. Grease interceptor tanks may not be located within 5 feet of a building or any portion of the building or swimming pool; 10 feet of a water service; 2 feet of a lot line; 10 feet of a cistern or 10 feet of a reservoir or high water mark of a lake, stream, pond or flowage.

Note: The department of natural resources under chs. NR 811 and 812 may require additional setbacks. See Appendix for further explanatory material.

b. Where a grease interceptor tank is installed in groundwater, the tank shall be adequately anchored.

c. Grease interceptor tanks shall be installed on a bedding of at least 3″ in depth. The bedding material shall be sand, gravel, granite, limerock or other noncorrosive materials of a size that all will pass through a ¾″ sieve.

d. The backfill material for steel and fiberglass grease interceptor tanks shall be as specified in subd. 3. c. for bedding and shall be tamped into place. The backfill material for concrete grease interceptor tanks shall be soil material, of a size that will pass through a 4 inch screen and shall be tamped into place.

e. All joints on concrete risers and manhole covers for a grease interceptor shall be tongue and groove or shiplap type and sealed watertight using neat cement, mortar or bituminous compound. All joints on steel risers for a grease interceptor shall be welded or flanged and bolted and be watertight. All steel manhole extensions from a grease interceptor shall be bituminous coated inside and outside. All methods of attaching fiberglass risers for a grease interceptor shall be watertight and approved by the department.

Note: See Appendix A−382.30 (11) (d) for material reprinted from s. NR 812.08. Section NR 812.08 may have additional setback requirements to wells.

(d) *Interior grease interceptors*. 1. ‘Flow rating.’ An interior grease interceptor shall be capable of accommodating a flow of at least 15 gallons per minute, but not less than the manufacturer’s specifications.

2. ‘Flow rate related to connected capacity.’ Three−fourths of the total holding capacity in gallons of all fixtures and devices discharging to an interior grease interceptor, shall not exceed the value of the maximum flow rate which the interceptor can accommodate.

3. ‘Grease holding capacity as related to flow rate.’ The grease holding capacity in pounds shall not be less than double the value of the maximum flow rate which the interceptor can accommodate.

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4. 'Flow controls.' Where required by the manufacturer, devices which control the rate of flow through an interior grease intercept shall be installed.

a. The flow control devices shall be accessible for inspection, service and cleaning.

b. Flow controls shall be installed in the drain branch leading to each fixture and shall be so rated that the combined flow from all combinations of discharge will not develop either sufficient static or velocity head so the established flow rate of the interceptor can be exceeded.

Note: See Appendix for further explanatory material.

5. 'Flow control vents.' Orifice type flow controls for an interior grease interceptor shall be vented in accordance with s. SPS 382.31.

6. 'Prohibited locations and types.' No water−cooled grease interceptor may be installed. No grease interceptor may be located where the surrounding temperatures, under operating conditions, are less than 40º F.

7. A maximum of 12 inches of horizontal inlet pipe may be submerged.

(e) *Prohibited treatment.* The introduction of grease or fat emulsifiers into a grease interceptor shall be prohibited.

(6) AUTOMATIC CAR WASHES. The wastes of floor drains and drain inlets of automatic car washes shall discharge through an approved car wash interceptor.

(a) *Design.* Except as provided in subds. 1. and 2. and par. (b), car wash interceptors shall be constructed and installed in accordance with sub. (4) (a) 2.

1. The interceptor's outlet shall be submerged to form a trap with a water seal of at least 15″.

2. The bottom of the trap's water seal shall be at least 30″ above the bottom of the interceptor.

(b) *Capacity.* The minimum liquid capacity of the interceptor shall be based on the maximum flow rate of water through the interceptor in gallons per minute.

1. Between the waterline and the bottom of the trap seal of the outlet, the interceptor shall have a capacity value equal to at least 5 times the maximum flow rate.

2. Below the bottom of the trap seal of the outlet, the interceptor shall have a capacity value equal to at least 15 times the maximum flow rate.

Note: See Appendix for further explanatory material.

(c) *Hand−held car washing wands.* The wastes of floor drains and drain inlets serving 2 or more hand−held car washing wands shall discharge through an approved car wash interceptor. The wastes of one hand−held car washing wand may discharge to a garage catch basin.

(7) COMMERCIAL LAUNDRIES. Wastes from gravity dump−type clothes washing equipment shall be discharged through an approved laundry interceptor in accordance with this subsection.

(a) *Screening apparatus.* A laundry interceptor shall be equipped with a wire basket or other device which will prevent the passage of solids, ½″ or larger in diameter, string, buttons and other detrimental materials into the drain system.

(b) *Trench type interceptors.* A floor receptor, trench or trough as specified in s. SPS 382.33 (9) (c) 3., may serve as a laundry interceptor, if no oils or quantities of sand are discharged into it.

Note: See Appendix for further explanatory material.

(c) *In−line interceptor.* 1. In−line interceptors shall have a minimum inside diameter or horizontal dimension of 24″.

2. An in−line interceptor shall be provided with an air−tight cover.

3. An in−line interceptor shall be provided with a vent.

a. The vent shall extend from above the flow line to a vent terminal in accordance with s. SPS 382.31 (16) or shall be connected to the venting system serving the sanitary drain system.

b. The diameter of the vent shall be at least one−half of the diameter of the interceptor's outlet, but not less than 2″.

4. The outlet for an in−line interceptor shall be at least 4″ in diameter. The outlet shall be submerged to form a trap with a water seal of at least 12″. The bottom of the trap's water seal shall be at least 12″ above the bottom of the interceptor.

5. The waterline in an in−line interceptor shall be at least 2″ below the bottom of the inlet opening for the interceptor.

(8) OIL AND FLAMMABLE LIQUIDS. Oily and flammable wastewater that discharges to a building sewer shall be intercepted or treated by a means acceptable to the department.

(a) *Site−constructed interceptors.* Site−constructed interceptors shall be designed in accordance with the requirements in sub. (4) (a) 2.

(b) *Prefabricated oil interceptors and separators.* Prefabricated oil interceptors and separators shall be manufactured with adequate capacity for the anticipated load.

(c) *Venting.* Oil and flammable interceptors and separators shall be so designed to prevent the accumulation of explosive gases.

1. A covered interceptor or separator shall be provided with an individual vent of at least 3 inches in diameter. The vent shall extend from the top of the interceptor or separator or as high as possible, from the side of the interceptor or separator to a point at least 12 feet above grade.

2. The drain pipe to the interceptor or separator shall be provided with a fresh air inlet connected within 2 feet of the inlet of the interceptor or separator. The fresh air inlet shall terminate at least one foot above grade, but not less than 6 feet below the terminating elevation of the vent serving the interceptor or separator. The fresh air inlet shall be at least 3 inches in diameter.

Note: See Appendix for further explanatory material.

(9) BOTTLING ESTABLISHMENTS. Wastes containing glass of bottling establishments shall be discharged through an interceptor.

(10) DAIRY PRODUCT PROCESSING PLANTS. Dairy wastes from dairy product processing plants shall be discharged through an interceptor.

(11) MEAT PROCESSING PLANTS AND SLAUGHTERHOUSES. The wastes from meat processing areas, slaughtering rooms and meat dressing rooms shall be discharged through an approved interceptor to prevent the discharge of feathers, entrails, blood and other materials.

(12) SAND INTERCEPTORS. Sand interceptors and other similar interceptors for heavy solids shall be so designed and located as to be accessible for cleaning. The outlet for the interceptor shall be submerged to form a trap with a water seal of at least 12″.

(13) PLASTER AND HEAVY SOLIDS TRAP TYPE INTERCEPTORS. Plaster sinks shall be provided with plaster and heavy solids trap type interceptors.

(a) The interceptor shall be installed as the fixture trap.

(b) The drain piping between the sink and the interceptor shall not exceed a length of 36″.

Note: See Appendix for further explanatory material.

(14) CHEMICAL WASTE PIPING SYSTEMS. All chemical wastes having a pH level of less than 5.5 or more than 10.0 shall discharge to a holding tank for proper disposal or to a drain system in accordance with this subsection.

(a) *Chemical dilution and neutralizing basins.* 1. All chemical wastes discharging into a drain system shall be diluted, neutralized or treated to a pH level of 5.5 to 10.0 by passing through an approved dilution or neutralizing basin before discharging to a building sewer.

2. Dilution and neutralizing basins shall have the minimum retention capacities in accordance with one of the following requirements:

a. The minimum retention capacity shall be as specified in Table 382.34.

b. The minimum retention capacity shall be as per the manufacturer's specifications.

c. The minimum retention capacity for a quantity exceeding 150 sinks or for special uses or installations shall be approved by the department.

3. Where a sufficient supply of diluting water cannot be provided to a dilution or neutralizing basin, the basin shall be filled with marble or limestone chips of not less than one inch nor more than 3″ in diameter to the level of the basin's outlet.

4. Either the inlet or outlet of a dilution or neutralizing basin shall be submerged to form a trap with a water seal of at least 4″.

Table 382.34

Minimum Capacities for Dilution and Neutralizing Basins

Maximum Number of Sinks	Minimum Retention Capacity in Gallons
1	5
4	15
8	30
16	55
25	100
40	150
60	200
75	250
100	350
150	500

(b) *Vents.* Vents for chemical waste systems shall be sized and installed in accordance with all of the following:

1. Dilution and neutralizing basins with submerged inlets shall have a sanitary vent connected to the basin and a chemical waste vent connected to the inlet pipe. The pitch and the developed length of the drain between the submerged basin inlet and the chemical waste vent shall be in accordance with Table 382.31−1.

2. Dilution and neutralizing basins with submerged outlets shall have a chemical waste vent connected to the basin and a sanitary vent connected to the outlet pipe. The pitch and the developed length of the drain between the submerged basin outlet and the sanitary vent shall be in accordance with Table 382.31−1.

Note: See Appendix for further explanatory material.

3. The vents for a chemical waste basin shall be sized based on the number of drainage fixture units discharging into the basin and installed in accordance with s. SPS 382.31.

(15) SPECIAL WASTEWATER OR MIXED WASTEWATER TREATMENT OR CONTAINMENT DEVICES. Mixed wastewater treatment and containment devices, decontamination tanks or other special wastewater treatment devices shall discharge to a dispersal or treatment system in accordance with this section or as approved by the department.

Note: A sanitary permit may be required. See ch. SPS 383 for requirements relating to containment tank installation with no valved discharge.

(a) *Installation.* 1. Exterior containment devices or treatment systems for mixed wastewater, decontamination tanks and other special wastewater treatment devices shall not be located within 5 feet of a building or any portion of the building or swimming pool; 10 feet of a water service; 2 feet of a lot line; 10 feet of a clearwater cistern or 10 feet of the high water mark of a lake, stream, pond or flowage.

Note: The department of natural resources under chs. NR 811 and 812 may require additional setbacks. See Appendix for further explanatory material.

2. Exterior containment devices or treatment systems for mixed wastewater, decontamination tanks or other special wastewater treatment devices shall be constructed in accordance with s. SPS 384.25 or as approved by the department.

(b) *Vents.* Vents for mixed wastewater, decontamination tanks and other special wastewater treatment systems shall be sized and installed in accordance with s. SPS 382.31.

(c) *Alarm system.* Containment devices or treatment systems for mixed wastewater, decontamination tanks and other special wastewater treatment devices shall be equipped with an alarm.

(d) *Sampling provision.* Containment devices or treatment systems for mixed wastewater, decontamination tanks and other special wastewater treatment devices shall be equipped to allow the collection of a representative sample.

(e) *Pump requirements.* 1. A discharge line serving a containment tank for servicing purposes shall comply with all of the following:

a. A pipe serving as the discharge line shall be of an acceptable type in accordance with ch. SPS 384.

b. A discharge line shall terminate with a service port consisting of a quick disconnect fitting with a removable plug.

c. The service port of a discharge line shall terminate at least 2 feet above final grade.

d. The service port of a discharge line shall be identified as such with a permanent sign with lettering at least 1/2 inch in height.

e. The service port of a discharge line shall be secured to a permanent support that is capable of withstanding the loads and forces placed on the port.

f. A discharge line shall be at least 3 inches in diameter.

2. Where a lift station is employed for servicing a containment tank, the pump discharge line shall conform with subd. 1., except as provided in subd. 2. a. and b.

a. A discharge line from the lift station shall be at least 2 inches in diameter.

b. The lift station pump shall be activated by means of a keyed−switch at the service port.

(f) *Sizing.* The volume of the mixed wastewater treatment or containment device shall be based on anticipated use.

History: Cr. Register, February, 1985, No. 350, eff. 3−1−85; am. (4) (a) 2. b., (5) (b) 2. intro., c. and (c) 4. b., Register, August, 1991, No. 428, eff. 9−1−91; am. (4) (a) 2. c. and g., 3. a., (5) (b) 1. f. and j., 3. a., (c) 1., (8) (a) 2. c., r. and recr. (5) (a) 1., r. (5) (b) 3. e. and (c) (intro.), renum. (5) (b) 3. f. to be (5) (b) 3. e., Register, February, 1994, No. 458, eff. 3−1−94; am. (5) (a) 2. (intro.), 3. and (b) 2. (intro.), Register, April, 2000, No. 532, eff. 7−1−00; am. (4) (b) 2., Register, December, 2000, No. 540, eff. 1−1−01; CR 02−002: r. and recr. (1), (2), (4) (a), (8) (a) and (b), am. (3) (intro.), (6) (a) (intro.) and (14) (b) (intro.), renum. (3) (a) to (f) to be (3) (b) to (g), cr. (3) (a) and (14) (b) 3., r. (3) (g), Register April 2003 No. 568, eff. 5−1−03; CR 02−129: am. (4) (a) 2. b. and (5) (b) 1. g. Register January 2004 No. 577, eff. 2−1−04; CR 08−055: am. (3) (a) 1., r. and recr. (4) (b) 2. and (14) (a) 2., renum. (5) (intro.) to (d) to be (5) (a) to (e) and am. (5) (a) and (b), cr. (5) (c) 7. Register February 2009 No. 638, eff. 3−1−08; CR 10−064: am. (title), (1), (2), (3) (intro.), (a), (c), (e), (g), (h), (4) (a) 2. f., (5) (c) 3. a., r. (6) (d), cr. (15) Register December 2010 No. 660, eff. 1−1−11; correction in (15) (e) 2. (intro.) made under s. 13.92 (4) (b) 7., Stats., Register December 2010 No. 660; **correction in (2), (3) (a) 1., (4) (a) 3. b., c., (5) (b) 2. b., (c) 1. i., (d) 5., (7) (b), (c) 3. a., (14) (a) 2. a., (b) 1., 2., 3., (15) (a) 2., (b), (e) 1. a. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 382.35 Cleanouts. (1) SCOPE. The provisions of this section set forth the requirements for the installation of cleanouts and manholes for all drain piping.

(2) MATERIALS. Cleanouts shall be constructed of approved materials in accordance with ch. SPS 384.

(3) WHERE REQUIRED. (a) *Horizontal drains.* All gravity horizontal drains within or under a building shall be accessible through a cleanout in accordance with one of the following requirements:

1. The developed length of drain piping between cleanouts for above−ground piping may not exceed 75 feet.

2. The developed length of drain piping between cleanouts for below ground piping 2 inches or less in diameter may not exceed 40 feet.

3. The developed length of drain piping between cleanouts for below ground piping greater than 2 inches in diameter may not exceed 75 feet.

Note: See Appendix for further explanatory material.

(b) *Sanitary building sewers.* 1. Sanitary building sewers 6″ or less in diameter shall be provided with cleanouts or manholes such that:

a. Cleanouts are located not more than 100 feet apart;

b. Manholes are located not more than 400 feet apart;

c. The distance from a cleanout to a manhole located upstream is not more than 200 feet; or

d. The distance from a manhole to a cleanout located upstream is not more than 300 feet.

2. Sanitary building sewers 8″ or larger in diameter shall be provided with manholes at:

a. Every horizontal change in direction of more than 45 degrees where the change in direction is created within a distance of less than 10 feet;

b. Every change in pipe diameters where both connections are 8 inches or larger; and

c. Intervals of not more than 400 feet.

(c) *Storm building sewers.* 1. Storm building sewers 10″ or less in diameter shall be provided with cleanouts or manholes such that:

a. Cleanouts are located not more than 100 feet apart;

b. Manholes are located not more than 400 feet apart;

c. The distance from a cleanout to a manhole located upstream is not more than 200 feet; or

d. The distance from a manhole to a cleanout located upstream is not more than 300 feet.

2. Storm building sewers 12″ or larger in diameter shall be provided with manholes or storm drain inlets with an inside diameter of at least 36″ at:

a. Every horizontal change in direction of more than 45 degrees where the change in direction is created within a distance of less than 10 feet,

b. Every change in pipe diameter where both connections are 12 inches or larger, and

c. Intervals of not more than 400 feet.

(d) *Private interceptor main sewers.* 1. Private interceptor main sewers 5″ or less in diameter shall be provided with an exterior cleanout or manhole upstream of the point of the creation of the private interceptor main sewer and such that:

a. Cleanouts are located not more than 100 feet apart;

b. Manholes are located not more than 400 feet apart;

c. The distance from a cleanout to a manhole located upstream is not more than 200 feet; or

d. The distance from a manhole to a cleanout located upstream is not more than 300 feet.

2. Private interceptor main sewers 6″ or larger in diameter shall be provided with a manhole at:

a. The most upstream point of the private interceptor main sewer;

b. Every horizontal change in direction of more than 45 degrees where the change in direction is created within a distance of less than 10 feet,

c. Every change in pipe diameter where both connections are 6 inches or larger, and

d. Intervals of not more than 400 feet.

(e) *Junction of building drain and building sewer.* A cleanout shall be provided near the junction of a building drain and a building sewer.

1. The cleanout shall be located within 5 feet of where the building drain and the building sewer connect. The cleanout may be located either inside or outside the building.

2. A cleanout in a drain stack may serve as the cleanout at the junction of the building drain and building sewer, if the stack is within 5 feet of where the building drain and building sewer connect.

(f) *Stacks.* Where a cleanout is provided in a drain stack, the cleanout shall be located 28 to 60 inches above the lowest floor penetrated by the stack.

(g) *Branches.* 1. Except as provided in subd. 2., cleanouts shall be provided in connection with batteries of fixtures at such points that all parts of the branch drain may be accessible for cleaning or removal of stoppages. For the purposes of this requirement, removable fixture traps may serve as cleanout openings.

2. A cleanout shall not be required for a branch drain when the fixtures on the branch include one floor outlet fixture and any fixtures discharging into an accompanying wet vent.

(h) *Greasy wastes.* Drain pipes carrying greasy wastes shall be provided with cleanouts located not more than 40 feet apart and at all changes in direction of more than 45°.

(i) *Double sanitary tees.* A cleanout shall be provided immediately above or below a double sanitary tee drain fitting which is installed in a vertical drain pipe of less than 3″ in diameter, unless a stack cleanout is provided in accordance with par. (f).

(j) *Traps and fixture drains.* 1. All traps shall be constructed or installed so that stoppages may be removed from the traps and the horizontal portions of fixture drains.

2. If a trap is not accessible for removal or does not contain a removable dip, a cleanout or a removable inlet shall be installed to enable cleaning of the trap passageway and the horizontal portions of the fixture drain.

(k) *Conductors.* Where a cleanout is provided in a conductor, the cleanout shall be located 28 to 60″ above the lowest floor penetrated by the conductor.

(L) *Sampling manholes.* Municipalities or sanitary sewage districts by ordinance or rule may require the installation of sampling manholes for periodic sewage monitoring.

Note: The installation of sampling manholes may be needed for the monitoring of industrial wastes under chs. NR 200 to 299. See Appendix for further explanatory material.

(m) *Catch basins and interceptors.* The fixture drain from all interceptors designed in accordance with s. SPS 382.34 (4) (a) 2. shall be provided with an accessible cleanout located outside of the basin and not more than 15 inches from the weir of the trap.

(4) DIRECTION OF FLOW. Every cleanout shall be installed so as to open in the direction of the waste flow or at a right angle thereto.

(5) ACCESSIBILITY. Cleanout plugs shall not be covered with cement, plaster, or any other similar permanent finishing material.

(a) *Underground piping.* Cleanouts installed in underground drain piping shall be extended vertically to or above the finish grade.

1. All interior and exterior cleanouts where the vertical distance between the horizontal drain pipe being served and the top of the cleanout opening exceeds 18 inches in length, shall connect to the drain piping through a fitting as specified in Table 382.30–4.

2. A cleanout located outside of a building shall be provided with a frost sleeve.

a. The frost sleeve shall be of a material approved for building sewers in accordance with s. SPS 384.30 (2) (c).

b. Where a cleanout is located in an area subject to vehicular traffic the top of the frost sleeve shall terminate in a concrete pad at least 4″ thick and extending at least 9″ from the sleeve on all sides, sloping away from the sleeve.

c. The bottom of the frost sleeve shall terminate 6″ to 12″ above the top of the drain piping or at least 6″ below the predicted frost depth in accordance with s. SPS 382.30 Table 382.30−6.

d. The frost sleeve shall have a removable watertight top of sufficient thickness and strength to sustain the weight of anticipated traffic.

Note: See Appendix for further explanatory material.

(b) *Concealed piping.* Cleanout access for drain piping located in concealed spaces shall be provided by either extending the cleanout to at least the surface of a wall or floor or by providing access panels of a sufficient size to permit removal of the cleanout plug and proper cleaning of the pipe.

(6) CLEANOUT SIZE. Cleanouts and cleanout extensions shall be sized in accordance with Table 382.35.

Table 382.35
Cleanout Sizes

Diameter of Pipe Served by Cleanout (inches)	Minimum Diameter of Cleanout Extension (inches)	Minimum Diameter of Cleanout Opening (inches)
$1^1/_4$	$1^1/_4$	$1^1/_4$
$1^1/_2$	$1^1/_2$	$1^1/_4$
2	$1^1/_2$	$1^1/_2$
3	3	$2^1/_2$
4	4	$3^1/_2$
5	5	4
6	6	5
8 and larger	6	6

(7) PROHIBITED USE OF CLEANOUT OPENINGS. Cleanout openings shall not be used for the installation of fixtures or floor drains, except where another cleanout of equal access and capacity is provided.

(8) MANHOLES. (a) *Diameter.* The minimum diameter of manholes shall be 42″. A manhole shall have a minimum access opening of 24″.

(b) *Materials.* Manholes shall be constructed of approved materials in accordance with ch. SPS 384 and in accordance with the design provisions of s. NR 110.13.

Note: The provisions of s. NR 110.13 regarding the manhole's flow channel, watertightness, and drop pipe indicate the following specifications:

—The flow channel through manholes shall be made to conform to the shape and slope of the sewer.

—Solid watertight manhole covers are to be used wherever the manhole tops may be flooded by street runoff or high water. Where groundwater conditions are unfavorable, manholes of brick or block shall be waterproofed on the exterior with plastic coatings supplemented by a bituminous waterproof coating or other approved coatings. Inlet and outlet pipes are to be joined to the manhole with a gasketed flexible watertight connection or any watertight connection arrangement that allows differential settlement of the pipe and manhole wall to take place.

—An outside drop pipe is to be provided for a sewer entering a manhole where the invert elevation of the entering sewer is 2 feet or more above the spring line of the outgoing sewer. The entire drop connection shall be encased in the concrete. Inside drop connection may be approved on a case−by−case basis.

Note: See Appendix for further explanatory material.

History: Cr. Register, February, 1985, No. 350, eff. 3−1−85; am. (3) (i), r. and recr. (3) (j), Register, May, 1988, No. 389, eff. 6−1−88; am. (5) (a) 2. a., Register, August, 1991, No. 428, eff. 9−1−91; r. and recr. (3) (j) and (5) (a) 2. c., Register, February, 1994, No. 458, eff. 3−1−94; CR 02−002: am. (3) (a) and (d) 1. (intro.), renum. (3) (g) to be (3) (g) 1. and am., cr. (3) (g) 2. and (m), r. and recr. (5) (a) 1. Register April 2003 No. 568, eff. 5−1−03; CR 08−055: r. and recr. (3) (a), am. (3) (b) 2. a., b., (c) 2. a., b., (d) 2. b., c., (5) (a) 1. and Table 82.35 Register February 2009 No. 638, eff. 3−1−09; **correction in (2), (3) (m), (5) (a) 1., 2. a., c., (6), (8) (b) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 382.36 Stormwater and clearwater plumbing systems. (1) SCOPE. The provisions of this section set forth the requirements for the design, installation and maintenance of piping, conveyance, venting, detention and treatment of stormwater and clearwater in plumbing systems.

Note: Refer to ch. NR 151 for stormwater management requirements.

(2) MATERIALS. All stormwater and clearwater plumbing systems shall be constructed of approved materials in accordance with s. SPS 384.30 (3).

(3) DESIGN OF STORMWATER PLUMBING SYSTEMS. (a) Plumbing systems upstream of detention shall be designed, at a minimum, based on the 10−year, 24−hour storm event.

(b) Plumbing detention systems and plumbing systems located downstream of detention shall be designed based on anticipated flows and volumes.

(c) Stormwater and clearwater infiltration systems shall comply with s. SPS 382.365.

Note: For a listing of best management practices (BMPs) refer to Appendix A−382.36 (3)−1.

Note: Where local discharge requirements are more stringent, stormwater plumbing systems may provide detention and treatment to comply with the local stormwater management plan.

(4) DISCHARGE, DISPERSAL, CLEARWATER REUSE OR STORMWATER USE. (a) *Discharge points.* The discharge points for stormwater and clearwater shall be as specified in Table 382.38−1.

(b) *Segregation of wastewater.* 1. Except as provided in subd. 2., stormwater or clearwater piping may not connect to a sanitary drain system.

2. Where a combined sanitary−storm sewer system is available, stormwater, clearwater and sanitary wastewater may be combined in the building sewer.

3. Stormwater gravity drains shall not be combined with clearwater drains prior to discharging to the storm building drain except where approved by the department.

Note: See also Table 382.38−1 which limits clearwater discharges to sanitary sewer at 50 gpd.

Note: For the use of stormwater or reuse of clearwater, refer to the appropriate requirements in ss. SPS 382.30, 382.34, 382.40, 382.41, 382.70 and this section.

Note: For further explanatory material regarding the rational method, other methods and runoff co−efficients, see Appendix A−382.36 (4).

(5) INPUT CALCULATIONS. (a) *Peak flow.* The peak flow of stormwater influent to a plumbing system shall be calculated using any of the following methods:

1. 'Area method.' For sizing of conveyance piping, when calculating stormwater peak flow based on the tributary area, the area in square feet shall be divided by the following applicable divisors:

a. For roofs the divisor is 26 square feet/gpm.

b. For paved or graveled ground surfaces the divisor is 32.5 square feet/gpm.

c. For lawns, parks and similar land surfaces the divisor is 104 square feet/gpm.

Note: For example, 10,000 square feet of roof area/26 square feet/gpm = 385 gpm or 0.85 cubic feet/second.

2. 'Rational method.' For calculating peak flow, the intensity shall be determined using the time of concentration for the tributary area.

Note: For the equation procedure for runoff coefficients for use with the rational method, refer to Appendix A−382.36 (5)−1.

3. 'Engineering analysis method.' An engineering analysis, acceptable to the department, shall be based on the peak flow calculated in accordance with sub. (3) (a).

Note: A model that calculates peak flow such as SWMM, TR−20, TR−55, P8 or an equivalent methodology may be used.

(b) *Volume.* The volume of stormwater influent to a plumbing system shall be based on an engineering design acceptable to the department and a minimum of a two−year, 24−hour storm event and designed so that no property damage occurs at 100−year, 24−hour storm event with a Type II distribution.

Note: For runoff coefficients and use of other methods or models, refer to Appendix A−382.36 (5)−2 and A−382.36 (5)−3.

Note: The intensity of rainfall varies considerably during a storm as well as geographic regions. To represent various regions of the United States, the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) developed four synthetic 24−hour rainfall distribution types from available National Weather Service (NWS) duration−frequency data (Hershfield 1961; Frederick et al., 1977) or local storm data. Type IA is the least intense and type II is the most intense short duration rainfall. Types I and IA represent the Pacific maritime climate with wet winters and dry summers. Type III represents Gulf of Mexico and Atlantic coastal areas where tropical storms bring large 24−hour rainfall amounts. Type II represents the rest of the country, including Wisconsin. For more information, see the USDA−NRCS webpage: http://www.nrcs.usda.gov/.

(c) *Additional inputs to stormwater systems.* Additional inputs to stormwater systems shall be estimated based on anticipated flows and volumes.

(6) CONVEYANCE AND DETENTION SYSTEMS. (a) *Design.* The design of stormwater and clearwater conveyance systems shall conform to all of the following:

1. Horizontal stormwater conveyance piping shall be sized using either of the following:

a. An engineering analysis, based on full flow capacity, acceptable to the department.

b. Tables 382.36−1 to 382.36−5 based on pipe type, diameter and pitch.

2. a. A vertical conductor for stormwater may not be smaller than the largest horizontal branch discharging into the conductor.

b. Vertical conductors shall be sized in accordance with Tables 382.36−1 and 382.36−3 or by an engineering analysis acceptable to the department.

Note: For the use of Baird's equation, refer to Appendix A−382.36 (6)−1.

3. Clearwater conveyance systems shall be sized in accordance with s. SPS 382.30 (3) and (4).

4. Underground, gravity−flow storm building sewers shall have a minimum 3−inch inside diameter.

(b) *Velocity in stormwater conveyance system piping.* The pitch of stormwater conveyance system piping shall be designed to create a minimum velocity of one foot per second when flowing full.

(c) *Fittings and connections.* 1. Except as provided in subd. 2., fittings and connections for stormwater and clearwater conveyance systems shall comply with s. SPS 382.30 (8) and (9).

2. The minimum radius for the first 90º fitting located downstream of a roof drain shall comply with the horizontal to vertical requirements in Table 382.30−4.

(d) *Stack offsets.* Stack offsets for piping of a clearwater conveyance system piping shall comply with s. SPS 382.30 (6).

(e) *Pitch of clearwater gravity conveyance system piping.* 1. The minimum pitch of gravity conveyance system piping having a 2−inch inside diameter or less shall be 1/8 inch per foot.

2. The minimum pitch of clearwater gravity conveyance system piping having at least a 3−inch inside diameter or more shall be 1/16 inch per foot.

(f) *Branch connections near base of stack.* Branch drains from interior clearwater inlets may not connect downstream from the base fitting or fittings of a drain stack within a distance equal to 20 pipe diameters of the building drain.

(g) *Detention systems.* 1. The storage volume of a dry detention system shall be designed and installed with a drain time of 72 hours after a storm event.

2. Paved surfaces or parking lots serving as detention areas shall be limited to a design depth of 6 inches, unless otherwise limited by local ordinance.

3. By design, ground surface ponding shall drain within 24 hours after a storm event.

Table 382.36−1

Maximum Capacity of Stormwater Conveyance Piping for PVC, ASTM D1785, D2665, F891 and ABS, ASTM D1527, D2661, F628

Nominal Pipe Size (in inches)	Maximum Capacities in gallons per minute (gpm)					
	Pitch of Piping Per Foot					
	1/32 inch (0.26% slope)	1/16 inch (0.52% slope)	1/8 inch (1.04% slope)	¼ inch (2.08% slope)	½ inch (4.16% slope)	Vertical
3	30	40	60	80	110	89
4	60	80	120	160	230	183
5	110	150	210	300	420	334
6	170	240	340	480	690	545
8	360	510	710	1,010	1,430	1,133
10	660	930	1,310	1,850	2,620	2,079
12	1,050	1,480	2,090	2,960	4,180	3,316
14	1,350	1,900	2,690	3,810	5,390	4,271
16	1,920	2,720	3,840	5,440	7,690	6,097
18	2,630	3,720	5,270	7,440	10,520	8,348
20	3,520	4,970	7,030	9,956	14,060	11,155
24	5,750	8,140	11,490	16,260	22,990	18,244

Note: To convert to cubic feet per second (cfs) divide gpm by 448.8.

Table 382.36−2

Maximum Capacity of Stormwater Horizontal Conveyance Piping for PVC, ASTM D3034

Nominal Pipe Size (in inches)	Maximum Capacities in gallons per minute (gpm)				
	Pitch of Piping Per Foot				
	1/32 inch (0.26% slope)	1/16 inch (0.52% slope)	1/8 inch (1.04% slope)	¼ inch (2.08% slope)	½ inch (4.16% slope)
4	60	80	110	160	220
6	160	230	320	450	640
8	350	490	700	990	1,400
10	630	900	1,270	1,790	2,540
12	1,010	1,430	2,020	2,850	4,040
15	1,730	2,450	3,460	4,900	6,920

Note: To convert to cubic feet per second (cfs) divide gpm by 448.8.

The Wisconsin Administrative Code on this web site is current through the last published Wisconsin Register. See also Are the Codes on this Website Official?

Table 382.36−3

Maximum Capacity of Stormwater Conveyance Piping for Cast Iron, ASTM A74 and ASTM A888

Nominal Pipe Size (in inches)	Maximum Capacities in Gallons Per Minute (gpm)					
	Pitch of Piping Per Foot					
	1/32 inch (0.26% slope)	1/16 inch (0.52% slope)	1/8 inch (1.04% slope)	¼ inch (2.08% slope)	½ inch (4.16% slope)	Vertical
3	20	30	40	60	80	80
4	50	60	90	130	180	173
5	80	120	170	230	330	315
6	140	190	270	380	540	516
8	290	420	590	830	1,170	1,118
10	540	770	1,090	1,540	2,170	2,068
12	870	1,230	1,740	2,490	3,490	3,318
15	1,630	2,310	3,270	4,620	6,530	6,217

Note: To convert to cubic feet per second (cfs) divide gpm by 448.8.

Table 382.36−4

Maximum Capacity of Stormwater Horizontal Conveyance Piping for Concrete, ASTM C76 and ASTM C14

Nominal Pipe Size (in inches)	Maximum Capacities in gallons per minute (gpm)				
	Pitch of Piping Per Foot				
	1/32 inch (0.26% slope)	1/16 inch (0.52% slope)	1/8 inch (1.04% slope)	¼ inch (2.08% slope)	½ inch (4.16% slope)
4	40	60	90	120	170
6	130	180	260	360	510
8	280	390	550	780	1,110
10	500	710	1,000	1,420	2,010
12	820	1,150	1,630	2,310	3,260
15	1,480	2,090	2,960	4,180	5,910
18	2,400	3,400	4,810	6,800	9,620
21	3,630	5,130	7,250	10,260	14,500
24	5,180	7,320	10,350	14,640	20,710
27	7,090	10,020	14,170	20,050	28,350
30	9,390	13,270	18,770	26,550	37,550
33	12,100	17,120	24,210	34,230	48,410
36	15,260	21,590	30,530	43,170	61,060
39	18,900	26,720	37,790	53,440	75,580
42	23,020	32,560	46,050	65,120	92,100
48	32,870	46,490	65,740	92,980	131,490
54	45,000	63,640	90,010	127,290	180,010
60	59,600	84,290	119,200	168,580	238,410

Note: To convert to cubic feet per second (cfs) divide gpm by 448.8.

Table 382.36−5
Maximum Capacity Of Stormwater Horizontal Conveyance Piping For Elliptical Reinforced Concrete Pipe

Pipe Diameters in inches (circular pipe equivalent)	Maximum Capacities in gallons per minute (gpm)			
	Pitch of Piping Per Foot			
	1/16 inch (0.52% slope)	1/8 inch (1.04% slope)	¼ inch (2.08% slope)	½ inch (4.16% slope)
14 X 23 (18)	3,300	4,675	6,700	9,500
19 X 30 (24)	7,200	10,060	14,700	21,000
24 X 38 (30)	13,250	18,740	26,500	37,475
29 X 45 (36)	21,545	30,475	43,095	60,940
34 X 53 (42)	32,500	45,965	65,000	91,925
38 X 60 (48)	46,405	65,625	92,800	131,245
43 X 68 (54)	63,525	89,840	127,050	179,800
48 X 76 (60)	84,135	118,985	168,270	237,965

(7) OTHER DESIGN REQUIREMENTS. (a) *Subsoil drains.* 1. A subsoil drain discharging to a plumbing system shall discharge into an area drain, manhole or storm sewer, trapped receptor or a sump with a pump.

2. Where a foundation drain is subject to backwater, the drain shall be protected by a backwater valve or a sump with a pump.

(b) *Backwater valve.* All backwater valves shall be accessible for maintenance.

(c) *Sewer location.* 1. No storm building sewer or private interceptor main storm sewer may pass through or under a building to serve another building, unless one of the following conditions is met:

a. The storm building sewer or private interceptor main storm sewer serves farm buildings or farm houses, or both, that are located on one property.

b. Where a storm building sewer or private interceptor main storm sewer serves buildings that are located on one property, a document that indicates the piping and distribution arrangement for the property and buildings is recorded with the register of deeds no later than 90 days after installation.

2. The location of storm building drains and building sewers shall comply with ss. SPS 382.30 (11) (d) and 382.40 (8) (b) 7.

(d) *Installation requirements.* 1. The connection of a stormwater leader discharging to a storm building sewer shall be made above the finished grade.

Note: For more information regarding joints and connections, refer to s. SPS 384.40.

2. The elevation of a storm building drain shall comply with s. SPS 382.30 (11) (b) 1.

3. Interior inlets and drains subject to backflow or backwater shall be protected with a check valve or backwater valve.

4. Storm building drains and building sewers shall be installed to comply with s. SPS 382.30 (11) (e).

5. Storm building sewer connections to public sewers shall be in accordance with s. SPS 382.30 (11) (f).

6. Cleanouts for conveyance system piping shall be installed in accordance with s. SPS 382.35.

7. Storm building sewers that receive clearwater and that may be subject to freezing shall be installed in accordance with s. SPS 382.30 (11) (c) 2.

8. Storm building drains, clearwater building drains, and building storm sewers and appurtenances shall be separated from water wells by the applicable separation distances contained in chs. NR 811 and 812, or as otherwise permitted by the department of natural resources.

9. All underground stormwater storage tanks for water reuse shall be separated from sanitary sewers by a minimum of 8 feet.

10. a. A means to locate buried non−metallic storm building sewers and private interceptor main sewers that discharge to municipal mains shall be provided in accordance with the options under s. SPS 382.30 (11) (h), except as provided in subd. 10. b.

b. Tracer wire insulation color for non−metallic storm pipe shall be brown.

(8) SUMPS AND PUMPS. (a) *Sumps.* 1. 'General.' All storm building subdrains shall discharge into a sump, the contents of which shall be automatically lifted and discharged, dispersed or used in accordance with sub. (4).

2. 'Construction and installation'. a. Except as provided in subd. 2. c. and d., an interior sump shall have a rim extending at least one inch above the floor immediately adjacent to the sump.

b. A sump shall have a removable cover of sufficient strength for anticipated loads.

c. Where a sump is installed in an exterior meter pit or elevator pit, the rim may be level with the floor.

d. When a sump is provided with an airtight, solid cover.

3. 'Location'. All sumps installed for the purpose of receiving clearwater, groundwater or stormwater shall be separated from water wells by the applicable separation distances contained in chs. NR 811 and 812, or as otherwise permitted by the department of natural resources.

Note: See Appendix A−382.30 (11) (d) for material reprinted from s. NR 812.08.

4. 'Size'. a. Except as permitted under subd. 4. b. or c. the size of each sump shall be no smaller than 16 inches in diameter at the top, 14 inches in diameter at the bottom, and 22 inches in depth.

b. The minimum sump diameter may be smaller than 16 inches when specified by the manufacturer for a combination sump and pump.

c. A sump located in an elevator pit may have a width or diameter of not less than 12 inches and a depth of not less than 12 inches.

(b) *Pumps.* 1. 'Size.' The pump shall be of a capacity appropriate for the anticipated use.

2. 'Discharge piping.' a. Where a pump discharges into a storm drain system, a check valve shall be installed.

b. The minimum diameter discharge piping shall be based on the design flow rate of the pump and a minimum velocity of one foot/second.

(9) INLET REQUIREMENTS. (a) *Interior clearwater drain inlets.* Interior clearwater drain inlets shall terminate at least one inch above the finished floor.

(b) *Exterior stormwater inlets.* 1. 'Construction.' a. All exterior stormwater inlets shall be constructed of material in accordance with s. SPS 384.30.

Note: For additional information on approved materials, refer to s. SPS 384.30 (3) (f).

b. All exterior stormwater inlets subject to vehicular traffic shall be set on a suitable base capable of sustaining the anticipated load.

2. 'Design'. All exterior stormwater inlets shall be designed for the anticipated flow.

Note: For manhole requirements, refer to s. SPS 382.35 (3).

3. 'Inlet grates'. a. General. All inlets shall be provided with a well−fitted, removable grate of a thickness and strength to sustain the anticipated loads.

Note: Sections SPS 362.1101 to 362.1110 specify that for floor or ground surface inlets when placed within an identifiable accessible route, openings in the floor or ground surface shall be of a size that does not permit the passage of a ½−inch sphere. Also, it states that grates having elongated openings be placed so that the longest dimension is perpendicular to the dominant direction of travel.

b. Floor or ground surface inlets. Openings in the floor or ground surface shall be of a size that prohibits the entrapment of wheeled vehicles, wheelchairs or pedestrians within the grate openings.

c. Grates on horizontal pipes. Grates shall be provided on horizontal inlets greater than 6 inches in diameter. The grates shall be placed so that the rods or bars are not more than 3 inches downstream of the inlet. Rods or bars shall be spaced so that the openings do not permit the passage of a 6−inch sphere.

Note: See Appendix for further explanatory material.

(c) *Subsurface areas of 50 square feet or less.* Other than stairwells, all subsurface areas not exceeding 50 square feet and exposed to the weather, shall comply with one of the following:

1. Drain to foundation drains through a minimum 2−inch diameter pipe or a through a continuous layer of washed stone aggregate.

2. Drain to the storm building drain, storm subdrain or storm sewer through a minimum 3−inch diameter pipe.

(d) *Subsurface areas of more than 50 square feet and stairwells.* An area drain shall be provided in subsurface areas greater than 50 square feet and in all stairwells exposed to the weather. The area drain shall comply with all of the following:

1. Drain to the storm building drain, storm subdrain or storm sewer.

2. The fixture drain shall have a minimum 3−inch inside diameter and may not discharge into a subsoil or foundation drain.

(10) ROOF DRAINS. (a) *General roofs.* Roof drains shall be equipped with strainers extending not less than 4 inches above the surface of the roof immediately adjacent to the roof drain. Strainers shall have an available inlet area above the roof of not less than 1.5 times the area of the conductor to which the drain connects.

(b) *Flat decks.* Roof drain strainers used on sun decks, open parking decks and similar areas shall be of the flat surface type, shall be level with the deck and shall have an available inlet area of not less than 2 times the area of the conductor to which the drain connects.

(11) SECONDARY ROOF DRAINS. (a) *Sizing.* When secondary roof drain systems are installed the secondary system shall be sized and installed in accordance with the requirements in this section.

(b) *Prohibited connection.* Secondary roof drain systems may not be connected to primary roof drain systems.

(c) *Discharge.* All secondary roof drain systems shall discharge in accordance with Table 382.38–1.

(12) TRAPS AND VENTS. (a) *Traps.* 1. Traps are required for interior drain inlets receiving clearwater.

2. Except for exterior loading dock drains, traps are required for exterior drain inlets located within 10 feet of an air inlet, door or openable window.

3. More than one drain inlet may discharge to the same trap.

4. A foundation drain that discharges by gravity to a storm sewer shall be trapped. The trap shall be provided with cleanouts.

(b) *Vents.* 1. A trap receiving clearwater shall be vented in accordance with s. SPS 382.31. Vent piping for a clearwater drain system may not be connected to a vent system serving a sanitary drain system or chemical waste system.

2. a. Vents serving a solid covered sump shall terminate a minimum of one inch above finished floor.

b. Sump vents shall be sized as per Table 382.31−4.

(13) OPERATION AND MAINTENANCE. (a) *Plan.* An operation and maintenance plan shall be implemented for all stormwater plumbing systems for drainage areas of one or more acres that are installed on or after December 1, 2004.

(b) *Plan information.* An operation and maintenance plan as required in par. (a) shall include at least all of the following information, applicable to the system:

1. Accumulated solids or byproduct removal requirements.

2. Identification of safety hazards.

3. Cleaning and inspection schedule.

4. Inspection and maintenance checklist, including at least the following items:

a. Filters.

b. Disinfection units.

c. Sedimentation chambers.

d. Detention devices.

e. Infiltration systems.

5. Start up and shutdown procedures.

6. Vector control requirements.

7. A contingency plan in the event of system failure.

(c) *Plan location.* The operation and maintenance plan shall remain onsite and be available for inspection when requested by the department.

(d) *Record of maintenance.* When requested the owner shall make available for inspection all maintenance records to the department or agent for the life of the system.

History: Cr. Register, February, 1985, No. 350, eff. 3−1−85; r. and recr. (3) (a) and (b) 1., (c) 1. and (11) (a) 4., cr. (3) (c) 3., Register, May, 1988, No. 389, eff. 6−1−88; renum. (13) (a) and (b) to be (b) and (c) and am. (b) 1., cr. (3) (b) 3. and (13) (a), r. (3) (c) 3. and (13) (intro.), Register, August, 1991, No. 428, eff. 9−1−91; reprinted to correct error in (5) (e) 2., Register, October, 1991, No. 430**;** am. (3) (b) 1., (c) 1. a., (13) (b) 1. and (c), cr. (11) (a) 5., Register, February, 1994, No. 458, eff. 3−1−94; r. and recr. (11) (a) 2. and 5., Register, April, 1998, No. 508, eff. 5−1−98; renum. and am. (3) (b) 3. a. to be (3) (b) 3. and (3) (b) 3. b. to be (3) (b) 4., Register, April, 2000, No. 532, eff. 7−1−00; am. (3) (b) 3., (4) (a), (5) (a) and (6) (a), cr. (3) (b) 5. and Table 82.36−4a, Register, December, 2000, No. 540, eff. 1−1−01; CR 02−002: r. and recr. (3), (11) (a) 3., (13) (a) 2., (15) (a) and (b), am. (5) (e) (intro.), (10), (12), (14) and Table 82.36−4 Register April 2003 No. 568, eff. 5−1−03; CR 04−035: r. and recr. Register November 2004 No. 587, eff. 12−1−04; CR 07−069: cr. (7) (d) 10. Register February 2008 No. 626, eff. 3−1−08; CR 08−055: am. (4) (b) 3. and (8) (a) 4., r. and recr. (11) Register February 2009 No. 638, eff. 3−1−09; **correction in (2), (3) (c), (4) (a), (6) (a) 1. b., 2. b., 3., (c) 1., 2., (d), (7) (c) 2., (d) 2., 4., 5., 6., 7., 10. a., (9) (b), (11), (c), (12) (b) 1., 2. b. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 382.365 Stormwater and clearwater subsurface infiltration plumbing systems. (1) SCOPE. The provisions of this section set forth the requirements for the design, installation and maintenance of stormwater and clearwater subsurface infiltration plumbing systems serving building sites.

Note: The department of natural resources has registration requirements for class V injection wells. See Appendix for further explanatory material.

(2) SITE AND SOIL EVALUATION. (a) *Site evaluation.* A site evaluation shall be conducted in accordance with the methods and standards as provided in s. SPS 385.40 (3) (a).

(b) *Soil evaluation.* 1. A soil evaluation shall be conducted in accordance with the methods and standards as provided in s. SPS 385.30 (1) (c).

2. Individuals qualified to conduct soil evaluation under this subsection shall be an individual that maintains either a registration as provided in s. SPS 305.33 or a license as provided in ch. GHSS 4.

(3) INFILTRATION SYSTEM DESIGN. (a) *Influent quality.* For stormwater and clearwater infiltration plumbing systems, the influent quality shall comply with the requirements in Table 382.70−1 for subsurface infiltration and irrigation.

(b) *In situ soil requirements.* 1. Except as provided in subd. 2., the minimum depth of suitable in situ soil for infiltration systems shall be as specified in Table 382.365−1 to separate the system from the highest groundwater elevation or bedrock. When groundwater mounding calculations affect the depth to seasonal groundwater, the depth of suitable soil shall be measured to the calculated elevation of mounded groundwater.

2. For roof runoff or where treatment has afforded an equivalent level of water quality, the depth of in situ soil shall be no less than one foot of materials finer than coarse sand.

Note: See Appendix for representative water quality levels.

Table 382.365−1
Depth of Suitable Soils by USDA Soil Texture and Percent Fines of the Infiltrative Surface

Soil Texture	Minimum 5 ft. of Suitable Soil Separation and ≥10% but <20% Fines [a]		Minimum 3 ft. of Suitable Soil Separation and ≥20% Fines [a]	
	Texture Suitability	Maximum Rock Fragment Content [b]	Texture Suitability	Maximum Rock Fragment Content [b]
Sands				
COS	NP [c]	−−	NP	−−
S	NP [c]	−−	NP [c]	−−
FS	NP [c]	−−	NP [c]	−−
VFS	X	NP [c] > 60%	X	NP [c] > 20%
Loamy sands				
LCOS	X	NP [c] > 0%	NP [c]	−−
LS	X	NP [c] > 0%	NP [c]	−−
LFS	X	NP [c] > 0%	NP [c]	−−
LVFS	X	NP [c] > 82%	X	NP [c] > 63%
Sandy loams				
COSL	X	NP [c] > 56%	X	NP [c] > 13%
SL	X	NP [c] > 56%	X	NP [c] > 13%
FSL	X	NP [c] > 56%	X	NP [c] > 13%
VFSL	X	NP [c] > 74%	X	NP [c] > 47%
Loam (L)	X	NP [c] > 79%	X	NP [c] > 58%
Silt Loam (SIL)	X	NP [c] > 84%	X	NP [c] > 68%
Silt (SI)	X	NP [c] > 88%	X	NP [c] > 75%
Clay Loams				
SCL	X	NP [c] > 71%	X	NP [c] > 43%
SICL	X	NP [c] > 88%	X	NP [c] > 75%
CL	X	NP [c] > 81%	X	NP [c] > 63%
Clays				
SC	X	NP [c] > 78%	X	NP [c] > 56%
SIC	X	NP [c] > 88%	X	NP [c] > 75%
C	X	NP [c] > 82%	X	NP [c] > 63%

NP = Not permitted.
X = Suitable for use under the specified conditions.
[a] Fines are mineral particles passing a 200 mesh sieve (less than 0.075mm). Content is measured by weight.
[b] Rock fragments are unattached pieces of rock 2 mm in diameter or larger. Content is measured by volume.
[c] Permitted only where laboratory analysis provides evidence of percent fines required.

USDA Soil Texture Abbreviations:

COS = Coarse Sand
S = Sand
LCOS = Loamy Coarse Sand
LS = Loamy Sand
LFS = Loamy Fine Sand
LVFS = Loamy Very Fine Sand
COSL = Coarse Sandy Loam
SL = Sandy Loam
FSL = Fine Sandy Loam
VFSL = Very Fine Sandy Loam
L = Loam
SIL = Silt Loam
SI = Silt
SCL = Sandy Clay Loam
SICL = Silty Clay Loam
CL = Clay Loam
SC = Sandy Clay
SIC = Silty Clay
C = Clay

(c) *Hydraulic application rates.* The maximum hydraulic application rate for stormwater and clearwater subsurface infiltration plumbing systems shall be in accordance with one of the following methods.

1. The maximum hydraulic application rate shall be determined by soil analysis in accordance with sub. (2) (b) and Table 382.365−2.

2. The maximum hydraulic application rate shall be determined by field measurement using a nationally−accepted method and the correction factor as determined using Table 382.365−3. To determine the maximum hydraulic application rate, the measured infiltration rate at the infiltrative surface shall be divided by the correction factor as listed in Table 382.365−3.

Table 382.365−2
Design Infiltration Rates For Soil Textures Receiving Stormwater

Soil Texture [a]	Design Infiltration Rate Without Measurement inches/hour [b]
Coarse sand or coarser	3.60
Loamy coarse sand	3.60
Sand	3.60
Loamy sand	1.63
Sandy loam	0.50
Loam	0.24
Silt loam	0.13
Sandy clay loam	0.11
Clay loam	0.03
Silty clay loam	0.04 [c]
Sandy clay	0.04
Silty clay	0.07
Clay	0.07

[a.] Use sandy loam design infiltration rates for fine sand, loamy fine sand, very fine sand, and loamy fine sand soil textures.
[b] Infiltration rates represent the lowest value for each textural class presented; based on Rawls et al., 1998 [Use of Soil Texture, Bulk Density and Slope of Water Retention Curve to Predict Saturated Hydraulic Conductivity, ASAE, Vol. 41(2), pp. 983−988].
[c] Infiltration rate is an average, based on Rawls et al., 1982 (Estimation of Soil Water Properties, Transactions of the American Society of Agricultural Engineers Vol. 25, No. 5 pp. 1316 –1320 and 1328) and Clapp & Hornberger, 1978 (Empirical equations for some hydraulic properties. Water Resources Research 14:601−604).

Table 382.365−3
Total Correction Factors Divided Into Measured Infiltration Rates

Ratio of Design Infiltration Rates [a]	Correction Factor
1	2.5
1.1 to 4.0	3.5
4.1 to 8.0	4.5
8.1 to 16.0	6.5
16.1 or greater	8.5

[a] Ratio is determined by dividing the design infiltration rate from Table 382.365−2 for the textural classification at the bottom of the infiltration device by the design infiltration rate from Table 382.365−3 for the textural classification of the least permeable soil horizon. The least permeable soil horizon used for the ratio should be within five feet of the bottom of the device or to the depth of the limiting layer.

(d) *Groundwater mounding.* Groundwater mounding consideration shall be included in the design of any stormwater and clearwater subsurface infiltration plumbing system that has a width that exceeds 15 feet and a depth to the estimated highest groundwater elevation.

Note: An acceptable model is provided by the USGS, webpage: http://water.usgs.gov/ogw/techniques.html.

(e) *Drain down time.* 1. Stormwater and clearwater subsurface infiltration plumbing systems shall be designed to drain within 72 hours after a storm event.

2. By design, ground surface ponding shall drain within 24 hours after a storm event.

(f) *Setbacks.* 1. Stormwater and clearwater subsurface infiltration plumbing systems shall be located as provided in Table 382.365−4, except for irrigation systems.

Table 382.365−4
Horizontal Setback Parameters by Physical Feature

Physical Feature	Setback Parameters in feet
Building	10
Holding tank, stormwater collection tank	10
POWTS dispersal component	5
POWTS holding or treatment component	10
Property line	5
Swimming pool, in ground	15

2. All stormwater and clearwater subsurface infiltration plumbing systems shall be separated from water wells by the applicable separation distances contained in chs. NR 811 and 812 or as otherwise approved by the department of natural resources.

Note: See Appendix A−382.30 (11) (d) for material reprinted from ss. NR 811.12 (5) (d) and 812.08. Section NR 811.16 (4) (d) or 812.08 may have additional setback requirements.

(4) INSTALLATION. (a) *Orientation.* Except for subsurface irrigation systems, all of the following shall apply:

1. The longest dimension of a stormwater or clearwater subsurface infiltration plumbing system consisting in part of in situ soil shall be oriented along the surface contour of the site location, unless otherwise approved by the department.

2. The infiltrative surface of a stormwater or clearwater subsurface infiltration plumbing system consisting in part of in situ soil and located below the surface of the original grade shall be level.

(b) *Other requirements.* 1. A stormwater or clearwater subsurface infiltration plumbing system consisting in part of in situ soil may not be installed if the soil is frozen at the infiltrative surface.

2. Snow cover shall be removed before excavating or installing a stormwater or clearwater system component consisting in part of in situ soil.

3. For a stormwater or clearwater subsurface infiltration plumbing system consisting in part of in situ soil, the soil moisture content shall be evaluated immediately prior to installation of the component. If the soil evaluation at the infiltrative surface results in the sample capable of being rolled into a ¼ –inch wire, the installation may not proceed.

Note: To accomplish a field test for soil wetness, a soil sample the size of one's palm may be rolled to form at least a ¼−inch wire.

4. All vessels and pipes of a stormwater or clearwater subsurface infiltration plumbing system shall be bedded in accordance with a product approval under s. SPS 384.10 or a plan approval under s. SPS 382.20.

(5) OPERATION AND MAINTENANCE. (a) *General.* Operation and maintenance shall be performed in accordance with the operation and maintenance plan submitted with the stormwater and clearwater subsurface infiltration plumbing system design and s. SPS 382.36 (13), where applicable.

(b) *Prohibited substance.* 1. Except as provided in subd. 2., no substance shall be discharged into a stormwater or clearwater subsurface infiltration plumbing system that results in exceeding the enforcement standards and preventive action limits specified in ch. NR 140 Tables 1 and 2 at a point of standards application, pursuant to s. 160.21 (2), Stats.

Note: For groundwater standard limits on various substances, refer to ch. NR 140 Table 1.

2. Pursuant to s. 160.19 (2) (a), Stats., the department has determined that it is not technically or economically feasible to require that a stormwater or clearwater subsurface infiltration plumbing system treat wastewater to comply with the preventive action limit for chloride specified in ch. NR 140 Table 2, as existed on June 1, 1998.

Note: Section 160.19 (2) (a), Stats., reads: "Each regulatory agency shall promulgate rules which define design and management practice criteria for facilities, activities and practices affecting groundwater which are designed, to the extent technically and economically feasible, to minimize the level of substances in groundwater and to maintain compliance by these facilities, activities and practices with preventive action limits, unless compliance with the preventive action limits is not technically and economically feasible."

3. Pursuant to s. 160.21 (2), Stats., the point of standards application relative to the performance of stormwater and clearwater subsurface infiltration plumbing systems is any of the following:

a. Any point of present groundwater use for potable water supply.

b. Any point beyond the boundary of the property on which the facility, practice or activity is located.

(c) *Deleterious substance.* Substances deleterious to a stormwater or clearwater subsurface infiltration plumbing system shall be intercepted, diluted or treated in accordance with s. SPS 382.34 prior to the substance discharging into a stormwater or clearwater infiltration system.

History: CR 04−035: cr. Register November 2004 No. 587, eff. 12−1−04; **correction in (2) (a), (b) 1., 2., (3) (a), (b) 1., (c) 1., 2., (f) 1., (4) (b) 4., (5) (a), (c), Table 382.365−3 made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 382.37 Sanitation facilities and campgrounds. (1) COMPOSTING SYSTEMS. (a) Composting systems which employ water or other liquids as a transport medium for wastes shall conform with this subsection.

Note: Composting systems where water or other liquids are not employed as a transport medium are addressed under ch. SPS 391.

(b) The materials, design, construction and performance of a composting system which employs water or other liquids as a transport medium for wastes shall conform to NSF Standard 41.

(c) All composting systems shall be listed by a testing agency acceptable to the department.

Note: For a listing of agencies acceptable to the department, see Appendix A−384.11.

(d) 1. Components for the storage or treatment of wastes shall be continuously ventilated.

2. Ventilation ducts or vents for the composting system shall conform to s. SPS 382.31 (16).

(e) 1. The disposal of the end product from a composting system shall be in accordance with 40 CFR Part 503, Standards for the Use or Disposal of Sewage Sludge.

Note: EPA materials relating to EPA 503, including, "Domestic Septage Regulatory Guidance: A Guide to the EPA 503 Rule", are available from the Office of Water Resource, US EPA, 401 M Street SW, Washington D.C. 20460.

2. The disposal of any liquid from a composting system shall be either to a publicly owned treatment works or a POWTS conforming to ch. SPS 383.

(f) The connection of potable water supplies to a composting system shall be protected in accordance with s. SPS 382.41.

(g) The drainage systems for the composting system shall conform to the applicable requirements of ss. SPS 382.30 to 382.36 and the manufacturer's specifications.

(2) SANITARY DUMP STATIONS. (a) Sanitary dump stations which are used to receive domestic wastes and domestic wastewater from the holding tanks of travel trailers, recreational vehicles or other similar mobile vehicles, and transfer containers shall conform with this subsection.

Note: See Appendix A−382.37 (2) for further explanatory material.

(b) The drain receptor for a sanitary dump station shall be at least 4″ in diameter.

(c) 1. The drain receptor shall be provided with a self−closing cover.

2. The cover for the drain receptor shall be operable without touching the cover with one's hands.

(d) The drain receptor shall be surrounded by an impervious pad at least 6 feet in diameter. The pad shall be:

1. Pitched toward the drain receptor with a minimum slope of ¼″ per foot; and

2. Of sufficient strength to sustain anticipated loads.

(e) The drain receptor shall be trapped in accordance with s. SPS 382.32.

(f) The drain receptor for a sanitary dump station that is installed within an enclosed structure shall be vented in accordance with s. SPS 382.31.

(g) A supply of water shall be provided to wash down the drain receptor and pad. The water supply shall be:

1. Provided with cross connection control in accordance with s. SPS 382.41; and

2. Labeled indicating that the supply is not for drinking purposes.

(h) 1. Aboveground drains shall be constructed of approved materials in accordance with s. SPS 384.30 (2) (a).

2. Aboveground water supply piping shall be constructed of approved materials in accordance with s. SPS 384.30 (4) (e).

(3) CAMPGROUNDS. (a) *Drain systems.* Sewers serving campgrounds shall comply with the provisions in s. SPS 382.30 and all of the following:

1. A drain line serving a recreational vehicle shall discharge to a minimum 4−inch diameter campsite receptor by means of an indirect waste pipe.

2. One campsite receptor shall be designed to serve no more than 4 recreational vehicles.

3. Where 2 or more drain lines are designed to discharge into the same campsite receptor, an increaser shall be installed in the vertical portion of the trap riser to accommodate the drains.

4. The rim of a campsite receptor shall terminate no less than 4 inches above the finished grade.

5. The rim of a campsite receptor shall not terminate at an elevation that is higher than the water supply termination serving the same site.

6. A vent is not required to serve the trap serving a campsite receptor.

7. When not in use, a campsite receptor shall be capped.

(b) *Water supply systems.* Water supply systems serving campgrounds shall comply with the provisions in s. SPS 382.40 and all of the following:

1. An accessible control valve shall be installed at the most upstream point of the campground water supply distribution system and downstream of the municipal meter or pressure tank.

2. If water is provided to a campsite, individual approved backflow protection shall serve each hose connection in accordance with s. SPS 382.41.

3. A campsite water supply riser shall terminate no less than 18 inches above finished grade.

Note: See Appendix for further explanatory material.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−002: cr. (2) (h) and (3) Register April 2003 No. 568, eff. 5−1−03; CR 08−055: am. (3) (b) 3. Register February 2009 No. 638, eff. 3−1−09; **correction in (1) (d) 2., (e) 2., (f), (g), (2) (e), (f), (g) 1., (h) 1., 2., (3) (a) (intro.), (b) (intro.), 2. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 382.38 Discharge points. (1) PURPOSE. The purpose of this section is to establish allowable discharge points for wastewater discharging from plumbing systems.

(2) SCOPE. The provisions of this section set forth the requirements for the discharge points for wastewater based on the use of the fixtures, appurtenances, appliances and devices discharging into the plumbing system.

(3) GENERAL REQUIREMENTS. (a) Wastewater from plumbing systems shall be discharged as specified in Table 382.38−1.

(b) Wastewater from uses other than those listed in Table 382.38−1, shall be discharged as specified by the department on a site−specific basis.

Table 382.38 – 1

Allowable Discharge Points by Fixture or Specific Uses

Use or Fixture	Allowable Discharge Points					
	POWTS[a]	Municipal Sanitary Sewer	Municipal Storm Sewer	Ground Surface	Combined Sanitary−Storm Sewer	Subsurface Dispersal [i]
1. Cross connection control device or assembly [see s. SPS 382.33 (9) (i)]	X	X		X [b, c,e]	X	
2. Domestic wastewater	X	X			X	
3. Condensate from high efficiency furnace or water heater	X	X			X	
4. Drinking fountain	X	X	X	X [b]	X	X
5. Elevator pit drain [see s. SPS 382.33 (9) (f)]			X	X [b]	X	X
6. Enclosed public parking levels	X	X		X [b]	X	X
7. Industrial wastewater [h]	X[f]	X			X	
8. Municipal well pump house floor drain and sink	X	X		X [b]	X	X
9. One− and 2−family garage floor area [see s. SPS 382.34 (4) (b)]	X	X		X [b]	X	
10. Residential living unit air conditioner condensate	X	X [g]	X [c]	X [b]	X	X
11. Storm water, groundwater, fire sprinkler test discharge and clear water	X	X [g]	X [c]	X [b]	X	X
12. Secondary roof drain systems				X [j]		
13. Swimming pool or wading pool — diatomaceous earth filter backwash	X	X			X	
14. Swimming pool or wading pool — drain wastewater	X	X [b]	X [b,c]	X [b,c]	X [b]	X
15. Swimming pool or wading pool — sand filter backwash	X	X [b]	X [b,c]	X [b,c]	X [b]	X
16. Water heater temperature and pressure relief valve [see s. SPS 382.40 (5)]	X	X	X	X [b]	X	X
17. Wastewater from water treatment device	X	X	X [c]	X [b,c]	X	X
18. Whirlpool backwash drain and wastewater	X	X	X [c]	X [b,c]	X	
19. Discharges not specifically listed above	Contact the department					

[a] Allowed when the POWTS is designed to include designated wastewater.

[b] Unless prohibited by local municipality and when no nuisance is created.

[c] A discharge permit may be required by the department of natural resources.

[e] Allowed for exterior installation and when no sanitary sewer is in the building.

[f] Refer to the department of natural resources for discharge regulations.

[g] Fifty gallons per day.

[h] The department of natural resources may require WPDES permits for industrial discharges and may allow other options.

[i] Subsurface dispersal must comply with s. SPS 382.365.

[j] Discharge separate from the primary system and where observable.

History: CR 02−002: cr. Register April 2003 No. 568, eff. 5−1−03; CR 02−129: am. Table 82.38−1 line 15 Register January 2004 No. 577, eff. 2−1−04; CR 04−035: am. Table 82.38−1 Register November 2004 No. 587, eff. 12−1−04; CR 08−055: am. Table 82.38−1 Register February 2009 No. 638, eff. 3−1−09; **correction in (3) (a), (b), Table 382.38−1 made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

Subchapter IV — Water Supply Systems

SPS 382.40 Water supply systems. (1) SCOPE. The provisions of this section set forth the requirements for the design and installation of water supply systems.

Note: Chapter NR 811 governs the design and construction of community water systems or waterworks.

(2) MATERIALS. All water supply systems shall be constructed of approved materials in accordance with ch. SPS 384.

(3) GENERAL. (a) *Water quality.* 1. Every outlet providing water shall be provided with water of the quality as specified under s. SPS 382.70 (3) for the intended use.

2. Nonpotable water may be supplied to water treatment devices or systems designed to treat water for compliance with Table 382.70−1.

(b) *Hot water required.* Except as provided in subds. 1. and 2., hot water shall be provided to all plumbing fixtures, appliances and equipment used for personal washing, culinary purposes or laundering.

1. Tempered water. a. Tempered water or hot water shall be provided to lavatories, wash fountains and shower heads which are not located in dwelling units or living units.

b. Tempered water supplied to serve multiple lavatories, wash fountains and shower heads shall be provided by means of temperature−actuated mixing valves that comply with ASSE 1017.

2. Lavatories located in park shelters and bath houses which are not open during the period from November 15 to March 15 and which are not places of employment shall not be required to be provided with hot water.

3. Lavatories located in waysides which are not places of employment shall not be required to be provided with hot water.

Note: The exception of providing hot water under subds. 1. to 3. does not supersede the requirements of other state agencies for providing hot water.

(c) *Protection.* 1. Pursuant to s. NR 811.07 the interconnection of 2 or more water supply systems, one system served by a public supply source and the other system served by another supply source is prohibited, unless approved in writing by the department of natural resources.

2. A water supply system shall be designed and installed in accordance with s. SPS 382.41 and maintained to prevent nonpotable liquids, solids or gases from being introduced into the potable water supply system through cross connections.

3. a. Except as provided in subd. 3. b., when a connection between 2 water supply systems exists, one system having a higher degree of hazard than the other system as specified in s. SPS 382.41, the water supply system with a lower degree of hazard shall be protected as specified in s. SPS 382.41.

b. When a water treatment device is provided to lower the concentration of a health−related contaminant, cross connection control shall not be required to protect the water supply system downstream of the treatment device from the upstream contaminated source.

(d) *Identification.* 1. Where buildings or facilities contain water supply systems where the water supply systems have different degrees of hazard, then those water supply systems shall be labeled in accordance with this section.

a. Aboveground piping supplying water other than potable shall be labeled by tags or colored bands according to Table 382.40–1a.

Note: When identifying potable water piping or valves with tags or bands, label according to Table 382.40–1a.

b. Valves supplying other than potable water shall be identified by tags according to Table 382.40–1a.

c. The tags or colored bands shall be placed at intervals of not more than 25 feet. Where piping passes through a wall, floor or roof, the piping shall be so identified on each side of the wall and within each compartment.

d. The colored bands shall be at least 3 inches wide and shall bear text identifying the water or the specific use.

e. Tags used to identify water outlets, valves and piping shall be of metal or plastic in the shape specified in Table 382.40–1a.

f. The lettering on the triangular and circular tags shall be at least 1/2 inch in height.

g. A hose bibb intended to discharge water that does not meet drinking water quality as specified in s. SPS 382.70, shall be labeled as nonpotable or so identified for the specific use or uses, and shall be equipped with a removable handle.

2. Piping downstream of cross connection control assemblies as listed in Table 382.22–1 shall be labeled with bands or tags as specified in subd. 1. a. to f.

3. Where a building or a structure is served by 2 distribution systems, one system supplied by a public water supply and the other system supplied by a private well, each water distribution system shall be identified to indicate the supply source.

4. The installation of each reduced pressure principle backflow preventer, reduced pressure fire protection principle backflow preventer, reduced pressure detector fire protection backflow preventer, spill resistant vacuum breaker and pressure vacuum breaker shall display a department assigned identification number.

a. The method to display the department assigned identification number shall be a weather−resistant tag, securely attached to the cross connection control assembly.

b. The tag shall contain at least the following information.

Wisconsin Department of Safety and Professional Services Identification/Object Number _____ Cross Connection Control Assembly Do Not Remove This Tag

c. The department assigned identification number shall be printed in the blank area with a permanent, waterproof marker or similar indelible method.

Note: To obtain a department assigned identification number for a cross connection control assembly contact the department at the Safety and Buildings Division; P.O. Box 7302; Madison, Wisconsin 53707−7302; telephone (608) 267−2497; Fax (608) 267−9723; TTY (608) Contact through Relay.

(e) *Multipurpose piping system.* 1. Except as provided in subd. 2., a multipurpose piping system shall be designed and installed in accordance with this section and NFPA 13D.

Note: Pursuant to this subdivision and sub. (2), materials for multipurpose piping systems need to be acceptable under the NFPA 13D standard and s. SPS 384.30, Table 384.30–9.

Note: See s. SPS 321.095 of the Dwelling Code and s. SPS 362.0903 (10) of the Commercial Building Code as to fire protection provisions for multipurpose piping systems.

2. Fire department connections are prohibited in a multipurpose piping system.

(4) CONTROL VALVES. (a) *Private water mains.* Private water mains shall be provided with control valves as specified in this subsection.

1. 'Corporation cocks.' a. If a private water main 2″ or less in diameter connects to a public water main, a corporation cock shall be installed at the connection to the public water main.

b. If a private water main 2−1/2″ or larger in diameter connects to a public water main, a corporation cock shall be installed not more than 8 feet from the connection to the public water main.

2. 'Curb stops.' a. Except as provided in subd. 2. b., if a private water main connects to public water main, a curb stop shall be installed in the private water main between the corporation cock and the property line.

b. If a private water main 2−1/2″ or larger in diameter connects to a public water main, one control valve may serve as the corporation cock and the curb stop. The control valve shall be located not more than 8 feet from the connection to the public water main and shall be accessible for operation.

Note: See Appendix A−382.40 (4) for further explanatory material.

(b) *Water services.* Water services shall be provided with control valves as specified in this subsection.

1. 'Corporation cocks.' a. If a water service 2″ or less in diameter connects to a public water main, a corporation cock shall be installed at the connection to the public water main.

b. If a water service 2−1/2″ or larger in diameter connects to a public water main, a corporation cock shall be installed not more than 8 feet from the connection to the public water main.

2. 'Curb stops.' a. Except for water services serving farm buildings and farm houses, a curb stop shall be installed in each water service which connects to a private water main. The curb stop shall be located outside the building served by the water service.

b. Except as provided in subd. 2. c., a curb stop shall be installed in each water service which connects to a public water main. The curb stop shall be located between the corporation cock and the property line.

c. If a water service 2−1/2″ or larger in diameter connects to a public water main, one control valve may serve as the corporation cock and the curb stop. The control valve shall be located not more than 8 feet from the connection to a public water main and shall be accessible for operation.

3. 'Building control valves.' If a water service serves a building, a building control valve shall be provided in the water service as specified in this subsection.

a. If the water service connects to a public water supply or to a private water supply which has an external pressure tank, the building control valve shall be installed inside the building and located within 3 feet of developed length from the point where the water service first enters the building. If a water meter is provided, the building control valve shall be located upstream of the water meter.

b. If a private water supply includes an internal pressure tank, the building control valve shall be installed inside the building and located within 3 feet of developed length downstream from the internal pressure tank.

Note: See Appendix for further explanatory material.

(c) *Water distribution systems.* 1. Control valves shall be installed in water distribution systems serving public buildings as specified in this subdivision.

a. If a water meter is provided, a control valve shall be installed within 3 feet of developed length downstream from the outlet of the water meter. If bypass piping is provided around a water meter, a control valve shall be installed in the bypass piping.

Note: See sub. (8) (d) 3. for the requirements relating to the bypassing of water meters.

b. A control valve shall be installed in the supply piping to each water heater and water treatment device and in the fixture supply to each plumbing fixture, plumbing appliance and piece of equipment. The control valve may be part of the bypass piping or an internal part of a water treatment device. When the valve is an internal part of the water treatment device, the device shall be removable for service.

c. If a hot water circulation system is provided, a control valve shall be installed on both the inlet and outlet piping to the circulation pump. If a hot water circulation system has 2 or more return pipe lines, a balancing control valve shall be installed in each return piping line.

d. The water distribution system for buildings with more than 4 dwelling units or living units shall be provided with control valves in such numbers and at such locations so that the water supplied to all the units within the building can be isolated into groups of 4 of less units.

Note: See sub. (8) (g) for the valve requirements for water temperature control.

2. Control valves shall be installed in water distribution systems serving one− and 2−family dwellings as specified in this subdivision.

a. If a water meter is provided, a control valve shall be installed within 3 feet of developed length downstream from the outlet of the water meter. If bypass piping is provided around a water meter, a control valve shall be installed in the bypass piping.

Note: See sub. (8) (d) 3. for the requirements relating to the bypassing of water meters.

b. A control valve shall be installed in the supply piping to each water heater and water treatment device and in the fixture supply to each water closet, exterior hose bibb, plumbing appliance and piece of equipment. When the valve is an internal part of the water treatment device, the device shall be removable for service.

c. If a hot water circulation system is provided, a control valve shall be installed on both the inlet and outlet piping to the circulation pump. If a hot water circulation system has 2 or more return pipe lines, a balancing control valve shall be installed in each return piping line.

(5) HOT WATER SUPPLY SYSTEMS. (a) *General.* Water heating systems shall be sized to provide sufficient hot water to supply peak demand.

(b) *Temperature maintenance.* If the developed length of hot water distribution piping from the source of the hot water supply to a plumbing fixture or appliance exceeds 100 feet, a circulation system or self−regulating electric heating cable shall be provided to maintain the temperature of the hot water within the distribution piping.

1. If a circulation system is used to maintain the temperature, no uncirculated hot water distribution piping may exceed 25 feet in developed length.

2. If a self−regulating electric heating cable is used to maintain the temperature, the cable shall extend to within 25 feet of each fixture or the appliance.

3. Water distribution piping conveying circulated water or served by a self−regulating electric heating cable shall be insulated to limit the heat loss at the external surface of the pipe insulation to a maximum of 25 BTUs per hour per square foot for aboveground piping and 35 BTUs per hour per square foot for underground piping. The maximum heat loss shall be determined at a temperature differential, T, equal to the maximum water temperature minus a design ambient temperature no higher than 65°F.

4. Water distribution piping served by self−regulating electric heating cable shall be identified as being electrically traced in accordance with ch. SPS 316.

5. The installation of self−regulating electric heating cable may be subcontracted by a plumber to another trade.

Note: See A−382.40 (5) for pipe insulation requirements.

(c) *Water heaters.* All water heaters and safety devices shall be designed and constructed in accordance with s. SPS 384.20 (5) (p).

Note: Water heaters are to be installed in accordance with the requirements specified in chs. SPS 361 to 366 and chs. SPS 320 to 325 with respect to energy efficiency, enclosures and venting.

(d) *Safety devices.* Water heaters shall be equipped with safety devices as specified in this paragraph.

1. All pressurized storage−type water heaters and unfired hot water storage tanks shall be equipped with one or more combination temperature and pressure relief valves. The temperature steam rating of a combination temperature and pressure relief valve or valves shall equal or exceed the energy input rating in BTU per hour of the water heater. No shut off valve or other restricting device may be installed between the water heater or storage tank and the combination temperature and pressure relief valve.

Note: The temperature steam rating of a combination temperature and pressure relief valve is commonly referred to as the AGA temperature steam rating.

2. All pressurized non−storage type water heaters shall be provided with a pressure relief valve installed at the hot water outlet with no shut off valve between the heater and the relief valve.

3. Temperature and pressure relief valves shall be installed so that the sensing element of the valve extends into the heater or tank and monitors the temperature in the top 6″ of the heater or tank.

4. A vacuum relief valve shall be installed in each water heater and hot water storage tank which, when measured from the bottom of the heater or tank, is located more than 20 feet above any faucet or outlet served by the heater or tank.

5. Every relief valve which is designed to discharge water or steam shall be connected to a discharge pipe.

a. The discharge pipe and fittings shall be made of a material acceptable for water distribution piping in accordance with s. SPS 384.30 (4) (e) 1.

b. The discharge pipe and fittings shall have a diameter not less than the diameter of the relief valve outlet.

c. The discharge pipe may not be trapped.

d. No valve may be installed in the discharge pipe.

e. The discharge pipe shall be installed to drain by gravity flow to a floor served by a floor drain or to a receptor in accordance with s. SPS 382.33 (8). The outlet of the discharge pipe shall terminate within 6″ over the floor or receptor, but not less than a distance equal to twice the diameter of the outlet pipe. The outlet of the discharge pipe may not be threaded.

f. The discharge pipe for a water heater shall terminate within the same room or enclosure within which the water heater or hot water storage tank is located.

(e) *Controls.* 1. All hot water supply systems shall be equipped with automatic temperature controls capable of adjustments from the lowest to the highest acceptable temperature settings for the intended use.

2. A separate means shall be provided to terminate the energy supplied to each water heater and each hot water circulation system.

(6) LOAD FACTORS FOR WATER SUPPLY SYSTEMS. (a) *Intermittent flow fixtures.* The load factor for intermittent flow fixtures on water supply piping shall be computed in terms of water supply fixture units as specified in Tables 382.40−1a and 382.40−2 for the corresponding fixture and use. Water supply fixture units may be converted to gallons per minute in accordance with Table 382.40−3 or 382.40−3e.

(b) *Continuous flow devices.* The load factor for equipment which demands a continuous flow of water shall be computed on the basis of anticipated flow rate in terms of gallons per minute.

Table 382.40−1a
Distribution and Service

Supply	Tag and Band Color	Tag Shape	Tag Size	Tag Legend[a]
Potable	Green	Round	3″ diameter	Safe Water
Nonpotable	Yellow	Triangle	4″ sides	Nonpotable Water or Not Safe for Drinking
Reuse (Nonpotable)	Purple	Triangle	4″ sides	Nonpotable Water or Not Safe for Drinking or Specific Use[b]
Device Specific[c]	Gray	Triangle	4″ sides	Specific Use[b]

[a] All nonpotable water outlets shall be identified at the point of use for each outlet with the following legends or as otherwise approved by the department.
[b] Tag should reflect the intended use.
[c] Serving an individual or similar plumbing fixtures or appliances.

Table 382.40−1b
Water Supply Fixture Units for Nonpublic Use Fixtures

Type of Fixture[a]	Water Supply Fixture Units (wsfu)		
	Hot	Cold	Total
Automatic Clothes Washer	1.0	1.0	1.5
Bar Sink	0.5	0.5	1.0
Bathtub, with or without Shower Head	1.5	1.5	2.0
Bidet	1.0	1.0	1.5
Dishwashing Machine	1.0		1.0
Glass Filler		0.5	0.5
Hose Bibb:			
1/2″ diameter		3.0	3.0
3/4″ diameter		4.0	4.0
Kitchen Sink	1.0	1.0	1.5
Laundry Tray, 1 or 2 Compartment	1.0	1.0	1.5
Lavatory	0.5	0.5	1.0
Manufactured Home	−−	15	15
Shower, Per Head	1.0	1.0	1.5
Water Closet, Flushometer Type		6.0	6.0
Water Closet, Gravity Type Flush Tank		2.0	2.0
Bathroom Groups:			
Bathtub, Lavatory and Water Closet−FM[b]	2.0	7.5	8.0
Bathtub, Lavatory and Water Closet−FT[c]	2.0	3.5	4.0
Shower Stall, Lavatory and Water Closet−FM	1.5	7.0	7.5
Shower Stall, Lavatory and Water Closet−FT	1.5	3.0	3.5

[a] For fixtures not listed, factors may be assumed by comparing the fixture to a listed fixture which uses water in similar quantities and at similar rates.
[b] FM means flushometer type.
[c] FT means flush tank type.

Table 382.40−2
Water Supply Fixture Units for Public Use Fixtures

Type of Fixture[a]	Water Supply Fixture Units (wsfu)		
	Hot	Cold	Total
Automatic Clothes Washer, Individual	2.0	2.0	3.0
Automatic Clothes Washer, Large Capacity	b	b	b
Autopsy Table	2.0	2.0	3.0
Bathtub, With or Without Shower Head	2.0	2.0	3.0
Coffeemaker		0.5	0.5
Dishwasher, Commercial	b	b	b
Drink Dispenser		0.5	0.5
Drinking Fountain		0.25	0.25
Glass Filler		0.5	0.5
Health Care Fixtures:			
Clinic sink	2.0	7.0	7.0
Exam/treatment sink	0.5	0.5	1.0
Sitz bath	1.5	1.5	2.0
Surgeon washup	1.5	1.5	2.0
Hose Bibb:			
$^1/_2$″ diameter		3.0	3.0
$^3/_4$″ diameter		4.0	4.0
Icemaker		0.5	0.5
Lavatory	0.5	0.5	1.0
Shower, Per Head	2.0	2.0	3.0
Sinks:			
Bar and Fountain	1.5	1.5	2.0
Barber and Shampoo	1.5	1.5	2.0
Cup		0.5	0.5
Flushing Rim		7.0	7.0
Kitchen and Food Preparation per faucet	2.0	2.0	3.0
Laboratory	1.0	1.0	1.5
Service sink	2.0	2.0	3.0
Urinal:			
Syphon Jet		4.0	4.0
Washdown		2.0	2.0
Wall Hydrant, Hot and Cold Mix:			
$^1/_2$″ diameter	2.0	2.0	3.0
$^3/_4$″ diameter	3.0	3.0	4.0
Wash Fountain:			
Semicircular	1.5	1.5	2.0
Circular	2.0	2.0	3.0
Water Closet:			
Flushometer		6.5	6.5
Gravity Type Flush Tank		3.0	3.0

[a] For fixtures not listed, factors may be assumed by comparing the fixture to a listed fixture which uses water in similar quantities and at similar rates.
[b] Load factors in gallons per minute, gpm, based on manufacturer's requirements.

Table 382.40−3
Conversion of Water Supply Fixture Units to Gallons Per Minute

Water Supply Fixture Units	Gallons per Minute	
	Predominately Flushometer Type Water Closets or Syphon Jet Urinals	Predominately Flush Tank Type Water Closets or Washdown Urinals
1	—	1
2	—	2
3	—	3
4	10	4
5	15	4.5
6	18	5
7	21	6
8	24	6.5
9	26	7
10	27	8
20	35	14
30	40	20
40	46	24
50	51	28
60	54	32
70	58	35
80	62	38
90	65	41
100	68	42
120	73	48
140	78	53
160	83	57
180	87	61
200	92	65
250	101	75
300	110	85
400	126	105
500	142	125
600	157	143
700	170	161
800	183	178
900	197	195
1000	208	208
1250	240	240
1500	267	267
1750	294	294
2000	321	321
2250	348	348
2500	375	375
2750	402	402
3000	432	432
4000	525	525
5000	593	593

Note: Values not specified in the table may be calculated by interpolation.

Table 382.40–3e
Conversion of Water Supply Fixture Units to Gallons Per Minute for Water Treatment Devices[a] Serving an Individual Dwelling[b]

Water Supply Fixture Units (WSFUs)	Gallons Per Minute (GPM)
1	1
2	2
3	3
4	4
5	4.5
6	5
7	6
8	6.5
25	7
35	8
40	9

[a] Treatment devices providing treatment for compliance with Table 382.70–1 shall use Table 382.40–3 for conversion.

[b] Table shall not be used for converting hose bibb, high flow fixture or hydrant wsfu.

(7) SIZING OF WATER SUPPLY PIPING. The sizing of the water supply system shall be based on the empirical method and limitations outlined in this subsection or on a detailed engineering analysis acceptable to the department.

(a) *Methodology.* The determination of minimum pipe sizes shall take into account the pressure losses which occur throughout the entire water supply system and the flow velocities within the water distribution system. Calculations for sizing a water distribution system shall include:

1. The load factor in water supply fixture units or gallons per minute on the piping;

2. The minimum pressure available from the water main or pressure tank;

3. The pressure loss due to the differences in elevation from the:

a. Water main or pressure tank to the building control valve; and

b. Building control valve to the controlling plumbing fixture;

4. The pressure losses due to flow through water heaters, water treatment devices, water meters and backflow preventers;

5. The minimum flow pressure needed at the controlling plumbing fixture; and

6. The pressure losses due to flow friction through piping, fittings, valves and other plumbing appurtenances. This pressure loss may be calculated in terms of equivalent lengths of piping. The equivalent length of piping to a controlling plumbing fixture, including fittings, valves and other appurtenances, may be obtained by multiplying the developed length by 1.5.

Note: See Appendix for further explanatory material.

(b) *Private water mains and water services.* Private water mains and water services shall be designed to supply water to the water distribution systems to maintain the minimum flow pressures specified in par. (d), but shall not be less than 3/4″ in diameter.

Note: See Appendix for further explanatory material.

(c) *Maximum loading.* The calculated load on any portion of the water distribution system may not exceed the limits specified in Tables 382.40−4 to 382.40−9.

(d) *Pressure.* 1. Except as provided in subd. 1. a. to c., water supply systems shall be designed to provide at least 8 psig of flow pressure at the outlets of all fixture supplies.

a. The flow pressure at the outlets of the fixture supplies serving siphonic type urinals, washdown type urinals and washdown type water closets, siphonic type flushometer water closets and campsite water supply hose connections shall be at least 15 psig.

b. The flow pressure at the outlets of the fixture supplies serving one piece tank type water closets, pressure balance mixing valves, manufactured homes, and thermostatic mixing valves shall be at least 20 psig.

c. The flow pressure at the outlets of the fixture supplies serving blowout type urinals and blowout type water closets shall be at least 25 psig.

2. a. Except as provided in subd. 3., if the water pressure available from a water main or private water supply exceeds 80 psig, a pressure reducing valve and strainer, if a strainer is not a component of the valve, shall be installed in the water distribution system.

b. A pressure reducing valve required under subd. 2. a. shall be installed upstream from all plumbing fixtures and plumbing appliances and downstream from the water meter of an utility, if a meter is provided.

3. A pressure reducing valve shall not be required to be installed in a water distribution system which supplies water directly to a water pressure booster pump.

4. If the pressure available from the water main or private water supply is inadequate by calculation to provide the minimum pressures specified in subd. 1., a hydropneumatic pressure booster system or a water pressure booster pump shall be installed to increase the supply of water.

a. Each water pressure booster pump shall be provided with an automatic low pressure cut−off switch. The cut−off switch shall be located on the inlet side of the pump and shall be set to terminate the energy supplied to the pump when a positive pressure of less than 10 psig occurs.

b. A vacuum relief valve not less than one−half inch in diameter shall be installed in each water pressure tank, if the bottom of the pressure tank is more than 20 feet above any water supply outlet served by the pressure tank.

(e) *Maximum velocity.* A water distribution system shall be designed so that the flow velocity does not exceed 8 feet per second.

(f) *Minimum sizes.* 1. Water distribution piping 1/2″ in diameter serving 2 or more plumbing fixtures may not have a load of more than 2 water supply fixture units.

2. Water distribution piping 1/2″ in diameter serving a shower which is not individually pressure balanced or individually thermostatically blended may not serve any additional fixtures.

(g) *Minimum sizes for fixture supplies.* Except as provided in subds. 1. to 3., the fixture supplies serving all plumbing fixtures, appliances and pieces of equipment shall be at least 1/2″ in diameter.

1. Fixture supplies serving syphon jet type urinals shall be at least 3/4″ in diameter.

2. Fixture supplies serving flushometer type water closets shall be at least one inch in diameter.

3. Fixture supplies serving emergency eye wash or shower outlets shall be not less than recommended by the manufacturer.

(h) *Maximum lengths of fixture supply connectors.* 1. a. Except as provided in subd. 1. b. and c., fixture supply connectors may not exceed more than 24″ in developed length upstream from a plumbing fixture or the body of a faucet.

b. A fixture supply connector located downstream of a water cooler, water treatment device or water heater which individually serves a faucet or outlet may not exceed more than 10 feet in developed length.

c. A fixture supply connector located upstream of a water treatment device serving no more than 2 fixtures or outlets may not exceed 10 feet in developed length.

2. Fixture supply connectors may not extend more than 10 feet in developed length upstream of a plumbing appliance.

(8) INSTALLATION. (a) *Frost protection.* 1. Adequate measures shall be taken to protect all portions of the water supply system from freezing. All private water mains and water services shall be installed below the predicted depths of frost specified in s. SPS 382.30 (11) (c) 2. d., Figure 382.30−1 and Table 382.30−6, unless other protective measures from freezing are taken.

2. A hose bibb or a hydrant that penetrates an exterior wall of a heated structure shall be a frost proof and self−draining type.

Note: See s. SPS 382.41 (4) (m) relative to cross connection control devices.

(b) *Location.* 1. Exterior water supply piping may not be located in, under or above sanitary sewer manholes, or POWTS treatment, holding or dispersal components.

2. Except as provided in subd. 3., exterior water supply piping shall be located at least 10 feet horizontally away from a non−pressurized POWTS component.

3. If a private water main or a water service crosses a sanitary sewer, the water piping within 5 feet of the point of crossing shall be installed in accordance with any of the following requirements:

a. The water piping shall be installed at least 12 inches above the top of the sewer.

b. The water piping shall be installed at least 18 inches below the bottom of the sewer.

c. The water or sewer piping shall be installed within a waterproof sleeve made of materials as specified for sanitary building sewers in s. SPS 384.30 (2).

4. Except as permitted in subd. 5., private water mains and water services shall be installed at least 5 feet horizontally from any sanitary sewer.

Note: The Department of Natural Resources has limitations for the separation of water mains and sanitary sewers.

5. Private water mains and water services may be installed less than 5 feet horizontally from a sanitary sewer if any of the following conditions are met:

a. The bottom of the water piping is installed at least 12 inches above the sewer.

b. The sewer is constructed of materials listed in Table 384.30−2.

c. The water service is 2 inches or less in diameter and is located more than 24 inches from the sewer.

6. The portion of a private water main or water service within 5 feet of developed length from the point where the water service first enters the building may be less than 12 inches above the sewer and within 24 inches of the sewer.

7. No private water main or water service may be installed within 6″ of a storm sewer.

Note: See Appendix A−382.30 (11) (d) for setback distance from yard hydrant to well.

8. Except as provided in subd. 3., no private water main or water service may be installed within 15 feet of a pressurized sanitary sewer or POWTS pump discharge piping.

9. No underground water supply storage tank shall be installed within 8 feet of a storage vessel containing a substance of a higher hazard than that contained in the water supply storage tank.

(c) *Limitations.* No private water main or water service may pass through or under a building to serve another building unless one of the following conditions are met:

1. The private water main or water service serves farm buildings or farm houses, or both that are all located on one property.

2. The private water main or water service serves buildings that are located on the same property and a document which indicates that the piping and distribution arrangement for the property and buildings will be recorded with the register of deeds no later than 90 days after installation.

(d) *Water distribution piping.* 1. Water distribution piping shall be supported in accordance with s. SPS 382.60.

2. Provisions shall be made to evacuate all water out of the water distribution system.

3. a. Except where parallel water meters are installed, water distribution piping shall be provided to bypass a water meter 1½″ or larger.

b. The minimum diameter of water distribution piping serving as a meter bypass shall be one nominal pipe size smaller than the meter.

4. Except as provided in subds. 5. and 6., a bypass shall be provided to serve a water treatment device. The bypass piping may be an internal part of the water treatment device.

5. A bypass shall not be required when a water treatment device serves no more than 2 fixtures or outlets.

6. A bypass shall be prohibited for a water treatment device installed to reduce a contaminant in order to comply with the provisions in s. SPS 382.70 (3).

(e) *Valves.* 1. All control valves installed in a water service, except a valve serving only as a corporation cock, shall be accessible.

2. Stop− and waste−type control valves may not be installed underground except in the following situations:

a. Fire hydrants intended for fire fighting.

b. Two−inch and larger diameter hydrants serving municipal wastewater treatment plants.

c. Emergency fixtures.

3. All control valves and fixture stop valves installed in a water distribution system shall be accessible. Control valves for the individual plumbing fixtures and appliances within dwelling units shall be accessible from within the dwelling unit.

(f) *Water hammer arrestors.* All plumbing fixtures, appliances and appurtenances with 3/8″ or larger inlet openings and with solenoid actuated quick closing valves shall be provided with water hammer arrestors. Water hammer arrestors shall be installed in the fixture supplies serving the fixtures, appliances or appurtenances. Water hammer arrestors shall be accessible.

(g) *Temperature control.* The water temperature to all showers in public buildings shall be controlled by thermostatic or combination thermostatic−pressure balanced mixing valves or by individually controlled pressure balanced mixing valves. A thermostatic or combination thermostatic−pressure balanced mixing valve may not be bypassed.

(h) *Fittings and connections.* The drilling and tapping of water supply piping shall be prohibited except for:

1. Corporation cocks for a water service or a private water main; and

2. Self−tapping valves which serve individual plumbing appliances.

(i) *Flushing and disinfection of potable water supply systems.* 1. a. Before a newly constructed water supply system is to be put into use, the piping of the system shall be filled with water and allowed to stand for at least 24 hours. After 24 hours each water outlet shall be flushed beginning with the outlet closest to the building control valve and then each successive outlet in the system. The flushing at each water outlet shall continue for at least one minute and until the water appears clear at the outlet.

b. Each portion of a water supply system which is altered or repaired shall be flushed for at least one minute and until the water appears clear.

2. New private water mains and extensions to private water mains shall be disinfected prior to use in accordance with AWWA C651 or the following method:

a. The pipe system shall be flushed with clean water until no dirty water appears at the points of outlet.

b. The system or part thereof shall be filled with a solution of water and chlorine containing at least 50 parts per million of chlorine and the system or part thereof shall be valved off and allowed to stand for 24 hours or the system or part thereof shall be filled with a solution of water and chlorine containing at least 200 parts per million of chlorine and allowed to stand for 3 hours.

c. Following the allowed standing time, the system shall be flushed with clean potable water.

d. The procedures shall be repeated if it is shown by a bacteriological examination that contamination still exists in the system.

3. The department may require a water quality analysis to be done for a new or repaired water supply system. The analysis shall be performed in accordance with acceptable nationally recognized laboratory practices. If the water supply system has been disinfected, water samples for the analysis may not be taken sooner than 24 hours after disinfection.

Note: See s. SPS 384.30 (1) regarding the bending of pipe and protection from puncture.

4. New or repaired combination water services or combination private water mains shall be flushed and disinfected prior to use in accordance with NFPA 24.

(j) *Water softeners.* Ion exchange water softeners used primarily for water hardness reduction that, during regeneration, discharge a brine solution shall be of a demand initiated regeneration type equipped with a water meter or a sensor unless a wastewater treatment system downstream of the water softener specifically documents the reduction of chlorides.

(k) *Locating requirements.* 1. A means to locate buried non−metallic water services and private water mains connected to municipal supply systems shall be provided in accordance with the options under s. SPS 382.30 (11) (h), except as provided in subds. 2. and 3.

2. Tracer wire insulation color for non−metallic, potable water pipe shall be blue.

3. Tracer wire insulation color for non−metallic, non−potable water pipe shall be purple.

History: 1−2−56; r. and recr. Register, November, 1972, No. 203, eff. 12−1−72; r. and recr. Register, February, 1979, No. 278, eff. 3−1−79; renum. from H 62.13, Register, July, 1983, No. 331, eff. 8−1−83; renum. from ILHR 82.13 and r. and recr. (2) (b) and (4) (d) 1., am. (4) (c) 3. and (6) (a) (intro.), cr. (6) (b), Register, February, 1985, No. 350, eff. 3−1−85; r. and recr. Register, May, 1988, No. 389, eff. 6−1−88; am. (5) (d) 5. a., r. and recr. (7) (h) 1. and (8) (c), renum. (8) (c) 2. to 6. to be (8) (b) 4. to 8. and am. (8) (b) 4. c., Register, August, 1991, No. 428, eff. 9−1−91; am. (8) (b) 1. and 2., Register, April, 1992, No. 436, eff. 5−1−92; renum. (3) (c) and (8) (a) to be (3) (c) 2. and (8) (a) 1. and am. (8) (a) 1., cr. (3) (c) 1., (e), (8) (a) 2. and Table 82.40−9, am. (7) (c), r. (3) (b) 1. b. and c., Register, February, 1994, No. 458, eff. 3−1−94; r. (5) (b) 3., renum. (5) (b) 4., 5. to be (5) (b) 3., 4., Register, December, 1996, No. 480, eff. 4−1−96; correction in (5) (b) 3., made under s. 13.93 (2m) (b) 7., Stats., Register, October, 1996, No. 490; r. and recr. (5) (b), Register, February, 1997, No. 494, eff. 4−1−97; reprinted to restore dropped copy, Register, April, 1997, No. 496; am. (3) (e) and (8) (b) 1. and 2., r. (8) (b) 3. and cr. (3) (f) and (8) (j), Register, April, 2000, No. 532, eff. 7−1−00; except (3) (f) eff. 5−1−00; cr. (3) (d) 3., am. (8) (g) and (i) 2., Register, December, 2000, No. 540, eff. 1−1−01; except (3) (d) 3., eff. 9−1−01; CR 02−002: r. and recr. (3) (a), (d) 1. (intro.) to b., (7) (h), (8) (c) and Tables 82.40−4 to 11, cr. (3) (a) 2., (c) 3. and (d) 1. h., am. (3) (b) 1., (4) (c) 1. b. and 2. b., (7) (d) 1. a. and b., (8) (d) 4., (g), and Tables 82.40−1 and 2, r. (3) (e), renum. (3) (f) and (8) (b) 4. to 8. to be (3) (e) and (8) (b) 3. to 7., Register April 2003 No. 568, eff. 5−1−03; CR 02−129: am. (4) (c) 1. b. Register January 2004 No. 577, eff. 2−1−04, correction in (8) (b) 5. made under s. 13.93 (2m) b. 7., Stats., Register January 2004 No. 577; CR 04−035: r. (3) (e) 2. c., r. and recr. Table 82.40−9, cr. (8) (i) 4. Register November 2004 No. 587, eff. 12−1−04; CR 06−120: r. and recr. (3) (e) 2. b., cr. (3) (e) 2. c. Register February 2008 No. 626, eff. 3−1−08; CR 07−069: cr. (8) (k) Register February 2008 No. 626, eff. 3−1−08; CR 07−100: am. (8) (b) 2. Register September 2008 No. 633, eff. 10−1−08; CR 08−055: am. (3) (b) 1. b., (d) 3. (intro.), (5) (c), (6) (a), (7) (d) 1. b., (8) (b) 2., (j), Tables 82.40−1 and 82.40−2, r. and recr. (3) (e), (8) (e) 2., cr. (8) (b) 8., (d) 3. b. and Table 82.40−3e, renum. (8) (d) 3. to be (8) (d) 3. a. Register February 2009 No. 638, eff. 3−1−09; CR 10−064: am. (3) (a) (title), (c) 1., (5) (a), (6) (a), (8) (b) 3. to 6.,Table 82.40−8 (title) and Table 82.40−10 (title), r. and recr. (3) (d) 1., renum. (3) (d) 2., 3. and Table 82.40−1 to be (3) (d) 3., 4. and Table 82.40−1b, cr. (3) (d) 2., (8) (b) 9., Table 82.40−1a, r. (9) Register December 2010 No. 660, eff. 1−1−11; CR 10−103: r. (3) (e) 2. b. to 2. d., renum. (3) (e) 2. a. to (3) (e) 2., Register August 2011 No. 668, eff. 9−1−11; **correction in (2), (3) (a) 1., 2., (c) 2., 3. a., (d) 1. a., b., e., g., 2., 4. b., (5) (b) 4., (c), (d) 5. a., e., (6) (a), (7) (c), (8) (a) 1., (b) 3. c., 5. b., (d) 1., 6., (k) 1., Table 382.40−3e made under s. 13.92 (4) (b) 6., 7., Stats., Register December 2011 No. 672.**

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Table 382.40−4

MAXIMUM ALLOWABLE LOAD FOR COPPER TUBING−TYPE K, ASTM B88; (C=150)

Pressure Loss Due to Friction (in lbs. per 100 ft. of Length)	Pipe Diameter (in inches)																										
	1/2”			3/4”			1”			1 1/4”			1 1/2”			2”			2 1/2”			3”			4”		
		WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU	
	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT
0.5	0.5	−	0.5	1.5	−	1.5	3.5	−	3.5	6.5	−	8.0	10.5	4.0	14.0	22.0	7.0	35.0	39.0	28.0	83.0	62.0	80.0	185	132	437	538
1	1.0	−	1.0	2.5	−	2.5	5.0	−	6.0	9.5	−	12.5	15.5	5.0	22.5	32.0	16.0	60.0	57.0	67.0	160	91.0	196	330	192	864	882
2	1.0	−	1.0	3.5	−	3.5	7.5	−	9.5	14.0	4.5	20.0	22.0	7.0	35.0	47.0	42.0	116	83.0	160	290	132	437	538	279	1611	1611
3	1.5	−	1.5	4.5	−	5.0	9.5	−	12.5	17.5	5.5	25.5	28.0	11.0	50.0	58.0	70.0	165	103	261	390	165	661	723	291	1725	1725
4	2.0	−	2.0	5.0	−	6.0	11.5	4.0	15.5	20.5	6.5	31.0	32.0	16.0	60.0	68.0	100	215	116	338	455	165	665	726	NP		
5	2.0	−	2.0	6.0	−	7.0	13.0	4.5	18.0	23.0	7.5	37.0	36.0	22.0	73.0	75.0	128	250	NP			NP					
6	2.5	−	2.5	6.5	−	8.0	14.0	4.5	20.0	25.0	8.5	42.0	40.0	30.0	86.0	NP											
7	2.5	−	2.5	7.0	−	9.0	15.5	5.0	22.5	28.0	11.0	50.0	42.0	34.0	103												
8	3.0	−	3.0	7.5	−	9.5	16.5	5.5	24.0	30.0	13.5	55.0	NP														
9	3.0	−	3.0	8.0	−	10.0	17.5	5.5	25.5	NP																	
10	3.5	−	3.5	8.5	−	10.5	18.5	6.0	27.5																		
11	3.5	−	3.5	9.0	−	11.5	19.0	6.0	28.5																		
12	3.5	−	3.5	9.5	−	12.5	NP																				
13	4.0	−	4.0	10.0	4.0	13.0																					
14	4.0	−	4.0	10.5	4.0	14.0																					
15	4.0	−	4.0	10.5	4.0	14.5																					
16	4.5	−	5.0	NP																							
17	4.5	−	5.0																								
18	4.5	−	5.0																								
19	5.0	−	6.0																								
	NP																										

Note: WSFU means water supply fixture units.
GPM means gallons per minute.
FM means predominately flushometer type water closets or syphon jet urinals.
FT means predominately flush tank type water closets or wash down urinals.
NP means not permitted, velocities exceed 8 feet per second.
For using this table, round the calculated pressure loss due to friction to the next higher number shown.
SPS 382.40 (7) (f) and (g) specifies minimum sizes for water distribution piping.

The Wisconsin Administrative Code on this web site is current through the last published Wisconsin Register. See also Are the Codes on this Website Official?

Table 382.40−5
MAXIMUM ALLOWABLE LOAD FOR COPPER TUBING−TYPE L, ASTM B88; (C=150)

Pressure Loss Due to Friction (in lbs. per 100 ft. of Length)	Pipe Diameter (in inches)																										
	1/2”			3/4”			1”			1 1/4”			1 1/2”			2”			2 1/2”			3”			4”		
		WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU	
	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT
0.5	0.5	−	0.5	2.0	−	2.0	4.0	−	4.0	7.0	−	9.0	11.0	4.0	15.0	23.0	7.5	37.0	40.0	30.0	86.0	65.0	90.0	200	136	462	561
1	1.0	−	1.0	2.5	−	2.5	5.5	−	6.5	10.0	4.0	13.0	16.0	5.0	23.0	33.0	17.5	63.0	59.0	72.0	170	94.0	211	345	198	909	923
2	1.5	−	1.5	4.0	−	4.0	8.5	−	10.5	14.5	4.5	20.5	23.0	7.5	37.0	48.0	44.0	120	86.0	175	305	137	468	566	288	1694	1694
3	2.0	−	2.0	5.0	−	6.0	10.5	4.0	14.0	18.5	6.0	27.5	29.0	12.5	52.0	60.0	75.0	175	107	283	410	169	698	752	298	1792	1792
4	2.0	−	2.0	6.0	−	7.0	12.0	4.0	16.5	21.5	7.0	33.0	34.0	18.5	66.0	70.0	108	225	119	356	469	NP			NP		
5	2.5	−	2.5	6.5	−	8.0	14.0	4.5	20.0	24.0	8.0	40.0	38.0	26.0	80.0	77.0	136	260	NP								
6	2.5	−	2.5	7.5	−	9.5	15.5	5.0	22.5	26.0	9.0	45.0	42.0	33.0	100	NP											
7	3.0	−	3.0	8.0	−	10.0	16.5	5.5	24.0	29.0	12.5	52.0	44.0	37.0	107												
8	3.0	−	3.0	8.5	−	10.5	18.0	6.0	26.5	31.0	15.0	58.0	NP														
9	3.5	−	3.5	9.5	−	12.5	19.0	6.0	28.0	NP																	
10	3.5	−	3.5	10.0	4.0	13.0	20.0	6.5	30.0																		
11	4.0	−	4.0	10.5	4.0	14.0	20.5	6.5	31.0																		
12	4.0	−	4.0	11.0	4.0	15.0	NP																				
13	4.0	−	4.0	11.5	4.0	15.5																					
14	4.5	−	5.0	12.0	4.0	16.5																					
15	4.5	−	5.0	NP																							
16	5.0	−	6.0																								
17	5.0	−	6.0																								
18	5.0	−	6.0																								
19	5.0	−	6.0																								
20	5.5	−	6.5																								
	NP																										

Note: WSFU means water supply fixture units.
GPM means gallons per minute.
FM means predominately flushometer type water closets or syphon jet urinals.
FT means predominately flush tank type water closets or wash down urinals.
NP means not permitted, velocities exceed 8 feet per second.
For using this table, round the calculated pressure loss due to friction to the next higher number shown.
SPS 382.40 (7) (f) and (g) specifies minimum sizes for water distribution piping.

The Wisconsin Administrative Code on this web site is current through the last published Wisconsin Register. See also Are the Codes on this Website Official?

Table 382.40−6
MAXIMUM ALLOWABLE LOAD FOR COPPER TUBING−TYPE M, ASTM B88; (C=150)

Pressure Loss Due to Friction (in lbs. per 100 ft. of Length)	Pipe Diameter (in inches)																										
	1/2”			3/4”			1”			1 1/4”			1 1/2”			2”			2 1/2”			3”			4”		
		WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU	
	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT
0.5	0.5	−	0.5	2.0	−	2.0	4.0	−	4.0	7.0	−	9.0	11.5	4.0	15.5	23.0	7.5	37.0	42.0	33.0	100	67.0	96.0	210	139	481	577
1	1.0	−	1.0	3.0	−	3.0	6.0	−	7.0	10.5	4.0	14.0	16.5	5.5	24.0	34.0	18.5	66.0	61.0	77.0	180	97.0	227	360	202	945	953
2	1.5	−	1.5	4.5	−	5.0	9.0	−	11.5	15.5	5.0	22.5	24.0	8.0	40.0	50.0	48.0	128	88.0	184	315	141	493	588	294	1750	1750
3	2.0	−	2.0	5.5	−	6.5	11.5	4.0	15.5	19.5	6.5	29.0	30.0	13.5	55.0	62.0	80.0	185	110	300	425	174	731	776	303	1835	1835
4	2.5	−	2.5	6.5	−	8.0	13.0	4.5	18.0	22.0	7.0	35.0	35.0	20.0	70.0	73.0	120	240	121	374	484	NP			NP		
5	2.5	−	2.5	7.5	−	9.5	15.0	5.0	21.5	25.0	8.5	42.0	40.0	30.0	86.0	79.0	144	270	NP								
6	3.0	−	3.0	8.0	−	10.0	16.5	5.5	24.0	28.0	11.0	50.0	44.0	36.0	106	NP											
7	3.5	−	3.5	9.0	−	11.5	18.0	6.0	26.5	30.0	13.5	55.0	45.0	39.0	112												
8	3.5	−	3.5	9.5	−	12.5	19.5	6.5	29.0	32.0	17.0	62.0	NP														
9	4.0	−	4.0	10.0	4.0	13.0	20.5	6.5	31.0	NP																	
10	4.0	−	4.0	11.0	4.0	15.0	21.5	7.0	34.0																		
11	4.5	−	5.0	11.5	4.0	15.5	NP																				
12	4.5	−	5.0	12.0	4.0	16.5																					
13	5.0	−	6.0	12.5	4.5	17.5																					
14	5.0	−	6.0	12.5	4.5	18.0																					
15	5.0	−	6.0	NP																							
16	5.5	−	6.5																								
17	5.5	−	6.5																								
18	5.5	−	6.5																								
19	6.0	−	7.0																								
20	6.0	−	7.0																								
21	6.0	−	7.5																								
	NP																										

Note: WSFU means water supply fixture units.
GPM means gallons per minute.
FM means predominately flushometer type water closets or syphon jet urinals.
FT means predominately flush tank type water closets or wash down urinals.
NP means not permitted, velocities exceed 8 feet per second.
For using this table, round the calculated pressure loss due to friction to the next higher number shown.
SPS 382.40 (7) (f) and (g) specifies minimum sizes for water distribution piping.

The Wisconsin Administrative Code on this web site is current through the last published Wisconsin Register. See also Are the Codes on this Website Official?

Table 382.40−7
MAXIMUM ALLOWABLE LOAD FOR GALVANIZED STEEL PIPE, SCHEDULE 40, ASTM A53; (C=150)

Pressure Loss Due to Friction (in lbs. per 100 ft. of Length)	Pipe Diameter (in inches)																										
	1/2”			3/4”			1”			1 1/4”			1 1/2”			2”			2 1/2”			3”			4”		
		WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU	
	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT
0.5	0.5	−	0.5	1.5	−	1.5	3.5	−	3.5	7.0	−	9.0	11.0	4.0	15.0	21.0	7.0	32.0	34.0	18.5	66.0	60.0	75.0	175	123	381	490
1	1.0	−	1.0	2.5	−	2.5	5.0	−	6.0	10.5	4.0	14.0	16.0	5.0	23.0	31.0	15.0	57.0	49.0	46.0	124	87.0	180	310	179	769	805
2	1.5	−	1.5	4.0	−	4.0	7.5	−	9.5	15.5	5.0	22.5	23.0	7.5	37.0	45.0	38.0	110	72.0	116	235	127	406	511	260	1435	1435
3	2.0	−	2.0	5.0	−	6.0	9.0	−	11.5	19.0	6.0	28.0	29.0	12.5	52.0	56.0	65.0	155	89.0	188	320	158	607	683	317	1966	1966
4	2.5	−	2.5	5.5	−	6.5	11.0	4.0	15.0	22.0	7.0	35.0	34.0	18.5	66.0	65.0	90	200	104	266	395	184	809	837	NP		
5	3.0	−	3.0	6.5	−	8.0	12.0	4.0	16.5	25.0	8.5	42.0	38.0	26.0	80.0	74.0	124	245	118	350	465	NP					
6	3.0	−	3.0	7.0	−	9.0	13.5	4.5	19.0	28.0	11.0	50.0	42.0	33.0	100	81.0	152	280	119	358	471						
7	3.5	−	3.5	7.5	−	9.5	14.5	4.5	20.5	30.0	13.5	55.0	46.0	40.0	113	83.0	163	293	NP								
8	4.0	−	4.0	8.0	−	10.0	16.0	5.0	23.0	33.0	17.5	63.0	49.0	46.0	124	NP											
9	4.0	−	4.0	9.0	−	11.5	17.0	5.5	25.0	35.0	20.0	70.0	50.0	49.0	131												
10	4.5	−	5.0	9.5	−	12.5	18.0	6.0	26.5	37.0	24.0	76.0	NP														
11	4.5	−	5.0	10.0	4.0	13.0	19.0	6.0	28.0	37.0	24.0	77.0															
12	5.0	−	6.0	10.5	4.0	14.0	19.5	6.5	29.0	NP																	
13	5.0	−	6.0	11.0	4.0	15.0	20.5	6.5	31.0																		
14	5.0	−	6.0	11.0	4.0	15.0	21.5	7.0	33.0																		
15	5.5	−	6.5	11.5	4.0	15.5	NP																				
16	5.5	−	6.5	12.0	4.0	16.5																					
17	6.0	−	7.0	12.5	4.5	17.5																					
18	6.0	−	7.0	13.0	4.5	18.0																					
19	6.0	−	7.0	13.0	4.5	18.5																					
20	6.5	−	8.0	NP																							
21	6.5	−	8.0																								
22	7.0	−	9.0																								
23	7.0	−	9.0																								
24	7.0	−	9.0																								
25	7.5	−	9.5																								
	NP																										

Note: WSFU means water supply fixture units.
GPM means gallons per minute.
FM means predominately flushometer type water closets or syphon jet urinals.
FT means predominately flush tank type water closets or wash down urinals.
NP means not permitted, velocities exceed 8 feet per second.
For using this table, round the calculated pressure loss due to friction to the next higher number shown.
SPS 382.40 (7) (f) and (g) specifies minimum sizes for water distribution piping.

The Wisconsin Administrative Code on this web site is current through the last published Wisconsin Register. See also Are the Codes on this Website Official?

Table 382.40−8
CHLORINATED POLYVINYL CHLORIDE TUBING, ASTM D2846 and F442, SDR 11; (C=150)

Pressure Loss Due to Friction (in lbs. per 100 ft. of Length)	Pipe Diameter (in inches)																	
	1/2”			3/4”			1”			1 1/4”			1 1/2”			2”		
		WSFU			WSFU			WSFU			WSFU			WSFU			WSFU	
	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT
0.5	0.5	−	0.5	1.5	−	1.5	3.0	−	3.0	5.0	−	6.0	8.0	−	10.0	16.0	5.0	23.0
1	0.5	−	0.5	2.0	−	2.0	4.0	−	4.0	7.5	−	9.5	11.5	4.0	15.5	23.0	7.5	37.0
2	1.0	−	1.0	3.0	−	3.0	6.0	−	7.0	10.5	4.0	14.0	16.5	5.5	24.0	34.0	18.5	66.0
3	1.5	−	1.5	4.0	−	4.0	8.0	−	10.0	13.5	4.5	19.0	21.0	7.0	32.0	42.0	33.0	100
4	1.5	−	1.5	4.5	−	5.0	9.0	−	11.5	15.5	5.0	22.5	24.0	8.0	40.0	50.0	48.0	128
5	2.0	−	2.0	5.0	−	6.0	10.5	4.0	14.0	17.5	5.5	25.5	27.0	10.0	47.0	56.0	65.0	155
6	2.0	−	2.0	6.0	−	7.0	11.5	4.0	15.5	19.5	6.5	29.0	30.0	13.5	55.0	59.0	73.0	171
7	2.0	−	2.0	6.5	−	8.0	12.5	4.5	17.5	21.5	7.0	33.0	33.0	17.5	63.0	NP		
8	2.5	−	2.5	7.0	−	9.0	13.5	4.5	19.0	23.0	7.5	37.0	34.0	19.0	68.0			
9	2.5	−	2.5	7.0	−	9.0	14.5	4.5	20.5	24.0	8.0	40.0	NP					
10	2.5	−	2.5	7.5	−	9.5	15.0	5.0	21.5	24.0	8.0	41.0						
11	3.0	−	3.0	8.0	−	10.0	16.0	5.0	23.0	NP								
12	3.0	−	3.0	8.5	−	10.5	16.5	5.5	24.0									
13	3.0	−	3.0	9.0	−	11.5	NP											
14	3.0	−	3.0	9.5	−	12.5												
15	3.5	−	3.5	9.5	−	12.5												
16	3.5	−	3.5	10.0	4.0	13.0												
17	3.5	−	3.5	NP														
18	4.0	−	4.0															
19	4.0	−	4.0															
20	4.0	−	4.0															
21	4.0	−	4.0															
22	4.0	−	4.0															
23	4.5	−	5.0															
	NP																	

Note: WSFU means water supply fixture units.
GPM means gallons per minute.
FM means predominately flushometer type water closets or syphon jet urinals.
FT means predominately flush tank type water closets or wash down urinals.
NP means not permitted, velocities exceed 8 feet per second.
For using this table, round the calculated pressure loss due to friction to the next higher number shown.
SPS 382.40 (7) (f) and (g) specifies minimum sizes for water distribution piping.

The Wisconsin Administrative Code on this web site is current through the last published Wisconsin Register. See also Are the Codes on this Website Official?

Table 382.40−9
MAXIMUM ALLOWABLE LOAD FOR CROSSLINKED POLYETHYLENE (PEX) TUBING, ASTM F876 and F877; (C=150)

Pressure Loss Due to Friction (in lbs. per 100 ft. of Length)	Pipe Diameter (in inches)																				
	1/2”			5/8”			3/4”			1”			1 1/4”			1 1/2”			2”		
		WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU	
	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT
0.5	0.5	−	0.5	0.5	−	0.5	1.0	−	1.0	2.5	−	2.5	4.0	−	4.0	6.5	−	8.0	13.5	4.5	19.0
1	0.5	−	0.5	1.0	−	1.0	1.5	−	1.5	3.5	−	3.5	6.0	−	7.0	9.5	−	12.5	19.5	6.5	29.0
2	1.0	−	1.0	1.5	−	1.5	2.5	−	2.5	5.0	−	6.0	9.0	−	11.5	14.0	4.5	20.0	28.0	11.0	50.0
3	1.0	−	1.0	2.0	−	2.0	3.0	−	3.0	6.5	−	8.0	11.0	4.0	15.0	17.5	5.5	25.5	36.0	22.0	73.0
4	1.5	−	1.5	2.5	−	2.5	4.0	−	4.0	7.5	−	9.5	13.0	4.5	18.0	20.5	6.5	31.0	42.0	33.0	100
5	1.5	−	1.5	3.0	−	3.0	4.5	−	5.0	8.5	−	10.5	15.0	5.0	21.5	23.0	7.5	37.0	47.0	42.0	116
6	2.0	−	2.0	3.0	−	3.0	5.0	−	6.0	9.5	−	12.5	16.5	5.5	24.0	25.0	8.5	42.0	51.0	53.0	135
7	2.0	−	2.0	3.5	−	3.5	5.5	−	6.5	10.5	4.0	14.0	18.0	6.0	26.5	28.0	11.0	50.0	NP		
8	2.0	−	2.0	3.5	−	3.5	5.5	−	6.5	11.0	4.0	15.0	19.0	6.0	28.0	30.0	13.5	55.0			
9	2.5	−	2.5	4.0	−	4.0	6.0	−	7.0	12.0	4.0	16.5	20.5	6.5	31.0	NP					
10	2.5	−	2.5	4.0	−	4.0	6.5	−	8.0	12.5	4.5	17.5	21.5	7.0	34.0						
11	2.5	−	2.5	4.5	−	5.0	7.0	−	9.0	13.5	4.5	19.0	NP								
12	2.5	−	2.5	4.5	−	5.0	7.0	−	9.0	14.0	4.5	20.0									
13	3.0	−	3.0	5.0	−	6.0	7.5	−	9.5	14.5	4.5	20.5									
14	3.0	−	3.0	5.0	−	6.0	8.0	−	10.0	NP											
15	3.0	−	3.0	5.5	−	6.5	8.0	−	10.0												
16	3.0	−	3.0	5.5	−	6.5	8.5	−	10.5												
17	3.5	−	3.5	5.5	−	6.5	8.5	−	11.0												
18	3.5	−	3.5	6.0	−	7.0	NP														
19	3.5	−	3.5	6.0	−	7.0															
20	3.5	−	3.5	6.0	−	7.5															
21	4.0	−	4.0	NP																	
	NP																				

Note: WSFU means water supply fixture units.
GPM means gallons per minute.
FM means predominately flushometer type water closets or syphon jet urinals.
FT means predominately flush tank type water closets or wash down urinals.
NP means − not permitted, velocities exceed 8 feet per second.
For using this table, round the calculated pressure loss due to friction to the next higher number shown.
SPS 382.40 (7) (f) and (g) specifies minimum sizes for water distribution piping.

The Wisconsin Administrative Code on this web site is current through the last published Wisconsin Register. See also Are the Codes on this Website Official?

Table 382.40−10
MAXIMUM ALLOWABLE LOAD FOR CHLORINATED POLYVINYL CHLORIDE TUBING, ASTM F442, SDR 13.5; (C=150)

Pressure Loss Due to Friction (in lbs. per 100 ft. of Length)	Pipe Diameter (in inches)																				
	3/4”			1”			1 1/4”			1 1/2”			2”			2 1/2”			3”		
		WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU	
	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT
0.5	2.5	−	2.5	4.5	−	5.0	9.0	−	11.5	13.0	4.5	18.0	23.0	7.5	37.0	38.0	26.0	80.0	65.0	90.0	200
1	3.5	−	3.5	7.0	−	9.0	13.0	4.5	18.0	18.5	6.0	27.5	34.0	18.5	66.0	56.0	65.0	155	94.0	211	345
2	5.5	−	6.5	10.0	4.0	13.0	19.0	6.0	28.0	27.0	10.0	47.0	49.0	46.0	124	82.0	156	285	138	475	572
3	7.0	−	9.0	12.5	4.5	17.5	23.0	7.5	37.0	34.0	18.5	66.0	62.0	80.0	185	102	255	385	170	703	755
4	8.0	−	10.0	15.0	5.0	21.5	27.0	10.0	47.0	40.0	30.0	86.0	72.0	116	235	114	331	449	NP		
5	9.0	−	11.5	16.5	5.5	24.0	31.0	15.0	57.0	45.0	38.0	110	78.0	142	267	NP					
6	10.0	4.0	13.0	18.5	6.0	27.5	34.0	18.5	66.0	49.0	46.0	124	NP								
7	11.0	4.0	15.0	20.0	6.5	30.0	37.0	24.0	76.0	50.0	48.0	128									
8	11.5	4.0	15.5	21.5	7.0	33.0	38.0	26.0	80.0	NP											
9	12.5	4.5	17.5	23.0	7.5	37.0	NP														
10	13.0	4.5	18.0	23.0	7.5	39.0															
11	14.0	4.5	20.0	NP																	
12	14.5	4.5	20.5																		
13	14.5	5.0	21.5																		
	NP																				

Note:
WSFU means water supply fixture units.
GPM means gallons per minute.
FM means predominately flushometer type water closets or syphon jet urinals.
FT means predominately flush tank type water closets or wash down urinals.
NP means not permitted, velocities exceed 8 feet per second.
For using this table, round the calculated pressure loss due to friction to the next higher number shown.
SPS 382.40 (7) (f) and (g) specifies minimum sizes for water distribution piping.
Approved for cold water use only.
Intended use is for MPP systems.

The Wisconsin Administrative Code on this web site is current through the last published Wisconsin Register. See also Are the Codes on this Website Official?

Table 382.40−11
MAXIMUM ALLOWABLE LOAD FOR POLYETHYLENE ALUMINUM POLYETHYLENE TUBING (PexAlPex), ASTM F1281; (C=150)

Pressure Loss Due to Friction (in lbs. per 100 ft. of Length)	Pipe Diameter (in inches)											
	1/2”			5/8”			3/4”			1”		
		WSFU			WSFU			WSFU			WSFU	
	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT
0.5	0.5	−	0.5	1.0	−	1.0	2.0	−	2.0	4.0	−	4.0
1	0.5	−	0.5	1.5	−	1.5	3.0	−	3.0	6.0	−	7.0
2	1.0	−	1.0	2.0	−	2.0	4.5	−	5.0	8.5	−	10.5
3	1.5	−	1.5	3.0	−	3.0	5.5	−	6.5	10.5	4.0	14.0
4	1.5	−	1.5	3.5	−	3.5	6.5	−	8.0	12.5	4.5	17.5
5	2.0	−	2.0	4.0	−	4.0	7.0	−	9.0	14.0	4.5	20.0
6	2.0	−	2.0	4.0	−	4.0	8.0	−	10.0	15.5	5.0	22.5
7	2.5	−	2.5	4.5	−	5.0	8.5	−	10.5	17.0	5.5	25.0
8	2.5	−	2.5	5.0	−	6.0	9.5	−	12.5	18.0	6.0	26.5
9	2.5	−	2.5	5.5	−	6.5	10.0	4.0	13.0	19.5	6.5	29.0
10	3.0	−	3.0	5.5	−	6.5	10.5	4.0	14.0	20.5	6.5	31.0
11	3.0	−	3.0	6.0	−	7.0	11.0	4.0	15.0	20.5	6.5	32.0
12	3.0	−	3.0	6.0	−	7.0	11.5	4.0	15.5	NP		
13	3.5	−	3.5	6.5	−	8.0	12.5	4.5	17.5			
14	3.5	−	3.5	7.0	−	9.0	NP					
15	3.5	−	3.5	7.0	−	9.0						
16	3.5	−	3.5	7.5	−	9.5						
17	4.0	−	4.0	NP								
18	4.0	−	4.0									
19	4.0	−	4.0									
20	4.0	−	4.0									
21	4.5	−	5.0									
	NP											

Note: WSFU means water supply fixture units.
GPM means gallons per minute.
FM means predominately flushometer type water closets or syphon jet urinals.
FT means predominately flush tank type water closets or wash down urinals.
NP means not permitted, velocities exceed 8 feet per second.
For using this table, round the calculated pressure loss due to friction to the next higher number shown.
SPS 382.40 (7) (f) and (g) specifies minimum sizes for water distribution piping.

The Wisconsin Administrative Code on this web site is current through the last published Wisconsin Register. See also Are the Codes on this Website Official?

SPS 382.41 Cross connection control. (1) SCOPE. The provisions of this section set forth the requirements for the protection of water within water supply systems when and where there is the possibility of contamination due to cross connections or backflow conditions.

Note: The Department of Natural Resources governs the operation and design of community water systems and under s. NR 811.09 requires the supplier of water to develop and implement a comprehensive cross connection control program.

(2) MATERIALS. (a) All devices, assemblies and mechanisms intended to protect water supplies relative to cross connection or backflow shall be of a type recognized and approved in accordance with ch. SPS 384 and as described in sub. (4).

(b) All methods including barometric loops and air gaps intended to protect water supplies relative to cross connection or backflow shall be constructed of materials suitable for water supply systems in accordance with ch. SPS 384.

(3) GENERAL REQUIREMENTS. Water supply systems and the connection of each plumbing fixture, piece of equipment, appliance or nonpotable water piping system shall be designed, installed and maintained in such a manner to prevent the contamination of water supplies by means of cross connections.

(a) *Types of cross connection control.* 1. Water supply systems shall be protected against contamination due to cross connections or backflow conditions by one of the methods or devices specified in Table 382.41−1 depending upon the situation or Table 382.41−2 depending upon the specific application or use, and the limitations specified in sub. (4).

2. For the situations described in par. (b) 3., cross connection control shall be provided as part of the fixture fitting outlet or in the water supply piping for the fixture fitting outlet.

(b) *Classifications.* For the purposes of this section:

1. The designation of a high hazard or low hazard situation shall be determined on the basis of how a toxic or nontoxic solution is intended or recommended by the manufacturer of the solution to interface with the potable water supply system.

2. a. A continuous pressure situation shall be considered to exist when a pressure greater than atmospheric within the water supply system exists for more than 12 continuous hours.

b. A noncontinuous pressure situation shall be considered to exist if the conditions in subd. 2. a. do not occur.

3. A high hazard cross connection situation shall be considered to exist for a connection of the water supply system to:

a. Any part of the drain system; and

b. Any other piping system conveying water from nonpotable sources, including but not limited to lakes, rivers, streams or creeks.

4. Except as provided in subd. 5., a high hazard cross connection situation shall be considered to exist at:

a. A water supply hose bibb, faucet, wall hydrant, sill cock or other outlet which terminates with hose threads allowing a hose to be attached;

b. A water supply faucet, wall hydrant or other outlet which terminates with a serrated nipple allowing a hose to be attached;

c. A water supply faucet, hydrant or outlet serving a sink used for building maintenance in a public building;

d. A chemical pot−feeder or automatic chemical feeder is installed to serve a boiler, cooling tower or chilled water system; and

e. In the water supply piping connecting to the outlet of a fire hydrant for any purpose other than fire suppression.

5. A cross connection shall not be considered to exist at the hose threaded outlet installed for the sole purpose of:

a. Draining a water supply system or any portion thereof;

b. Obtaining water quality samples of the water supply system or any portion thereof; or

c. Connecting individual residential automatic clothes washers.

6. a. A high hazard situation shall be considered to exist for the connection of 2 water supply systems one supplied by a public water supply and the other system supplied by a private well.

Note: The interconnection of a public water supply system and another source of water is addressed in s. NR 811.09 and must be approved by the Department of Natural Resources.

b. Except as provided in subd. 7., a low hazard situation shall be considered to exist for the connection of a piping system, including but not limited to automatic fire sprinkler systems, standpipe systems, and processing purposes, which provides potable water for nonrequired potable water uses.

Note: Cross connection control devices used in conjunction with automatic fire sprinkler systems are to be listed by an acceptable testing agency for such an application under the standards governing the design and installation of automatic fire sprinkler systems.

7. A cross connection situation shall not be considered to exist when a multipurpose piping system serves a one− or 2− family dwelling provided the sprinkler system is constructed of materials and joints suitable for water distribution systems as specified in ss. SPS 384.30 (4) (e) and 384.40, respectively.

(c) *Containment.* 1. For sewerage treatment facilities which are required to conform with ch. NR 110, in addition to the cross connection control required for each potable water usage or water outlet, a reduced pressure principle backflow preventer shall be installed:

a. In the water service to each building or structure within the complex;

b. In the private water main upstream of all water services serving the facility; or

c. In the water distribution system upstream of all water outlets and in the process piping network upstream of all points of use, if both a water distribution system and a process network is contained within the same building or structure.

2. For marinas, wharves and docks where potable water outlets are provided to serve boats or ships, in addition to the cross connection control required for each potable water outlet or usage, a reduced pressure principle backflow preventer shall be installed in the water supply system to limit backflow into the water supply source.

3. The installation of a cross connection control device in the water supply system for a building or structure shall not alleviate the requirement to provide cross connection control for the connection of each plumbing fixture, piece of equipment, appliance or other piping system.

(d) *Prohibitions.* The use of a toxic solution as a heat transfer fluid in single−wall heat exchanger for potable water is prohibited.

(e) *Existing automatic fire sprinkler systems.* An alteration, modification or addition to an existing automatic fire sprinkler shall necessitate conformance with this section, if the:

1. Existing water supply line to the existing sprinkler system is increased in diameter; or

2. Existing device or method which had been previously recognized to address cross connection concerns is to be removed or replaced.

Table 382.41−1

Acceptable Cross Connection Control Methods, Devices or Assemblies

Methods or Assemblies of Cross Connection Control (Standard)	Situations and Conditions							
	Backpressure				Backsiphonage			
	Low Hazard		High Hazard		Low Hazard		High Hazard	
	Continu-ous Pressure	Noncon-tinuous Pressure	Continu-ous Pressure	Noncon-tinuous Pressure	Contin−uous Pressure	Noncon-tinuous Pressure	Contin−uous Pressure	Noncon−tinuous Pressure
Air−gap Fittings for use with Plumbing Fixtures, Appli-ances, and Appurtenances (ASME A112.1.3)					X	X	X	X
Air Gaps (ASME A112.1.2)	X	X	X	X	X	X	X	X
Atmospheric Vacuum Breaker (CAN/CSA B64.1.1)						X		X
Backflow Preventers with Intermediate Atmospheric Vent (ASSE 1012)	X	X			X	X		
Barometric Loops					X	X	X	X
Dual Check Valve Type with Atmospheric Port Backflow Preventer (CAN/CSA B64.3)	X	X			X	X		
Hose Connection Backflow Preventers (ASSE 1052)	X[a]	X	X[a]	X	X[a]	X	X[a]	X
Hose Connection Vacuum Breakers (CAN/CSA B64.2 and B64.2.2)	X[a]	X	X[a]	X	X[a]	X	X[a]	X
Hose Connection Vacuum Breakers (ASSE 1011)	X[a]	X	X[a]	X	X[a]	X	X[a]	X
Pipe Applied Atmospheric Type Vacuum Breakers (ASSE 1001)						X		X
Pressure Vacuum Breaker Assembly (ASSE 1020)					X	X	X	X
Reduced Pressure Principle Backflow Preventers And Reduced Pressure Fire Protection Principle Back-flow Preventers (ASSE 1013)	X	X	X	X	X	X	X	X
Reduced Pressure Principle Backflow Preventer (CAN/CSA B64.4)	X	X	X	X	X	X	X	X
Spill Resistant Vacuum Breaker (ASSE 1056 and CAN/CSA B64.1.3)					X	X	X	X
Vacuum Breaker (CAN/CSA B64.1.2)					X	X	X	X

[a] See limitation listed under s. SPS 382.41 (4) (c) 1. a.

Table 382.41−2

Acceptable Cross Connection Control Methods, Devices or Assemblies for Specific Applications

Methods or Assemblies (Standard)	Types of Application or Use
Backflow Preventer for Beverage Dispensing Machines (ASSE 1022)	Beverage dispensers
Chemical Dispensing Systems (ASSE 1055)	Chemical dispensing systems
Double Check Backflow Prevention Assemblies and Double Check Fire Protection Backflow Prevention Assemblies (ASSE 1015)	Automatic fire sprinkler systems and standpipe systems Water−based fire protection system
Double Check Detector Fire Protection Backflow Prevention Assemblies (ASSE 1048)	Automatic fire sprinkler systems and standpipe systems Water−based fire protection system
Double Check Detector Valve Type Backflow Preventer (CAN/CSA B64.5)	Automatic fire sprinkler systems and standpipe systems Water−based fire protection system
Dual Check Backflow Preventer Wall Hydrant — Freeze Resistant Type (ASSE 1053)	Hose threaded outlet connection
Hand Held Showers (ASSE 1014)	Hand held shower assemblies
Laboratory Faucet Type Vacuum Breakers (CAN/CSA B64.7)	Laboratory faucets
Laboratory Faucet Vacuum Breakers (ASSE 1035)	Laboratory faucets
Pressurized Flushing Devices (Flushometers) For Plumbing Fixtures (ASSE 1037)	Flushometer plumbing fixtures
Reduced Pressure Detector Fire Prevention Backflow Prevention Assemblies (ASSE 1047)	Automatic fire sprinkler systems
Trap Seal Primer Valves, Water Supply Fed (ASSE 1018)	Traps for drain systems
Vacuum Breaker Tees [s. SPS 382.41 (5) (j)]	Water treatment devices
Wall Hydrants, Frost Proof Automatic Draining Anti−Backflow Type (ASSE 1019), types A or B	Hose threaded outlet connections
Water Closet Flush Tank Ball Cocks (ASSE 1002)	Gravity water closet flush tanks

(4) LIMITATIONS. (a) Cross connection control devices shall be limited in use in accordance with the respective standard, unless otherwise specifically permitted under this subsection.

(b) 1. Except for a deck−mounted device, a pipe applied atmospheric vacuum breaker shall be installed such that the bottom of the device or the critical level mark on the device is at least 6″ above all of the following:

a. The flood level rim of the receptor serving the water supply port.

b. The highest point downstream from the device where backpressure would be created.

c. The highest point of an injection or aspiration port.

2. A deck−mounted pipe applied atmospheric type vacuum breaker shall be installed such that the bottom of the device or the critical level mark on the device is at least one inch above all of the following:

a. The flood level rim of the receptor serving the water supply port.

b. The highest point downstream from the device where backpressure would be created.

c. The highest point of an injection or aspiration port.

(c) 1. a. The use a of a hose connection backflow preventer, dual check backflow preventer wall hydrant−freeze resistant or a hose connection vacuum breaker in a continuous pressure situation shall be limited to campgrounds and marinas.

b. The use of a hose connection backflow preventer and a hose connection vacuum breaker shall be limited to the discharge side of a control valve such as a faucet or hose bibb.

2. A hose connection backflow preventer and a hose connection vacuum breaker may not be employed in backpressure situations of more than 10 feet of water column.

(d) A backflow preventer with intermediate atmospheric vent:

1. May not be employed in backpressure situations of more than 150 psig; and

2. May not serve boilers having a maximum steam pressure setting greater than 15 psig or a maximum water pressure setting greater than 30 psig.

(e) 1. A reduced pressure principle backflow preventer and a reduced pressure detector backflow preventer may not be subjected to a backpressure greater than twice the rated working pressure of the device.

2. A reduced pressure principle backflow preventer and a reduced pressure detector backflow preventer which serve a water−based fire protection system may have a test outlet located between the number 2 check valve and the number 2 listed indicating control valve.

3. A reduced pressure principle backflow preventer and a reduced pressure detector backflow preventer which are 2″ or smaller in size and which serve a water−based fire protection system are not required to have a test cock on the number one listed indicating control valve.

(f) A hand−held shower may not be employed in backpressure situations of more than 5 feet of water column.

(g) 1. A double check backflow prevention assembly and a double check detector assembly backflow preventer may not be subjected to a backpressure greater than twice the rated working pressure of the device.

2. A double check backflow prevention assembly and a double check detector assembly backflow preventer which serve a water−based fire protection system may have a test outlet located between the number 2 check valve and the number 2 listed indicating control valve.

3. A double check backflow prevention assembly and a double check detector assembly backflow preventer which are 2″ or smaller in size and which serve a water−based fire protection system are not required to have a test cock on the number one listed indicating control valve.

(h) A water supply fed trap seal primer valve shall be installed such that the bottom of the device or the critical level as marked on the device is at least 12″ above:

1. The connection to the trap; and

2. The highest point downstream from the device where backpressure would be created.

(i) A vacuum breaker wall hydrant, freeze resistant automatic draining type or a freeze resistant sanitary yard hydrant, may not be employed in backpressure situations of more than 10 feet of water column.

(k) 1. A pressure type vacuum breaker assembly shall be installed such that the bottom of the device or the critical level mark on the device is at least 12″ above all of the following:

a. The flood level rim of the receptor serving the water supply port.

b. The highest point downstream from the device where backpressure would be created.

c. The highest point of an injection or aspiration port.

2. A pressure vacuum breaker assembly shall be located only outside.

(L) A laboratory faucet backflow preventer may not be employed in backpressure situations of more than 6 feet of water column.

(m) The cross connection control device to serve a hose bibb or hydrant that penetrates an exterior wall of a heated structure may not prevent a hose bibb or hydrant from being freeze resistant automatic draining as required under s. SPS 382.40 (8) (a).

(n) A spill resistant vacuum breaker shall be installed so that the bottom of the device or the critical level mark on the device is at least 12″ above all of the following:

1. The flood level rim of the receptor serving the water supply port.

2. The highest point downstream from the device where back pressure would be created.

3. The highest point of an injection or aspiration port.

(5) INSTALLATION. (a) An air gap for cross connection control shall conform to ASME A112.1.2.

Note: See Appendix for further explanatory material.

(b) Cross connection control methods, devices and assemblies shall be installed in accordance with the manufacturer's written installation specifications and this chapter. The methods, devices and assemblies shall be accessible for inspection, testing, maintenance and replacement.

Note: See s. SPS 384.30 (5) (c).

(c) Cross connection control devices shall be protected from freezing.

(d) 1. A cross connection control device may not be located in uninhabitable spaces susceptible to flooding.

2. A cross connection control device which has one or more vent ports may not be located in a pit, vault or depression which is below the adjacent grade or floor level, even if the pit, vault or depression is provided with a drain at the bottom of the pit.

(e) 1. Vent ports of cross connection control devices shall be positioned:

a. Away from areas where toxic gases and fumes may accumulate;

b. Downward or protected to protect the ports from falling debris; and

c. So as to drain dry.

2. Cross connection control devices or assemblies shall be so located that any vent ports are provided with an air gap so as to comply with s. SPS 382.33 or ASME A112.1.3.

3. a. If a reduced pressure principle backflow preventer or a reduced pressure detector backflow preventer is located within a building, a drain or receptor shall be provided to receive the discharge from the vent ports of the device. If a floor drain is to receive the discharge from the vent ports of a reduced pressure principle backflow preventer or a reduced pressure detector backflow preventer, the flow or pathway of the discharge may not create a nuisance.

b. Where drain piping is provided for the discharge from a vent port, an air gap in accordance with par. (a) shall be provided between the vent port and the drain piping.

c. Where a receptor is provided for the discharge from a vent port, an air gap in accordance with par. (a) shall be provided between the vent port and the receptor.

(f) The installation of a reduced pressure principle backflow preventer, a reduced pressure fire protection principle backflow preventer, a reduced pressure detector backflow preventer, a reduced pressure detector fire protection backflow prevention assembly, a double check backflow prevention assembly, a double check detector assembly backflow preventer, a pressure vacuum breaker assembly and a spill resistant vacuum beaker shall conform to all of the following limitations:

1. The minimum distance between the floor, surface or platform which is to provide access and the lowest point of the assembly may not be less than 12″.

2. The maximum distance between the floor, surface or platform which is to provide access and the lowest point of the assembly may not be more than 7 feet.

3. The minimum distance between a ceiling or other obstruction and the highest point of the assembly may not be less than 18″.

4. The minimum distance between a wall or other obstruction and the back and ends of the assembly may not be less than 4″.

5. The minimum distance between a wall or other obstruction and the front of the assembly may not be less than 24″.

Note: See Appendix for further explanatory material.

(g) The discharge outlet of local waste piping serving a cross connection control device shall be visible and not be located within a concealed space.

(h) No control valve may be placed downstream from a pipe applied atmospheric type vacuum breaker or a laboratory faucet backflow preventer.

(i) A barometric loop to provide cross connection control for backsiphonage shall be formed by creating a loop in the potable water supply piping upstream to the source of cross connection.

1. The loop shall extend at least 35 feet above:

a. The highest point downstream from the loop where backpressure would be created; and

b. The point of discharge.

2. No outlets for potable water use shall be installed downstream of the peak of the loop.

(j) Vacuum breaker tees shall be assembled such that:

1. The bottom of the horizontal portion of the tee is installed at least one inch above the flood level rim of the receptor;

2. The inside diameter of the tee is equal to or greater than the inside diameter of the drain piping from the water treatment device;

3. The tee is installed in such a position that the discharge will not create a nuisance;

4. The piping upstream of the tee is of a type suitable for water distribution in accordance with s. SPS 384.30 (4) (e).

5. The vent portion of the tee is equal to or greater than the inside diameter of the drain piping from the water treatment device; and

6. The vent port of the tee is:

a. Positioned away from areas where toxic gases and fumes may accumulate; and

b. Constructed to protect the port from falling debris.

(k) A chemical dispensing system shall be connected to the water distribution system in either of the following manners:

1. The fixture supply shall be individually connected to the water distribution system.

2. The fixture supply shall be installed with a pressure bleeding device. The pressure bleeding device shall create a visually free flow of water through the atmosphere from the faucet connection into the fixture drain.

History: 1−2−56; r. (2) through (7), Register, October, 1971, No. 190, eff. 11−1−71; r. and recr. Register, November, 1972, No. 203, eff. 12−1−72; renum. from H 62.14, Register, July, 1983, No. 331, eff. 8−1−83; renum. from ILHR 82.14 and am. (1) (h) 17., r. (2), Register, February, 1985, No. 350, eff. 3−1−85**;** r. and recr. Register, February, 1994, No. 458, eff. 3−1−94; am. (2) (a), Tables 82.41−1, 2, (4) (c), (e) to (i), (k) to (m), (5) (e) 3. a., (i), cr. (4) (n), r. and recr. (5) (b), (f), r. (5) (h), Register, February, 1997, No. 494, eff. 3−1−97**;** correction in (4) (n) made under s. 13.93 (2m) (b) 1., Stats., Register, February, 2000, No. 530; am. (3) (a) 2., (4) (k) 1. and (5) (a), r. and recr. (4) (b) and (n), and Tables 82.41−1 and 82.41−2, cr. (4) (k) 1. c. and (5) (L), Register, December, 2000, No. 540, eff. 1−1−01**;** CR 02−002: am. (3) (intro.), (5) (a), Tables 82.41−1 and 2, renum. (5) (i) to (L) to be (5) (h) to (k) Register April 2003 No. 568, eff. 5−1−03; CR 04−035: cr. (3) (b) 4. d., am. Tables 82.41−1 and −2, 82.41 (2), (3) (a) 1. and (b) 7. Register November 2004 No. 587, eff. 12−1−04; CR 08−055: cr. (3) (b) 4. e., am. (4) (c) 1. a., (f), (i), (n), (5) (a), (e) 2., (f) (intro.), Tables 82.41−1 and 82.41−2 Register February 2009 No. 638, eff. 3−1−09; corrections in (6) made under s. 13.92 (4) (b) 1. and 7., Stats., Register February 2009 No. 638; CR 09−050: r. (6) Register December 2009 No. 648, eff. 1−1−10; CR 10−064: am. (1), (5) (e) 2., Table 82.41−2 Register December 2010 No. 660, eff. 1−1−11; **correction in (2) (a), (b), (3) (a) 1., (b) 7., (4) (m), (5) (e) 2., (j) 4., Table 382.41−1, Table 382.41−2 made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

Subchapter V — Special Plumbing Installations

SPS 382.50 Health care and related facilities. (1) GENERAL. The provisions of this section shall set forth the requirements for the design, installation and maintenance of devices, fixtures and equipment which are installed in health care and related facilities.

(2) FIXTURES AND EQUIPMENT. (a) *Special fixtures and equipment.* 1. 'Requirements for ice manufacture and storage.' Machines for manufacturing ice or any device for handling or storage of ice shall be located in an area not subject to contamination.

2. 'Sterilizers and washer sanitizers.' a. Sterilizers and washer sanitizers shall discharge by means of indirect waste.

b. The indirect waste piping shall discharge by means of air−gap.

3. 'Aspirators.' Aspirators which require the use of water shall be provided with approved cross connection control.

(b) *Spouts and actions.* The selection of spouts and actions on plumbing fixtures shall comply with this section and Table 382.50−1.

1. 'Spouts'. Lavatories and sinks accessible to patients shall have the water supply spout mounted so that its discharge point is a minimum distance of 5″ above the flood level rim of the fixture.

2. 'Actions.' All fixtures used by medical and nursing staff, and all lavatories used by patients and food handlers shall be equipped with valves that can be operated without the use of hands. Where wrist blade handles are used for this purpose, the handles shall not exceed 4 1/2 ″ in length, except handles on scrub sinks and clinical sinks shall be no less than 6″ long.

(c) *Floor drain prohibition.* 1. Except as provided in subd. 2., floor drains may not be installed in operating or delivery rooms.

2. Floor drains may be installed in cystoscopic rooms. The drain shall contain a non−splash, horizontal−flow flushing bowl beneath the drain plate.

(3) WATER SUPPLY SYSTEMS. (a) *Hospital water supply systems.* Water supply systems serving hospitals shall comply with all of the following:

1. All hospitals shall be provided with at least 2 water services. Whenever more than one water main is available, the connections shall be made to different water mains.

2. Each water service connection shall adequately serve the total building water supply demand as specified in s. SPS 382.40 (7).

Note: The installation of two water services or a private water main may require the installation of a check valve. Refer to ch. NR 811 for more information.

(b) *Hospital, community−based residential facility, inpatient hospice and nursing home water supply systems.* 1. Water supply systems serving a hospital, community−based residential facility, inpatient hospice or nursing home shall comply with all of the following:

a. Except as provided in subd. 1. b., a single control valve may serve an area where 4 or fewer patient care units exist and where each unit contains not more than 2 persons.

b. A water supply serving an intensive care patient care unit shall be individually valved.

2. All water distribution piping shall be insulated in accordance with chs. SPS 361 to 366.

3. Cold water shall be supplied to lavatories or sinks located in patient rooms.

4. A hot water distribution system shall be under constant recirculation to provide continuous hot water at each hot water outlet, except that uncirculated hot water distribution piping may not exceed 25 feet in developed length.

5. Water provided to patient showers, therapeutic equipment and all types of baths shall be installed with control valves which automatically regulate the temperature of the water supply to the fixture fitting outlet within a temperature range of 110ºF to 115ºF. Such control valves shall automatically reduce flow to 0.5 gpm or less when the water supply to the fitting outlet exceeds 115ºF or when loss of cold water pressure occurs.

Note: See Appendix A−382.50 (3) (b) 5. for sketches showing various design options.

6. Hot water distribution systems shall be installed and maintained to provide bacterial control by one of the following methods:

a. Water stored and circulation initiated at a minimum of 140ºF and with a return of a minimum of 124ºF.

b. Water chlorinated at 2 mg/L residual.

Note: Additional information may be contained in ASHRAE Guideline 12−2000, Minimizing the Risk of Legionellosis Associated with Building Water Systems. This standard is published by the American Society of Heating, Refrigerating and Air−Conditioning Engineers (ASHRAE); 1791 Tullie Circle, N.E., Atlanta, GA 30329, phone: (800) 5−ASHRAE or (404) 636−8400 ext. 507; fax: (404) 321−5478; e−mail: orders@ashrae.org; or online at www.ashrae.org.

c. Another disinfection system approved by the department.

7. A water distribution system may not be designed, installed and maintained so that the maximum temperature to fixture fitting outlets accessible to patients exceeds 115ºF.

Note: See s. SPS 382.40 (5) and ch. DHS 124 for additional requirements for circulation systems.

8. Except as provided in subd. 7., a water distribution system may not be designed, installed and maintained so that the maximum temperature to fixture fitting outlets exceeds 180ºF.

Table 382.50−1
Spouts and Actions Required in Health Care and Related Facilities

Fixture Location	Type of Spout		Type of Action		
	Standard	Gooseneck or provide a 5−inch clearance	Hand	Wrist	Foot, Knee or Electronic Sensor
NURSING DEPARTMENT					
Patient toilet room		X		X	X
Patient toilet room, isolation		X			X
Utility room		X		X	X
Treatment room		X		X	X
Medicine room		X		X	X
Kitchen floor lavatory		X		X	X
Kitchen floor sink	X	X		X	X
Nurses toilet room	X	X	X	X	X
Floor laboratory		X	X	X	X
NURSERY					
Nursery		X		X	X
Exam/treatment room		X		X	X
Infant intensive care unit		X			X
Labor room		X		X	X
SURGICAL					
Scrub room		X [a]			X
Sub−sterile room	X	X		X	X
Clean−up room	X	X		X	X
Frozen sections room		X	X	X	X
Surgical supply room		X		X	X
Work room	X	X		X	X
Cystoscopic room		X [a]		X	X
Fracture room	X	X		X	X
Recovery room		X			X
CENTRAL SUPPLY					
Work room	X	X		X	X
Solutions room	X	X		X	X
Pharmacy		X	X	X	X
Manufacturing		X		X	X
EMERGENCY DEPARTMENT					
Observation bedroom		X		X	X
Utility room		X		X	X
Operating room		X [a]			X
Exam room		X		X	X
DIAGNOSTIC AND TREATMENT					
Occupational therapy room		X		X	X
Hydro−therapy room		X		X	X
Exam/treatment room		X		X	X
Radium treatment/exam room		X		X	X
Toilet room		X		X	X
Dark room		X		X	X
Autopsy room		X [a]			X
Lavatory in autopsy shower room		X	X	X	X
Laboratory		X	X	X	X

Table 382.50−1 (Continued)
Spouts and Actions Required in Health Care and Related Facilities

Fixture Location	Type of Spout		Type of Action		
	Standard	Gooseneck or provide a 5−inch clearance	Hand	Wrist	Foot, Knee or Electronic Sensor
CLINIC OR OUTPATIENT DEPARTMENT					
Exam/treatment room		X		X	X
Dental operating room		X			X
Dental laboratory		X	X	X	X
Dental recovery room		X		X	X
Surgical room		X [a]			X
Eye exam room		X			X
Ear, nose and throat exam room		X			X
SERVICE DEPARTMENT					
Lavatory in kitchen	X	X		X	X

X = Spout and action meet required type.

[a] Spout includes a spray head.

History: 1−2−56; am. (3) (4) and (5), Register, August, 1961, No. 68, eff. 9−1−61; r. and recr. Register, November, 1972, No. 203, eff. 12−1−72; r. and recr., Register, February, 1979, No. 278, eff. 3−1−79; renum. from H 62.16, Register, July, 1983, No. 331, eff. 8−1−83; renum. from ILHR 82.16 and am. (7) (b), (10) (a) 1. and 2., (b) 2., (f) (intro.) and (h), Register, February, 1985, No. 350, eff. 3−1−85; r. (10) (f) and Table 25, Register, February, 1994, No. 458, eff. 3−1−94; correction in (7) (b) made under s. 13.93 (2m) (b) 7., Stats., Register, July, 2000, No. 535; am. (2) and (10) (g) Table 26, r. and recr. (10) (g) and (h), r. (10) (i), Register, December, 2000, No. 540, eff. 1−1−01; CR 02−002: r. and recr. Register April 2003 No. 568, eff. 5−1−03; CR 04−035: am. Table 82.50−1 and (3) (b) 5. Register November 2004 No. 587, eff. 12−1−04; correction in (3) (b) 2. made under s. 13.92 (4) (b) 7., Stats., Register February 2008 No. 626; CR 08−055: am. (3) (b) 5. Register February 2009 No. 638, eff. 3−1−09; **correction in (2) (b) (intro.), (3) (a) 2., (b) 2. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 382.51 Manufactured homes and manufactured home communities. (1) DRAIN SYSTEMS. Except as provided in pars. (a) and (b), the building sewers and private interceptor main sewers serving a manufactured home or manufactured home community shall comply with s. SPS 382.30.

(a) The minimum slope of the aboveground building sewer shall be 1/8 inch per foot.

(b) For manufactured homes, the most upstream point of the building sewer shall be determined at the connection with the building drain installed by the manufactured home manufacturer prior to delivery.

(c) The above ground building sewer shall be constructed of materials suitable for above ground drain and vent as specified in s. SPS 384.30 (2) (a).

(2) WATER SUPPLY SYSTEMS. (a) Except as provided in pars. (b) and (c), the water services and private water mains for a manufactured home or manufactured home community shall comply with s. SPS 382.40.

(b) The above ground water service shall be constructed of materials approved for water distribution as specified in s. SPS 384.30 (4) (e).

(c) The curb stop serving an individual manufactured home shall terminate outside the perimeter of the manufactured home.

(d) For manufactured homes, the most downstream point of the water service shall be determined at the connection with the water distribution piping by the manufactured home manufacturer prior to delivery.

(3) MANUFACTURED HOME CONNECTIONS. (a) Frost sleeves for plumbing serving a manufactured home shall conform to all of the following:

1. Water service and building sewer connections shall be provided with frost sleeves extending to within 6 inches of the top of the below ground horizontal building sewer or water service, or to a depth at least 6 inches below the predicted depth of frost in accordance with Table 382.30−6.

2. The frost sleeve shall terminate at least 2 inches above grade.

3. The sleeve shall be constructed of material approved for building drain or building sewer material as specified in s. SPS 384.30 (2).

(b) Termination of the water service and building sewer shall conform to all of the following:

1. The manufactured home water service for connection to the manufactured home shall terminate a minimum of 6 inches above the surrounding finished grade.

2. The manufactured home building sewer for connection to the manufactured home shall terminate a minimum of 4 inches above the surrounding finished grade and may not terminate higher than the water service.

(c) The manufactured home water service and building sewer shall be capped or plugged when not connected to a manufactured home.

Note: See Appendix A−382.51 (3) for further explanatory material.

History: Cr. Register, February, 1985, No. 350, eff. 3−1−85; r. and recr. Table, Register, August, 1991, No. 428, eff. 9−1−91; am. (2) (d), Register, February, 1994, No. 458, eff. 3−1−94; CR 02−002: r. and recr. Register April 2003 No. 568, eff. 5−1−03; CR 08−055: am. Register February 2009 No. 638, eff. 3−1−09; **correction in (1) (intro.), (c), (2) (a), (b), (3) (a) 1., 3. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

Subchapter VI — Installation

SPS 382.60 Pipe hangers and supports. The provisions of this section control the types, materials and installation of anchors, hangers and supports for plumbing piping.

(1) MATERIAL. (a) *Strength.* Hangers, anchors and supports for piping shall be of sufficient strength to support the piping and its contents. Drain piping shall be considered as being full of water. Underground piers for pipe support shall be of concrete, masonry, plastic or pressure treated wood.

(b) *Compatibility.* 1. Hangers and straps shall be of a compatible material that will reduce the potential for galvanic action with the piping.

2. Hangers and straps may not distort, cut or abrade piping.

(2) INSTALLATION. (a) Piping hangers and anchors shall be securely attached to the building's structure at intervals to support the piping and its contents, but not at intervals greater than those

specified in Table 382.60. The connection of drain piping to a fixture or appliance shall be considered a point of support.

(b) Hubless pipe installed in the horizontal position shall be supported within 24″ on each side of a joint, unless the joint has an alignment retaining shield.

(c) Hangers shall not be attached to a building's structure by means of wood plugs.

(d) Shower valves and piping from the shower valve to the shower head outlet shall be securely attached to the structure.

Table 382.60
Support Spacing

Material	Maximum Horizontal Spacing (feet)	Maximum Vertical Spacing (feet)
Acrylonitrile Butadiene Styrene (ABS)	4	10
Brass	10	10
Cast iron	5[a]	15
Copper or Copper−Alloy Pipe	12	10
Copper or Copper−Alloy Tubing:		
≤ 1¼″ diameter[c]	6	10
≥ 1½″ diameter[c]	10	10
Chlorinated Polyvinyl Chloride (CPVC):		
≤ 1″ diameter[c]	3	5[b]
≥ 1¼″ diameter[c]	4	6[b]
Crosslinked Polyethylene (PEX)	2 2/3	4
Ductile Iron	5[a]	15
Galvanized Steel	12	15
Lead	Continuous	4
Polybutylene (PB)	2 ft. 8 in.	4
Polyethylene (PE)	2	4
Polypropylene (PP)	2	4
Polyvinylidene Fluoride (PVDF)	2	4
Polyvinyl Chloride, flexible (PVC)	2	4
Polyvinyl Chloride (PVC)	4	10
Stainless Steel	12	15

[a] The maximum horizontal spacing for supports may be increased to 10 feet when 10−foot lengths of pipe are employed.
[b] Mid−story guide is to be employed.
[c] "≥" means greater than or equal to.
"≤" means less than or equal to.

History: Cr. Register, February, 1985, No. 350, eff. 3−1−85; r. and recr. Register, May, 1988, No. 389, eff. 6−1−88; r. and recr. Table 82.60, Register, February, 1994, No. 458, eff. 3−1−94; cr. (2) (d), Register, December, 2000, No. 540, eff. 1−1−01; CR 02−002: am. Table Register April 2003 No. 568, eff. 5−1−03; **correction in (2) (a) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

Subchapter VII — Plumbing Treatment Standards

SPS 382.70 Plumbing treatment standards. **(1)** PURPOSE. The purpose of this section is to establish plumbing treatment standards for plumbing systems that supply water to outlets based on the intended use.

(2) SCOPE. The provisions of this section apply to plumbing systems that supply water to outlets.

Note: For requirements and specifications for POWTS, refer to ch. SPS 383.

Note: The department of natural resources requires WPDES permits for point source discharges under ch. 283, Stats.

(3) GENERAL REQUIREMENTS. A plumbing system shall supply water that is of a quality that will protect public health and the waters of the state and be suitable for the intended use.

Note: Refer to s. SPS 382.34 for requirements for wastewater reuse.

(4) MINIMUM REQUIREMENTS. (a) Except as provided under par. (b), a plumbing system shall supply a quality of water at the outlet or at the termination of the plumbing system that meets or exceeds the minimum requirements as specified in Table 382.70−1.

(b) For an outlet other than a plumbing fixture, appliance or appurtenance, there may be more stringent requirements assigned by a municipality, governmental unit, state agency or the owner of the plumbing system.

Table 382.70−1
Plumbing Treatment Standards

Intended Use	Plumbing Treatment Standards [f]
1. Drinking, cooking, food processing, preparation and cleaning, pharmaceutical processing and medical uses	NR 811 and 812 approved sources
2. Personal hygiene, bathing and showering	NR 811 and 812 approved sources
3. Automatic fire protection systems	As acceptable by local authority
4. Swimming pool makeup water	NR 811 and 812 approved sources
5. Swimming pool fill water	DHS 172 requirements
6. Cooling water [b]	pH 6 − 9 [b] ≤ 50 mg/L BOD_5 ≤ 30 mg/L TSS Free chlorine residual 1.0 − 10.0 mg/L[b]
7. Subsurface infiltration and irrigation, using reuse as the source [c]	≤ 15 mg/L oil and grease ≤30 mg/L BOD_5 ≤35 mg/L TSS < 200 fecal coliform cfu/100 mL [d]
8. Subsurface infiltration and irrigation, using stormwater as the source [c]	< 15 mg/L oil and grease < 60 mg/L TSS
9. Surface or spray irrigation using stormwater and clearwater as the source [c]	≤ 10 mg/L BOD_5 ≤ 5 mg/L TSS
10. Surface irrigation except food crops, vehicle washing, clothes washing, air conditioning, soil compaction, dust control, washing aggregate and making concrete [a, c]	pH 6 − 9 [b] ≤10 mg/L BOD_5 ≤ 5 mg/L TSS Free chlorine residual 1.0 − 10.0 mg/L[b]
11. Toilet and urinal flushing	pH 6 − 9 [b] 200 mg/L BOD_5 ≤ 5 mg/L TSS Free chlorine residual .1 mg/L − 4.0 mg/L [b]
12. Uses not specifically listed above	Contact department for standards

[a] Refer to the department of agriculture, trade and consumer protection for commercial use.

[b] Applies only to wastewater treatment devices for reuse systems. Other equivalent disinfection methods may be approved by the department.

[c] These requirements do not apply to the treatment of industrial wastewater or other wastewater discharges that are subject to a WPDES permit issued by the department of natural resources.

[d] A 12−inch minimum separation of medium sand or finer material above high groundwater or bedrock.

[f] For stormwater, the plumbing treatment standards are based on an annual average. Evaluation of research to prove compliance with this table is based on the geometric mean of the data acceptable to the department or an equivalent method.

History: CR 02−002: cr. Register April 2003 No. 568, eff. 5−1−03; CR 04−035: am. Table 82.70−1 Register November 2004 No. 587, eff. 12−1−04; CR 08−055: am. Table 82.70−1 Register February 2009 No. 638, eff. 3−1−09; CR 10−064: am. Table 82.70−1 Register December 2010 No. 660, eff. 1−1−11; **correction in (4) (a) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

Chapter SPS 382

APPENDIX

The material contained in this appendix is for clarification purposes only. The notes, illustrations, etc., are numbered to correspond to the number of the rule as it appears in the text of the code.

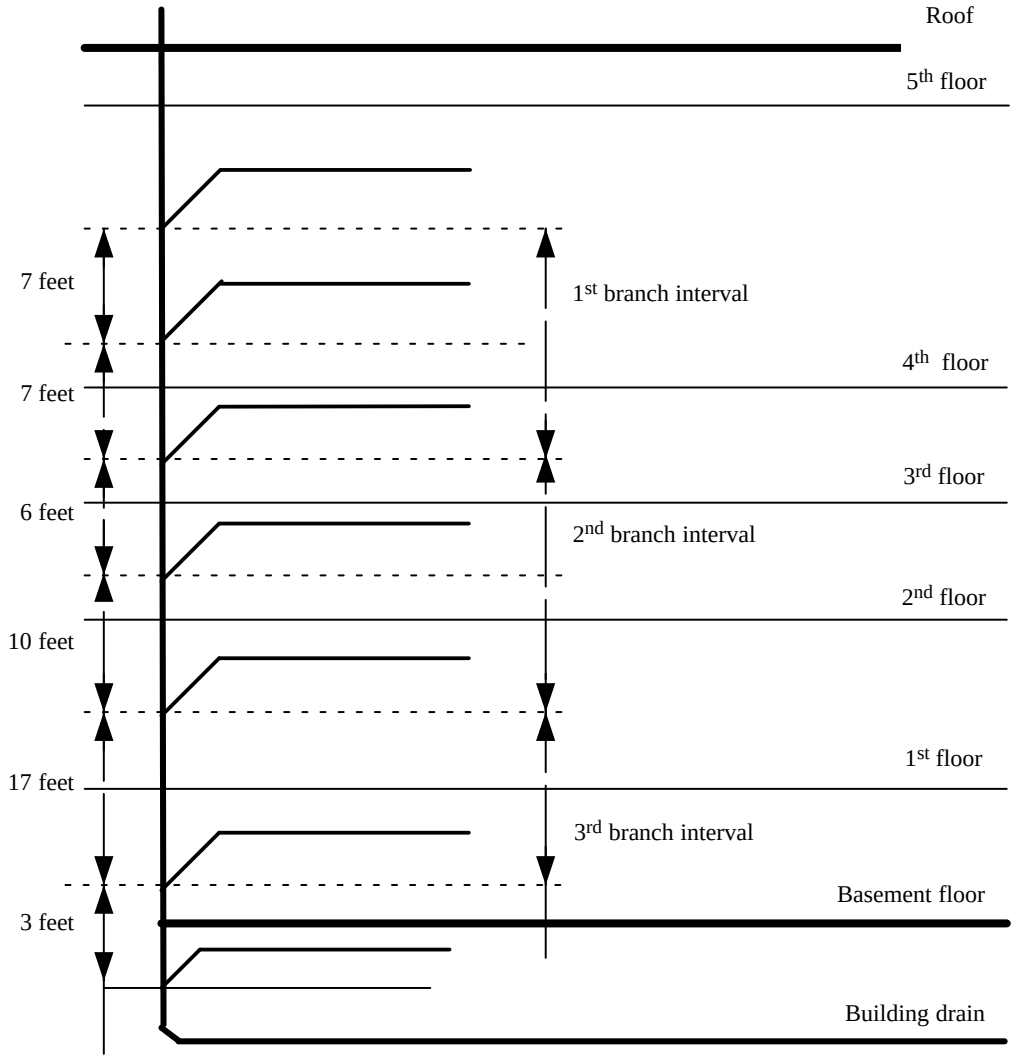
A−382.20 (2) AGENT MUNICIPALITIES. The department has designated several municipalities the authority to review and approve plumbing plans and specifications for those plumbing installations located within the boundary limits of the municipality and that require approval under s. SPS 382.20. The cities of Appleton, Eau Claire, Green Bay, Janesville, Madison, Milwaukee, Oshkosh, and West Bend have been designated as authorized municipalities. (A project in Janesville or West Bend may be submitted to the state or to the municipality.) Eau Claire, Janesville, and Madison have been designated as authorized municipalities for stormwater infiltration review when required as per s. SPS 382.20.

Note: This listing is maintained on the department's web site at http://dsps.wi.gov/sb/sb−PlumbingAgentMunis.html. Also see the Plumbing Program page on the Safety and Buildings Division web site at http://dsps.wi.gov/sb/sb−PlumbingProgram.html. Both web pages are subject to change.

A−382.20 (4) WATER QUALITY MANAGEMENT AGENCIES (WQM.) There are 23 water quality management agencies serving the state. These agencies review proposed sewer extensions and provide Sewer Service Area Conformance letters (also known as WQM letters).

Note: This listing is maintained by the department of natural resources and may be updated periodically; see also http://www.dnr.state.wi.us/org/water/wm/glwsp/facilities/rpc.htm.

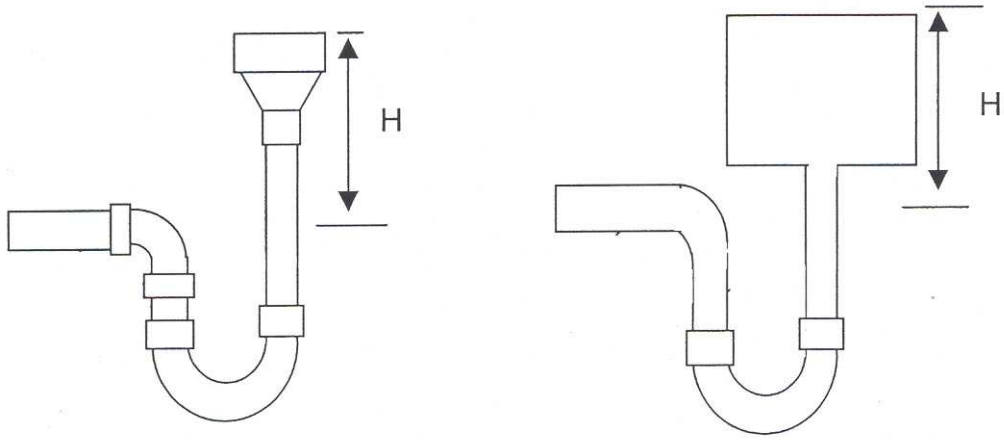
A−382.30 (4)−1. BRANCH INTERVALS.



A−382.30 (4)−2. RECEPTOR DESIGN. The following table lists the gallons per minute (GPM) that can be expected to readily flow through a given size trap where the receptor has a height (H) as indicated.

Also listed is a drainage fixture unit (dfu) load that a given size receptor trap may be expected to adequately receive.

Note: A minimum individual 4 inch diameter trap and drain for a commercial type dishwasher is recommended.



Receptor Trap Size (in inches)	H (in inches)	GPM	Drainage Fixture Units (dfu)
1½	12	4	2
2	14	8	4
3	15	12	6
4	17	40	20
5	20	70	35
6	22	120	60
8	25	250	125

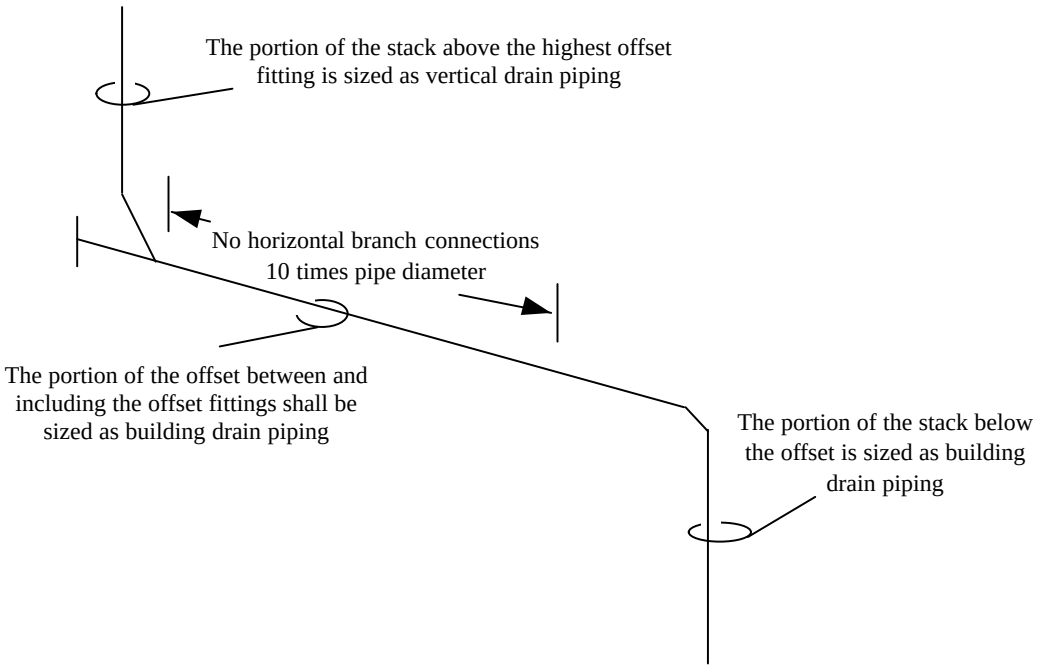
A−382.30 (4)−3. SLOPE BETWEEN MANHOLES IN CONVENTIONAL GRAVITY SEWERS. Section NR 110.13 (2) (c) reads:

"*Slope.* 1. Conventional gravity sewers shall be laid with uniform slope between manholes. All sewers shall be designed and constructed to give average velocities of not less than 60 centimeters per second (2.0 feet per second) when flowing full. The minimum slopes in Table 1 shall be provided. Slopes less than 0.4% may be permitted for 20 centimeter (8 inch) sewers. In such cases, however, the slope may not be less than 0.3%. The department [DNR] will approve these sewers only when the owner demonstrates that physical circumstances warrant the lesser slope. Furthermore, approval will not be granted until the department [DNR] has received written assurance from the operating authority that the authority will provide the additional maintenance which may result from the sedimentation due to decreased velocities."

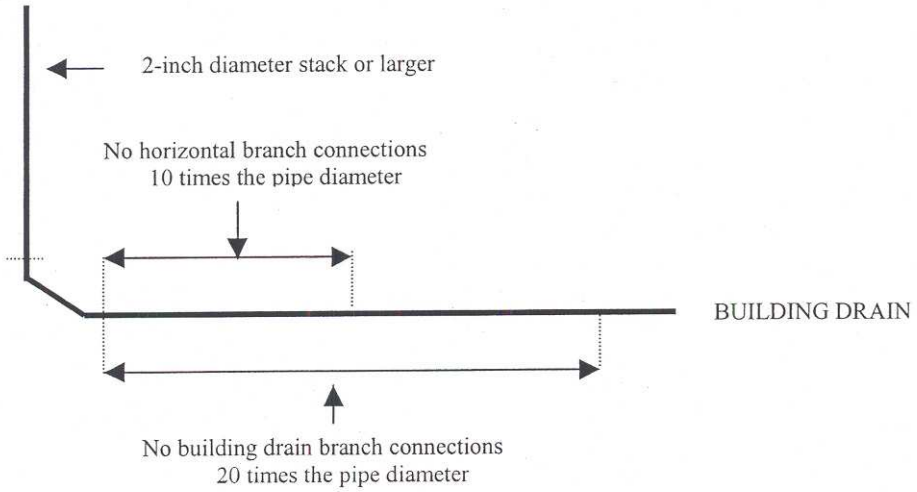
NR 110 Table 1

Sewer Size (in inches)	Minimum Slope (ft./100 ft.)
8 (20 cm)	0.40
10 (25 cm)	0.28
12 (30 cm)	0.22
15 (38 cm)	0.15
18 (46 cm)	0.12
21 (53 cm)	0.10
24 (61 cm)	0.08

A−382.30 (6) (b) OFFSETS IN VERTICAL DRAINS.

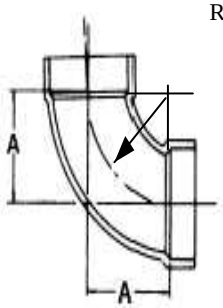


A−382.30 (7) HORIZONTAL BRANCH DRAIN CONNECTION AT BASE OF A STACK.

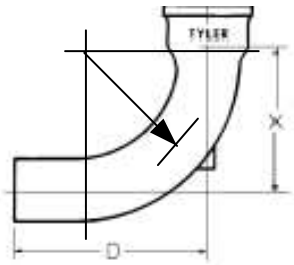


A−382.30 (8) MEASURING RADIUS OF A FITTING.

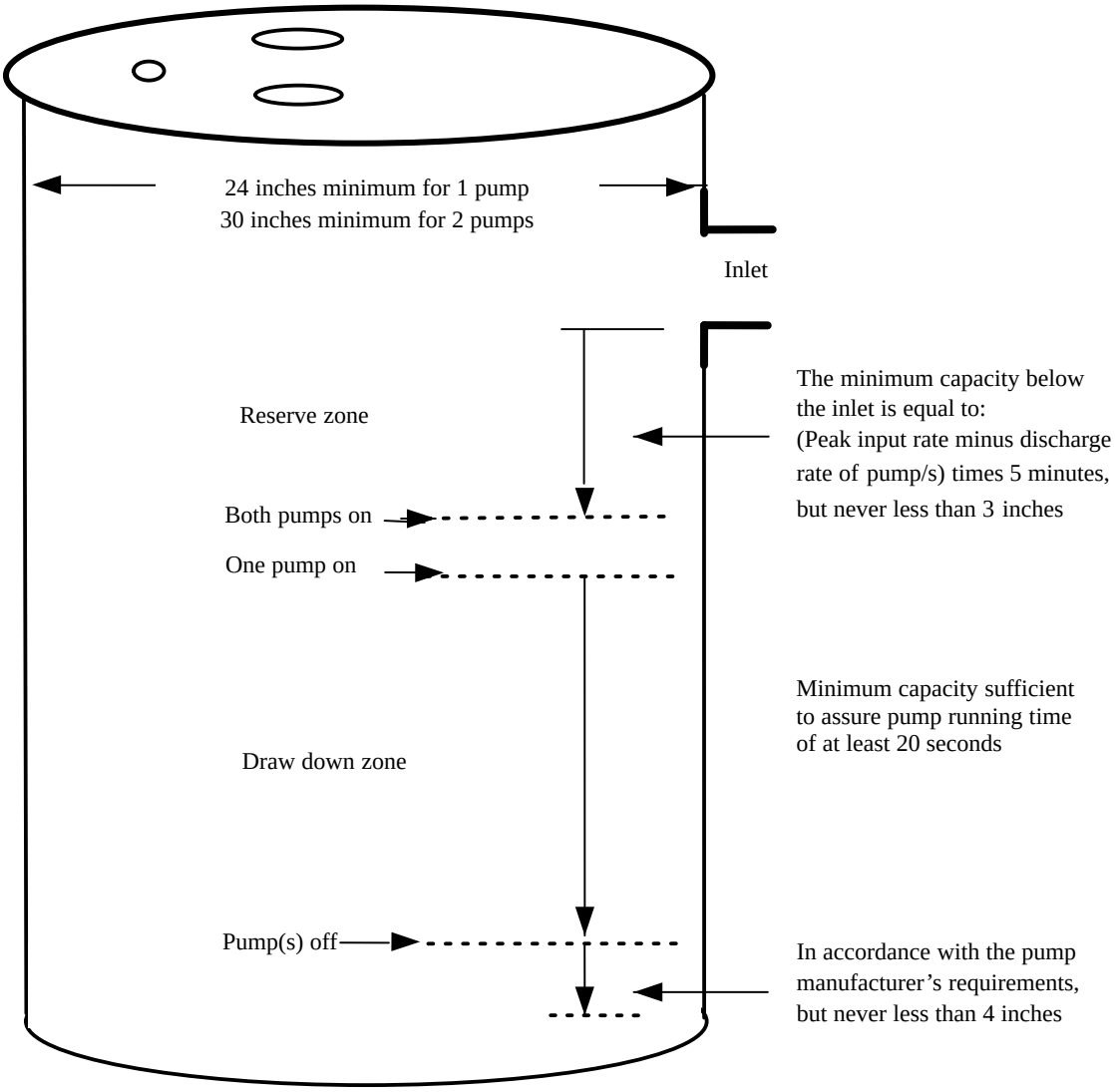
Radius of a plastic DWV fitting



Radius of hub & spigot fitting



A−382.30 (10) (a) DETERMINING REQUIRED CAPACITY OF SANITARY SUMP.



A−382.30 (10) (a) SUMPS.

Capacity of Sumps (in gallons)

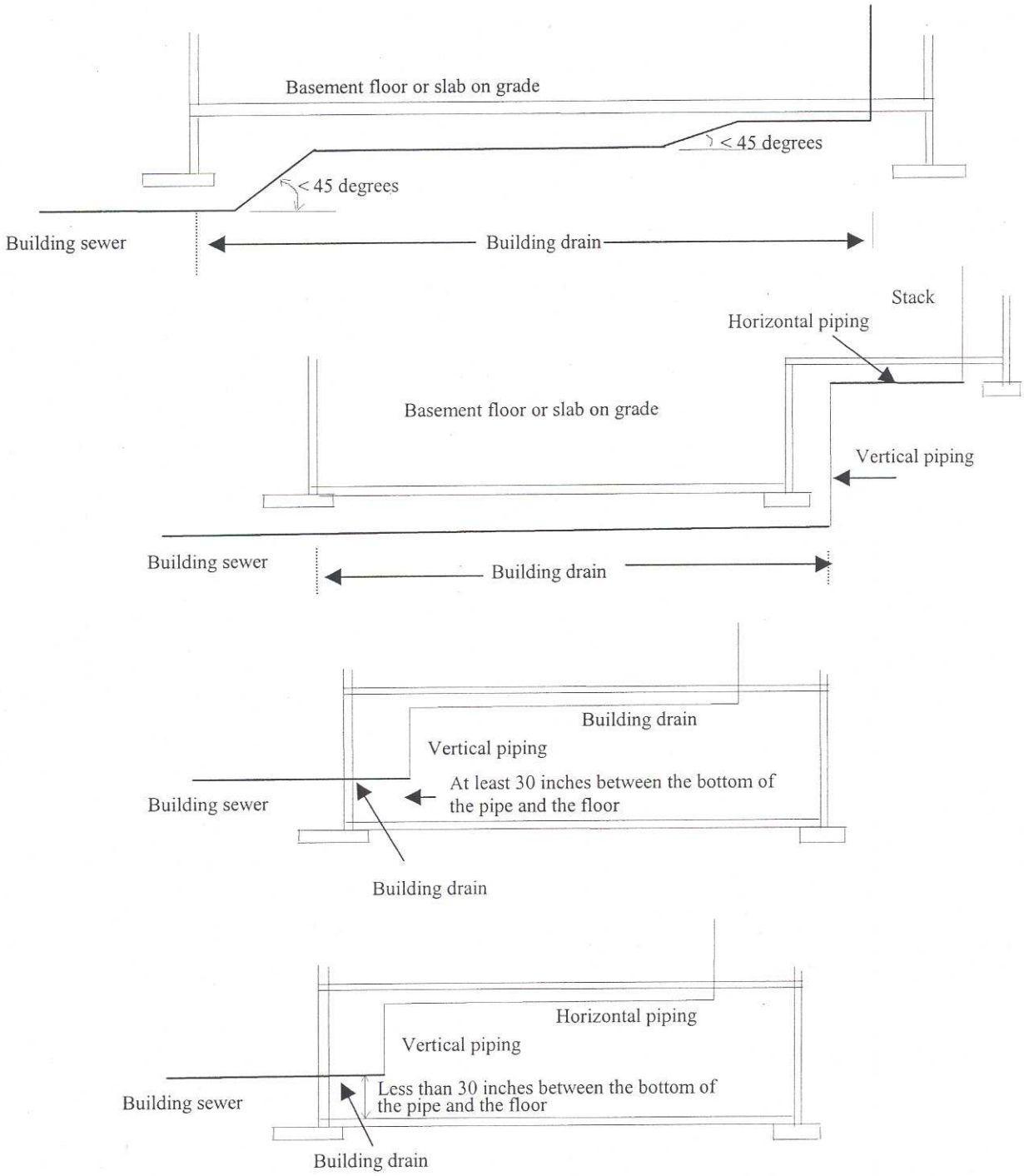
Diameter of sump in inches	Volume in gal/ft	Diameter of sump in inches	Volume in gal/ft
24	23.5	41	68.6
25	25.5	42	72.1
26	27.6	43	75.5
27	29.7	44	79.1
28	32.0	45	82.7
29	34.3	46	86.5
30	36.8	47	90.2
31	39.2	48	94.0
32	41.8	54	119.0
33	44.5	60	147.0
34	47.2	66	178.0
35	50.0	72	211.5
36	52.8	78	248.4
37	55.9	84	288.1
38	59.0	90	330.8
39	62.1	96	376.3
40	65.3	108	477.3

A−382.30 (10) (b) 3. VELOCITY AND FLOW RELATIONSHIP MAINTAINING 2 FEET PER SECOND.

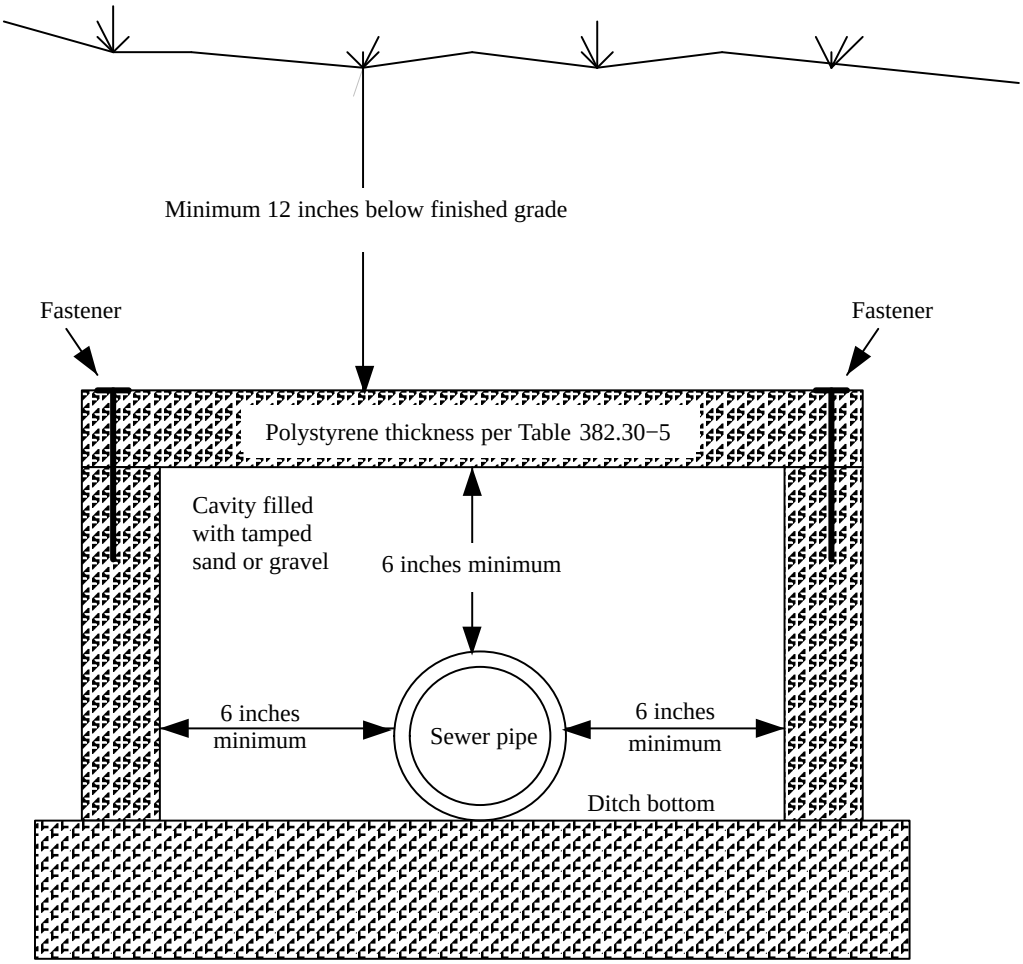
Schedule 40 PVC
Velocity And Flow Relationship Maintaining 2 Feet Per Second

Nominal Inside Diameter (in inches)	Actual Inside Diameter (in inches)	GPM creating 2 ft. per second
1¼	1.38	9
1½	1.61	13
2	2.067	21
3	3.068	46
4	4.026	79

A−382.30 (11) (b) BUILDING DRAINS SERVING ANY BUILDING.



A−382.30 (11) (c) BUILDING SEWER INSULATION.



A−382.30 (11) (d) SETBACKS FOR VARIOUS CONTAMINANT SOURCES. Setbacks for various contaminant sources as specified in chs. NR 811 and NR 812 read:

NR 811.12 (5) (d)

(d) *Minimum separation from contamination sources.* The well shall be adequately separated from potential sources of contamination. Unless a hydrogeologic investigation indicates lesser separation distances would provide adequate protection of a well from contamination or department approved treatment is installed to address the potential contamination concerns, the minimum separation distances shall be:

1. Ten feet between a well and an emergency or standby power system that is operated by the same facility which operates the well and that has a double wall above ground storage tank with continuous electronic interstitial leakage monitoring. These facilities shall meet the installation requirements of s. SPS 310.260 and receive written approval from the department of safety and professional services or its designated Local Program Operator under s. SPS 310.110.

2. Fifty feet between a well and a storm sewer main or a sanitary sewer main where the sanitary sewer main is constructed of water main class materials and joints. Gravity sanitary sewers shall be successfully air pressure tested in place. The air pressure test shall meet or exceed the requirements of the 4 psi low pressure air test for plastic gravity sewer lines found in the latest edition of Standard Specifications for Sewer & Water Construction in Wisconsin. Force mains shall be successfully pressure tested with water to meet the AWWA C600 pressure and leakage testing requirements for one hour at 125% of the pump shut−off head.

3. Two hundred feet between a well and any sanitary sewer main not constructed of water main class materials, sanitary sewer manhole**,** lift station, one or 2 family residential heating fuel oil underground storage tank or above ground storage tank or POWTS treatment tank or holding tank component and associated piping.

4. Three hundred feet between a well and any farm underground storage tank system or other underground storage tank system with double wall and with electronic interstitial monitoring for the system, which means the tank and any piping connected to it. These installations shall meet the most restrictive installation requirements of s. SPS 310.260 and receive written approval from the department of safety and professional services or its designated Local Program Operator under s. SPS 310.110. These requirements apply to tanks containing gasoline, diesel, bio−diesel, ethanol, other alternative fuel, fuel oil, petroleum product, motor fuel, burner fuel, lubricant, waste oil, or hazardous substances.

5. Three hundred feet between a well and any farm above ground storage tank with double wall, or single wall tank with other secondary containment and under a canopy; other above ground storage tank system with double wall, or single wall tank with secondary containment and under a canopy and with electronic interstitial monitoring for a double wall tank or electronic leakage monitoring for a single wall tank secondary containment structure. These installations shall meet the most restrictive installation requirements of s. SPS 310.260 and receive written approval from the department of safety and professional services or its designated Local Program Operator under s. SPS 310.110. These requirements apply to tanks containing gasoline, diesel, bio−diesel, ethanol, other alternative fuel, fuel oil, petroleum product, motor fuel, burner fuel, lubricant, waste oil, or hazardous substances.

6. Four hundred feet between a well and a POWTS dispersal component with a design capacity of less than 12,000 gallons per day, a cemetery or a storm water retention or detention pond.

7. Six hundred feet between a well and any farm underground storage tank system or other underground storage tank system with double wall and with electronic interstitial monitoring for the system, which means the tank and any piping connected to it; any farm above ground storage tank with double wall, or single wall tank with other secondary containment and under a canopy or other above ground storage tank system with double wall, or single wall tank with secondary containment and under a canopy; and with electronic interstitial monitoring for a double wall tank or electronic leakage monitoring for a single wall tank secondary containment structure. These installations shall meet the standard double wall tank or single wall tank secondary containment installation requirements of s. SPS 310.260 and receive written approval from the department of safety and professional services or its designated Local Program Operator under s. SPS 310.110. These requirements apply to tanks containing gasoline, diesel, bio−diesel, ethanol, other alternative fuel, fuel oil, petroleum product, motor fuel, burner fuel, lubricant, waste oil, or hazardous substances.

8. One thousand feet between a well and land application of municipal, commercial, or industrial waste; the boundaries of a landspreading facility for spreading of petroleum−contaminated soil regulated under ch. NR 718 while that facility is in operation; agricultural, industrial, commercial or municipal waste water treatment plant treatment units, lagoons, or storage structures; manure stacks or storage structures; or POWTS dispersal component with a design capacity of 12,000 gallons per day or more.

9. Twelve hundred feet between a well and any solid waste storage, transportation, transfer, incineration, air curtain destructor, processing, wood burning, one time disposal or small demolition facility; sanitary landfill; any property with residual groundwater contamination that exceeds ch. NR 140 enforcement standards; coal storage area; salt or deicing material storage area; any single wall farm underground storage tank or single wall farm above ground storage tank or other single wall underground storage tank or above ground storage tank that has or has not received written approval from the department of safety and professional services or its designated Local Program Operator under s. SPS 310.110 for a single wall tank installation. These requirements apply to tanks containing gasoline, diesel, bio−diesel, ethanol, other alternative

fuel, fuel oil, petroleum product, motor fuel, burner fuel, lubricant, waste oil, or hazardous substances; and bulk pesticide or fertilizer handling or storage facilities.

Note: The department's database of contaminated properties, established in accordance with ss. 292.12 (3), 292.31 (1), and 292.57, Stats., can be found on the department's Bureau for Remediation and Redevelopment internet web site. The Bureau for Remediation and Redevelopment Tracking System (BRRTS) is an on−line database that provides information on known contaminated soil or groundwater and tracks the status of the cleanup actions. RR Sites Map is the program's geographic information system that provides a map−based system of contaminated properties in Wisconsin. The department of safety and professional services Storage Tank Database Information can be found at the department of safety and professional services web site.

NR 812.08 Well, reservoir and spring location. (1) GENERAL. Any potable or nonpotable well or reservoir shall be located:

(a) So the well and its surroundings can be kept in a sanitary condition.

(b) At the highest point on the property consistent with the general layout and surroundings if reasonably possible, but in any case protected against surface water flow and flooding and not downslope from a contamination source on the property or on an adjacent property regardless of what was installed first, the well or the contamination source. When a contamination source is installed upslope from a well in violation of this section after the well construction has been completed, the violation is not the responsibility of the well driller, except if the well driller knew or should have known of the proposed upslope installation of the contamination source. When there is no location on the property where this requirement can be met, a well may be constructed without a variance if it is constructed with a minimum of 20 or more feet of well casing pipe than is required by ss. NR 812.12 and 812.13 and Tables I and II or with a minimum of 60 feet of well casing pipe provided that the minimum well casing pipe depth requirements of s. NR 812.12 or 812.13 and Table I or II are met. This exception does not apply to high capacity, school or wastewater treatment plant wells. A well or reservoir is located downslope from a contamination source, regardless of the presence or absence of a structure between the well and the contamination source, if:

1. The ground surface elevation at the well or reservoir is lower than the elevation at the contamination source, and
2. Surface water that washes over the contamination source would travel within eight feet of the well or reservoir, or over the well or reservoir.

(c) As far away from any known or possible source of contamination as the general layout of the premises and the surroundings allow.

Note: Section PSC 114.234 C8 requires that a horizontal clearance of at least ¾ of the vertical clearance of the conductors, including overhead power lines to the ground required by Rule 232 shall be maintained between open conductors and wells. Persons installing wells must comply with this requirement.

(d) Such that any potential contaminant source, not identified in this section or in Table A, is a minimum of 8 feet from the well or reservoir.

(e) Every well shall be located so that it is reasonably accessible with proper equipment for cleaning, treatment, repair, testing, inspection and any other maintenance that may be necessary.

(2) RELATION TO BUILDINGS. In relation to buildings, the location of any potable or nonpotable well shall be as follows:

(a) When a well is located outside and adjacent to a building, it shall be located so that the center line of the well extended vertically will clear any projection from the building by not less than 2 feet and so that the top of the well casing pipe extends at least 12 inches above the final established ground grade.

(b) When a structure is built over a drilled well, it shall have an access hatch or removable hatch, or provide other access to allow for pulling of the pump. The well casing pipe shall extend at least 12 inches above the floor and be sealed watertight at the point where it extends through the floor.

(c) No well may be located, nor a building constructed, such that the well casing pipe will terminate in or extend through the basement of any building or terminate under the floor of a building having no basement. The top of a well casing pipe may terminate in a walkout basement meeting the criteria of s. NR 812.42 (9) (b) 1. to 4. A well may not terminate in or extend through a crawl space having a below ground grade depression or excavation.

(3) RELATION TO FLOODPLAINS. (a) A potable or nonpotable well may be constructed, reconstructed or replaced in a floodfringe provided that the top of the well is terminated at least 2 feet above the regional flood elevation for the well site.

(b) A well may be reconstructed or replaced in a floodway provided that the top of the well is terminated at least 2 feet above the regional flood elevation for the well site.

(c) A well may not be constructed on a floodway property that is either undeveloped or has building structures but no existing well.

(d) The regional flood elevation may be obtained from the department.

(4) RELATION TO CONTAMINATION SOURCES. Minimum separating distances between any new potable or nonpotable well, reservoir or spring and existing sources of contamination; or between new sources of contamination and existing potable or nonpotable wells, reservoirs or springs shall be maintained as described in this subsection. The minimum separating distances of this subsection do not apply to dewatering wells approved under s. NR 812.09 (4) (a). Greater separation distances may be required for wells requiring plan approval under s. NR 812.09. Separation distance requirements to possible sources of contamination will not be waived because of property lines. Minimum separating distances are listed in Table A and are as follows:

(a) Eight feet between a well or reservoir and a:

1. Buried gravity flow sanitary or storm building drain having pipe conforming to ch. SPS 384;
2. Buried gravity flow sanitary or storm building sewer having pipe conforming to ch. SPS 384;
3. Watertight clear water waste sump;
4. Buried clear water waste drain having pipe conforming to ch. SPS 384;
5. Buried gravity flow foundation drain;
6. Rainwater downspout outlet;
7. Cistern;
8. Buried building foundation drain connected to a clear water waste drain or other subsoil drain;
9. Noncomplying pit, subsurface pumproom, alcove, or reservoir;
10. Nonpotable well;
11. Fertilizer or pesticide storage tank with a capacity of less than 1,500 gallons, but only when the well is nonpotable;

Note: For potable wells see par. (d) 1.

12. Plastic silage storage and transfer tube;
13. Yard hydrant;
14. Swimming pool, measured to the nearest edge of the water; or
15. Dog or other small pet house, animal shelter or kennel housing not more than 3 adult pets on a residential lot.

(b) Twenty−five feet between a well or reservoir and a:

1. Buried grease interceptor or trap;
2. Septic tank;
3. Holding tank;
4. Buried building drain or building sewer having pipe not conforming to ch. SPS 384, wastewater sump, or non−watertight clear water waste sumps,
5. Buried pressurized sanitary building sewer having pipe conforming to ch. SPS 384;
6. Buried gravity manure sewer;
7. Lake, river, stream, ditch or stormwater detention pond or basin measured to the regional high water elevation in the case of a lake or stormwater detention pond, to the edge of the floodway in the case of a river or stream or to the edge in the case of a ditch or stormwater detention basin;
8. Liquid−tight barn gutter;
9. Animal barn pen with concrete floor;
10. Buried pressurized sewer pipe conveying manure provided that the pipe meets ASTM specification D−2241, with standard dimension ratio of 21 or less or pressure pipe meeting the requirements of s. NR 110.13 or 811.62.
11. Buried fuel oil tanks serving single family residences, including any associated buried piping;
12. Discharge to ground from a water treatment device;
13. Vertical shaft installed below grade used for intake of air for a heating or air conditioning system; or
14. Buried sanitary or storm collector sewer serving 4 or fewer living units or having a diameter of 6 inches or less.

(c) Fifty feet between a well or reservoir and a:

1. Soil absorption unit receiving less than 8,000 gallons/day, existing, abandoned or alternate, but not including a school soil absorption unit;

Note: For school soil absorption units see par. (e); for soil absorption units receiving more than 8,000 gallons/day see par. (f) 3.

2. Privy;
3. Pet waste pit disposal unit;
4. Animal shelter;
5. Animal yard;

6. Silo;
7. Buried sewer used to convey manure having pipe conforming to ch. SPS 384 that does not meet the specifications in par. (b);
8. Liquid tight manure hopper or reception tank;
9. Filter strip;
10. Buried sanitary or storm collector sewer serving more than 4 living units or larger than 6 inches in diameter except that wells may be located or sewers installed such that a well is less than 50 feet, but at least 25 feet, from gravity collector sewers smaller than 16 inches in diameter or from force main collector sewers 4 inches or smaller in diameter provided that within a 50−foot radius of the well the installed sewer pipe meets the allowable leakage requirements of AWWA C600 and the requirements for water main equivalent type pipe as follows:
    a. For sewers > 4″, diameter, but < 16″, diameter: PVC pipe > 4″, diameter, but < 12″, diameter shall meet AWWA C900 with elastomeric joints having a standard dimension ratio of 18 or less; PVC pipe > 12″, diameter, but < 16″, diameter shall meet AWWA C905 with elastomeric joints having a standard dimension ratio of 18 or less; Ductile iron pipe shall meet AWWA C115 or AWWA C151 having a thickness class 50 or more.
    b. For sewers < 3″, diameter, the pipe shall be any rigid pipe in the ch. SPS 384 "Table for Pipe and Tubing for Water Services and Private Water Mains," including approved ABS, brass, cast iron, CPVC, copper (not including type M copper) ductile iron, galvanized steel, polybutylene (PB), polyethylene (PE), PVC, or stainless steel pipe.
11. An influent sewer to a wastewater treatment plant;
12. The nearest existing or future grave site in cemeteries;
13. Wastewater treatment plant effluent pipe;
14. Buried pressurized sewer having pipe not conforming to ch. SPS 384; or
15. Manure loading area.

Note: The minimum separating distance between a well or reservoir and a lift station is based on the presence of a sewer force main at the lift station.

(d) One hundred feet between a well or reservoir and a:

1. Bulk surface storage tank with a capacity greater than 1,500 gallons or any bulk buried storage tank regardless of capacity, including, for both surface or buried tanks, associated buried piping for any solid, semi−solid or liquid product but not including those regulated under par. (b) 12. This subdivision includes, but is not limited to petroleum product tanks, waste oil tanks and pesticide or fertilizer storage tanks not regulated under par. (a) 11. This subdivision does not include septic, holding and manure reception tanks, or liquefied petroleum gas tanks as specified in ch. SPS 311.

Note: Chapters SPS 311, 312 and as they existed on October 31, 1999 were repealed and a new chapter SPS 340 was created effective November 1, 1999.

2. Liquid−tight, fabricated manure or silage storage structure, in ground or at ground surface;
3. Wastewater treatment plant structure, conveyance or treatment unit; or
4. Dry fertilizer or pesticide storage building or area when more than 100 pounds of either or both materials are stored;
5. Well, drillhole or water system used for the underground placement of any waste, surface or subsurface water or any substance as defined in s. 160.01 (8), Stats.;
6. Stormwater infiltration basin;
7. Uncovered storage of silage on the ground surface;
8. Water−tight silage storage trench or pit; or
9. Lift station.

(e) Two hundred feet between a school well and a soil absorption unit receiving less than 8,000 gallons per day, existing or abandoned.

(ee) One hundred fifty feet between a well or reservoir and a temporary manure stack.

(f) Two hundred fifty feet between a well or reservoir and a:

1. Manure stack.
2. Earthen or excavated manure storage structure.

Note: Variances from the separating distances may be granted as specified in s. NR 812.43 for earthen storage and manure stacks constructed and maintained to the specifications of Soil Conservation Standards No. 425 or 312, respectively.

3. Soil absorption unit receiving 8,000 or more gallons per day, existing, abandoned, or alternate.

4. Sludge landspreading or drying area.
5. An earthen silage storage trench or pit.
6. Liquid waste disposal system including, but not limited to a treatment pond or lagoon, ridge and furrow system and spray irrigation system.

Note: Variance from this separating distance may be granted for treatment ponds or lagoons constructed and maintained to an approval granted under ch. NR 213.

7. Salvage yard.
8. A salt or deicing material storage area including the building structure and the surrounding area where the material is transferred to vehicles. This subdivision does not include bagged deicing material.
9. Solid waste processing facility.
10. Solid waste transfer facility.
11. The boundaries of a landspreading facility for spreading of petroleum−contaminated soil regulated under ch. NR 718 while that facility is in operation.

(g) Twelve hundred feet between a well or reservoir and:

1. The nearest edge of the limits of filling of an existing, proposed or abandoned landfill, measured to the nearest fill area of abandoned landfills, if known. Otherwise measured to the nearest property line where the landfill is located. The department may require, as part of a variance request, a land survey map, a scaled diagram of the landfill and the well location, or another accurate measurement method to determine and demonstrate the distance between the landfill and the well;
2. The nearest edge of a coal storage area in excess of 500 tons; or
3. A hazardous waste treatment facility regulated by the department.

TABLE A

MINIMUM SEPARATION DISTANCE REQUIREMENTS BETWEEN POTABLE OR NONPOTABLE WELLS, RESERVOIRS, SPRINGS AND POSSIBLE SOURCES OF CONTAMINATION

New installations shall meet the separation requirements in the far−right column. Existing installations shall meet the separation requirements in effect at the time of construction, those in effect at the time of installation of the possible source of contamination, if later, or to the requirements adopted on October 1, 1994.

Source	Prior to@ Oct. 1975	Oct. 1975 to Oct. 1981	Oct. 1981 to Jan. 1991	Feb. 1991 to Oct. 1994	After Oct. 1994
Absorption Unit (field), soil	50′	50′	50′	50′	50′
Air shaft−heating/air conditioning (Vertical, Below grade)	None	None	None	None	25′
Animal Barn Pen with Concrete	None**	25′	25′	25′	25′
Floor	(25/20)**				
Animal Shelter (not including small	None**	50′	50′	50′	50′
pet shelter housing 3 or fewer	(50/25)**				
adult pets)					
Animal Yard—Includes Calf Hutch (but not residential lot dog kennel enclosing 3 or fewer adult pets)	None**	50′	50′	50′	50′
Barn Gutter—Liquid−Tight	None**	25′	25′	25′	25′
	(25/18)**				
Building Overhang (from centerline of well)	2′	2′	2′	2′	2′
Cemetery Grave Sites	None*	100′	100′	50′	50′
Cistern	10′	10′	10′	8′	8′
Coal Storage (greater than 500 tons)	None*	None*	None*	1,200′	1,200′
Composting Site (See Solid Waste Processing Facility)	None	None	None	None	250′
Discharge to ground from a Water Treatment Device	None	None	None	25′	25′
Ditch−Edge of	None	None	None	None	25′
Doghouse or kennel housing 3 or fewer adult pets on residential lot	None	None	None	50′	8′
Downspout Outlet	10′	10′	10′	8′	8′
Drain−Sewerage (having pipe conforming to ch. SPS 384) (Buried)	10′	8′	8′	8′	8′
Drain−Sewerage (not having pipe conforming to ch. SPS 384) (Buried)	10′	25′	25′	25′	25′
Drain (any material) (Buried)					
Clear Water Waste	10′	10′	10′	8′	8′
Building−Foundation	10′	10′	10′	8′	8′
Building−Foundation—Sewer Connected	15′	15′	15′	8′	8′
Drillhole used for the underground placement of any waste, surface water or any substance as defined in s. 160.01 (8), Stats.	None	None	None	None	100′
Fertilizer or Pesticide, any size Storage Tank (Buried tank or surface tank > 1,500 gal.)	None	None	None	100′	100′
Filter Strip	None	None	None	50′	50′
Fuel Oil Tank—Buried	None*	100′ (25′ Allowed for Private Res. Lots Only)	100′ (25′ Allowed for Private Res. Lots Only)	100′ (Including any associated buried piping) (25′ allowed for those serving single family residences)	100′ (Including any associated buried piping) (25′ allowed for those serving single family residences)
Fuel Oil Tank—Surface	None*	None*	None*	100′	100′
(>1,500 gallons) (including any associated buried piping)					
Fertilizer or Pesticide (Dry) Storage Area or Building (more than100 pounds)	None	None	None	None	100′
Gasoline or Other Petroleum or Liquid Product Tank — Buried (not including L.P. tanks)	None*	100′	100′	100′ (Including any associated buried piping)	100′ (Including any associated buried piping)
Gasoline or Other Petroleum or Liquid Product Tank—Surface (>1,500 gallons including any associated buried piping)	None*	None*	None*	100′	100′
Glass Lined Feed Storage Facility (Harvestor−Type Silos)	None**	25′	25′	50′	50′

Source	Prior to@ Oct. 1975	Oct. 1975 to Oct. 1981	Oct. 1981 to Jan. 1991	Feb. 1991 to Oct. 1994	After Oct. 1994
Grease Interceptor (Trap) (Buried)	25′	25′	25′	25′	25′
Hazardous Waste Treatment Facility Regulated by DNR	None*	None*	None*	1,200′	1,200′
Holding Tank (Sewage)	None	25′	25′	25′	25′
Infiltration basin, Stormwater	None	None	None	None	100′
Kennel on residential lot enclosing 3 or fewer adult pets	None	None	None	50′	8′
Kennel, other than above	None	None	None	50′	50′
Lagoon, Treatment (See liquid waste disposal system)	—	—	—	—	—
Lake Shoreline (Measured to the edge of the floodway	None*	25′	25′ (60′ For Schools and High Cap. Wells)	25′	25′
Landfills (existing, proposed or abandoned) (Distance to Nearest Fill Area of abandoned landfills if Known; Otherwise to the Property Line)	None*	400 yards	400 yards	1,200′	1,200′
Lift Station##				##	100′
Liquid Waste Disposal System	None	250′	250′−300′	250′#	250′#
Manure Hopper or Reception Tank—Liquid−Tight	None*	75′	75′−150′	50′	50′
Manure Loading Area	None	None	None	None	50′
Manure Stack	None*	100′	100′−175′	250′***	250′***
Manure Stack,—Temporary	None	100′	100′	250′	150′
Manure—Storage Structure (Earthen, Excavated or Non−liquid tight)	None*	250′	250′−300′	250′***	250′***
Manure Storage Structure (Fabricated, Liquid−Tight)	None*	100′	100′−175′	100′	100′
Manure—Storage Basin—Liquid−Tight Concrete Floor with an Acceptable Drainage Facility	None*	100′	150′−300′	Now in category of Manure Storage Structure	Now in category of Manure Storage Structure
Mound System (Measured to the toe of the mound)	50′	50′	50′	50′	50′
Nonpotable Well	None*	None*	None*	8′	8′
Pesticide or Fertilizer (Dry) Storage Area or Building (More than 100 Pounds)	None	None	None	None	100′
Pesticide or Fertilizer Storage Tank (not buried)—less than 1,500 gallons (distance only for nonpotable wells)	None	None	None	8′	8′
Pesticide or Fertilizer Storage Tank—Buried tank, any size, or surface tank >1,500 gal.)	None	None	None	100′	100′
Pet Waste Pit Disposal Unit	None*	50′	50′	50′	50′
Pits—Noncomplying	None	10′	10′ (20′ For Schools, WWTP's, and High Capacity−Including Approved Pits)	8′	8′
Plastic Silage Storage and Transfer Tube	None	None	None	8′	8′
Pond, Stormwater detention (Edge of)	None	None	None	None	25′
Pond, treatment (See liquid waste, disposal system)					
Privy	50′ (Sewage Disposal Units)	50′	50′	50′	50′
Quarry (See s. NR 812.12 (16) for well casing depth requirements for wells within 1,200 feet of a quarry.)					
Reservoir—Noncomplying	10′ (Cistern)	10′	10′	8′	8′
Ridge and Furrow System (See liquid waste disposal system)					
River or Stream Edge (Measured to the edge of the floodway)	None*	25′	25′ (60′ For Schools and High Cap. Wells)	25′	25′
Salt or Deicing Material Storage Area (Including structure and area surrounding where material is transferred to vehicles)	None*	None*	None*	250′	250′
Salvage Yard	None*	None*	None*	250′	250′
Septic Tank	25′	25′	25′	25′	25′
Sewer (ch. SPS 384 Materials) (Buried)					
—Manure/Gravity	8′	8′	8′	25′	25′
—Manure/Pressurized	8′	8′	25′	25′	25′
—Sanitary or Storm Building/Gravity	8′	8′	8′	8′	8′

Source	Prior to@ Oct. 1975	Oct. 1975 to Oct. 1981	Oct. 1981 to Jan. 1991	Feb. 1991 to Oct. 1994	After Oct. 1994
—Sanitary Building/Pressurized	8′	25′	25′	25′	25′
—Sanitary Collector					
(Serving ≤ 4 living units or ≤ 6″ diameter)	8′	50′	50′‘	50′‘	25′
—Sanitary Collector					
(Serving > 4 living units or > 6″ diameter)	8′	50′	50′‘	50′‘	50′‘
—Influent	50′	50′	50′	50′	50′
—Storm Collector					
(≤ 6″ diameter)	8′	50′	50′	50′	25′
—Storm Collector					
(> 6″ diameter)	8′	50′	50′	50′	50′‘
Sewer (not ch. ILHR 84 Materials) (Buried)					
—Manure/Gravity	25′	25′	25′	25′	25′
—Manure/Pressurized	25′	50′	50′	50′	50′
—Sanitary Building/gravity	25′	25′	25′	25′	25′
—Sanitary Building/Pressurized	25′	25′	25′	25′	50′
—Storm Building	25′	25′	25′	25′	8′
—Sanitary Collector	50′	50′	50′	50′	50′
—Storm Collector	25′	50′	50′	50′	50′
—Influent	50′	50′	50′	50′	50′
Shoreline—Lake, River or Stream (Measured as indicated in sub. (4) (b) 7.)	None*	25′	25′ (60′ For Schools and High Capacity Wells)	25′	25′
Silage Storage, Earthen Trench or Pit	None*	100′	100′– 175′	250′	250′
Silage Storage Structure (Fabricated liquid–tight) (In–ground or surface)	None	None	None	None	100′
Silage Storage—Surface, Uncovered	None	None	None	None	100′
Silage Storage Tube (Plastic)	None	None	None	8′	8′
Silo With Pit	None**	50′	50′	50′	50′
Silo Without Pit But With Concrete Floor and Drain	None**	25′	25′	50′	50′
Single application landspreading of petroleum–contaminated soil					250′
Sludge Landspreading or Drying	None*	200′	200′	250′	250′
Soil Absorption Unit (< 8,000 gal/day, includes alternate unit)	50′	50′	50′ (200′ for schools as of 1978)	50′ (200′ for schools)	50′ (200′ for schools)
Soil Absorption Unit (′≥8,000 gal/day, existing or abandoned)	50′	50′	50′ (200′ for schools as of 1978)	250′	250′
Solid Waste Processing Facility (Including composting facilities)	None	None	None	None	250′
Solid Waste Site (Distance to Nearest Fill Area or Proposed Fill Area If Known; Otherwise to the Property Line)	None	400 yards	400 yards	1,200′	1,200′
Solid Waste Transfer Facility	None	None	None	None	250′
Spray Irrigation Waste Disposal Site (See liquid waste disposal system)					
Stormwater detention pond or basin	None	None	None	None	25′
Stormwater infiltration basin	None	None	None	None	100′
Sump—Watertight clear water	None	None	None	8′	8′
Sump—Wastewater (Watertight)	None*	8′	8′	25′	25′
(form. cast–iron equiv.)					
Sump—Wastewater (not watertight or equiv. to cast iron)	None*	25′	25′	25′	25′
Swimming Pool (from edge of water)	None*	25′ (Below ground)	25′ (Below ground)	25′ (Below ground)	8′ (above or below ground)
Temporary Manure Stack	None	100′	100′	250′	150′
Wastewater Treatment Plant Effluent Pipe	None	None	None	50′	50′
Wastewater Treatment Plant Structure, Conveyance or Treatment Unit	None*	None	150′	100′	100′

Source	Prior to@ Oct. 1975	Oct. 1975 to Oct. 1981	Oct. 1981 to Jan. 1991	Feb. 1991 to Oct. 1994	After Oct. 1994
Well approved for underground placement of any waste, surface water or any substance as defined in s. 160.01, Stats.	None	None	None	None	100′
Yard Hydrant	None	10′	10′	8′	8′

°The minimum separating distance between a well and a collector sewer serving more than 4 living units or larger than 6 inch diameter is 50 feet regardless of whether the well or the sewer was installed first. However for such sewers less than 16−inch diameter, wells may be located or sewers installed such that a well is less than 50 feet, but at least 25 feet from gravity collector sewers smaller than 16 inches in diameter or from force main collector sewers 4 inches or smaller in diameter provided that within a 50−foot radius of the well the installed sewer pipe meets the allowable leakage requirements of AWWA C600 and the requirements for water−main equivalent type pipe as follows:

—For sewers ≥ 4″ diameter, but < 16″ diameter:

°PVC pipe 4″ diameter, but ≤12″ diameter shall meet AWWA C900 with elastomeric joints having a standard dimension ratio of 18 or less;

°PVC pipe > 12″ diameter, but < 16″ diameter shall meet AWWA C905 with elastomeric joints having a standard dimension ratio of 18 or less.

°Ductile iron pipe shall meet AWWA C115 or AWWA C151 having a thickness class 50 or more.

—For sewers < 3″ diameter, the pipe shall be any rigid pipe in the ch. SPS 384 "Table for Pipe and Tubing for Water Services and Private Water Mains," including approved ABS, brass, cast iron, CPVC, copper, (not including type M copper), ductile iron, galvanized steel, polybutylene (PB), polyethylene (PE), PVC, or stainless steel pipe.

*"None" Although there were no minimum separation distances required by the code between these possible sources of contamination and a well or reservoir prior to 1975, and in some cases, prior to 1981, it is strongly recommended that the present standard minimum separation distance requirements be met whenever possible.

**Distances were developed under the Public Health Service Grade A Milk Ordinance and have been used by the department of agriculture, trade and consumer protection field inspectors.

***Variances from these separating distances may be granted for earthen manure storage and temporary manure stacks meeting specifications of Soil Conservation Service Standards No. 425 and 312, respectively.

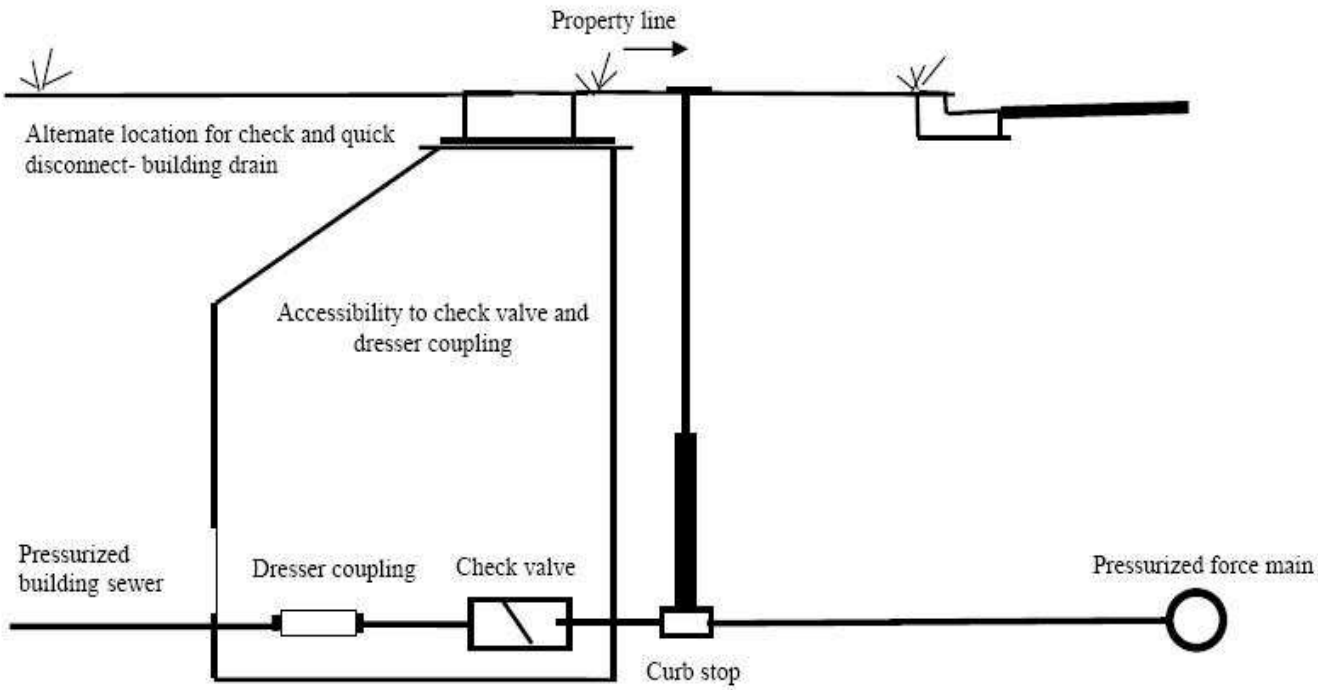
#Variances from this minimum separating distance may be granted for treatment ponds or for storage or treatment lagoons constructed and maintained to the requirements of an approval granted under ch. NR 213.

##After Feb. 1, 1991 and prior to October 1, 1994 the minimum separating distance between a well or reservoir and a lift station is based on the presence of a sewer force main at the lift station.

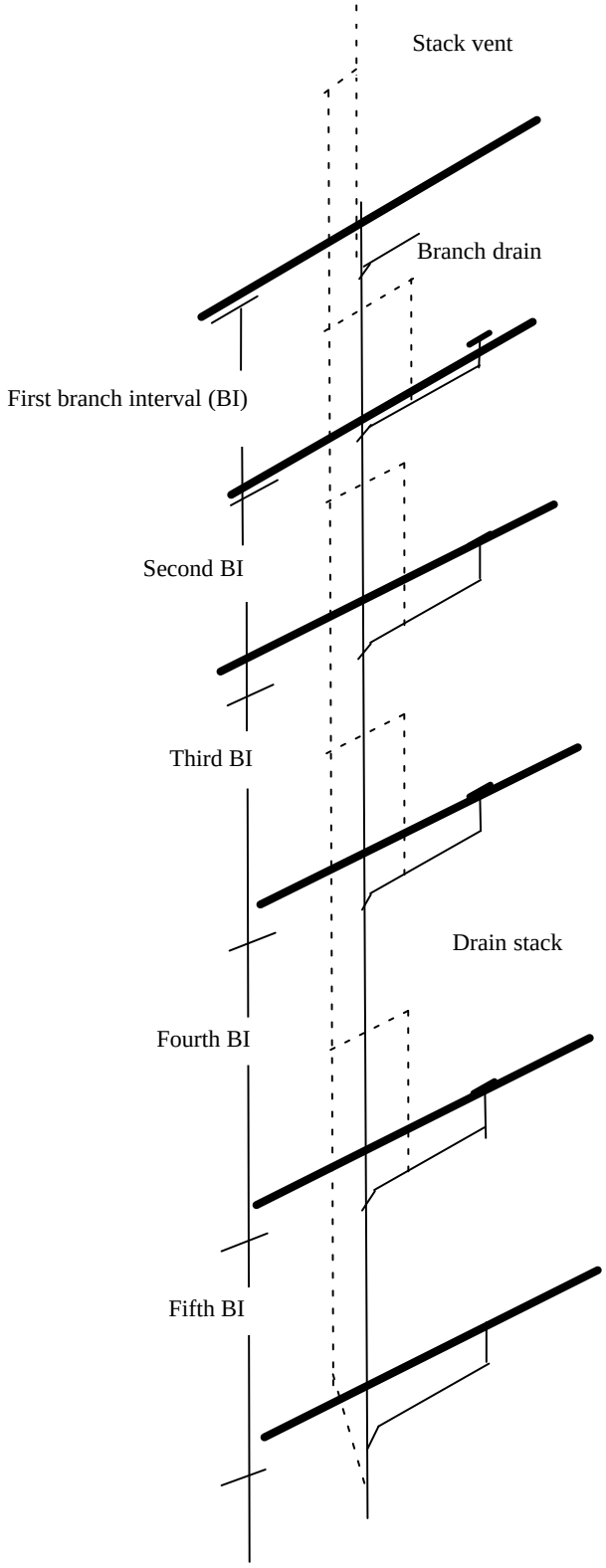
@ There are several code revisions prior to 1975. The dates of these revisions and the minimum separating distances were as follows:

Source	April 24, 1936	March 1939	July 1951	April 10, 1953	May 1, 1971
Building Overhang	2′	2′	2′	2′	2′
Cistern	None	None	10′	10′	10′
Downspout	None	None	10′	10′	10′
Drain					
—Building Foundation	10′	10′	10′	10′	10′
—Sewer Connected Building Foundation	10′	10′	15′	15′	15′
—Clear Water	None	None	10′	10′	10′
—Cast Iron (With Lead Joints)	10′	10′	10′	10′	10′
Grease Trap (Watertight)	None	None	25′	25′	25′
Septic Tank	None	None	25′	25′	25′
Sewage Disposal Unit (Absorption Field)	None	None	50′	50′	50′
Sewer					
—Cast Iron (With Lead Joints)	10′	10′	8′	8′	8′
—Not Cast Iron or equivalent	25′	25′	25′	25′	25′

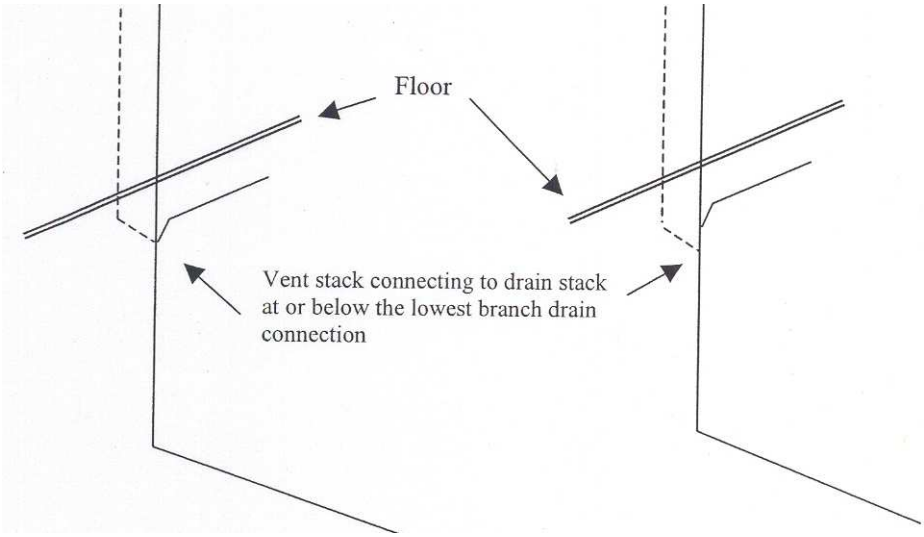
A−382.30 (11) (f) CONNECTION TO PRESSURIZED PUBLIC SEWER.



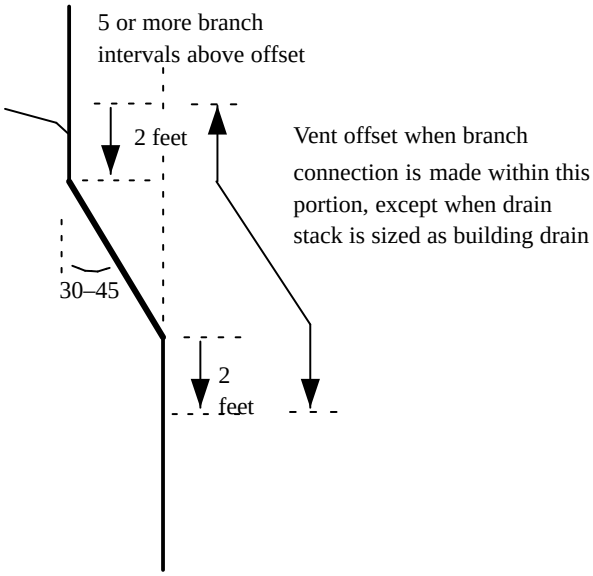
A−382.31 (4)−1. WHERE A VENT STACK AND STACK VENT ARE REQUIRED.



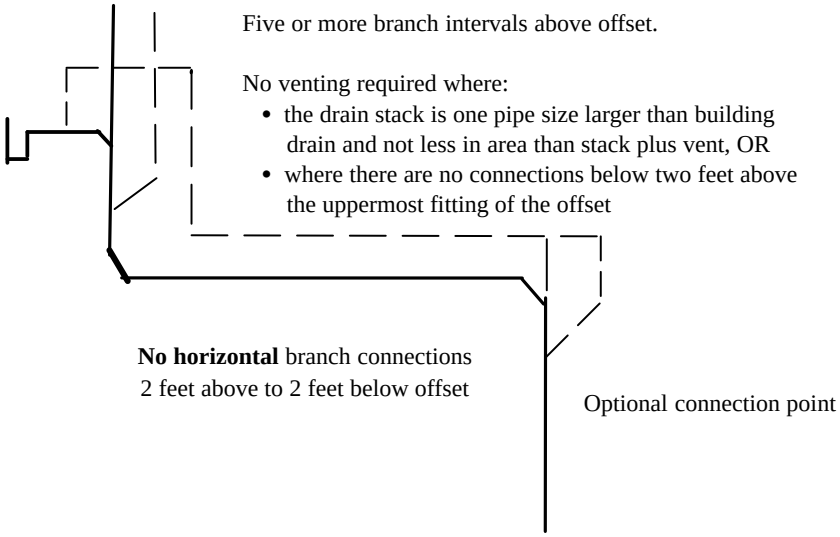
A−382.31 (4)−2. INSTALLATION OF VENT STACK AND STACK VENT.



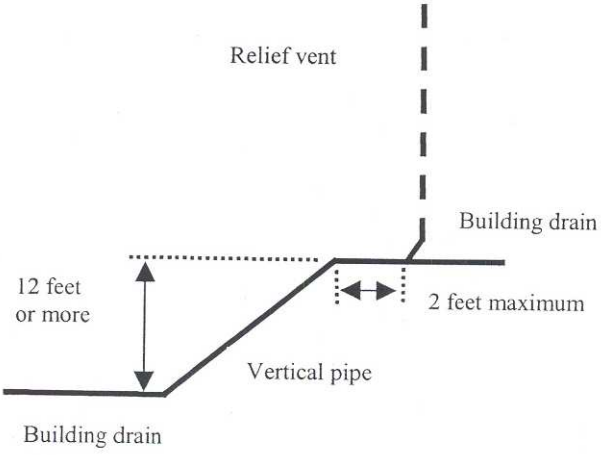
A−382.31 (5) (a) VENTING OFFSETS OF 30 TO 45 DEGREES.

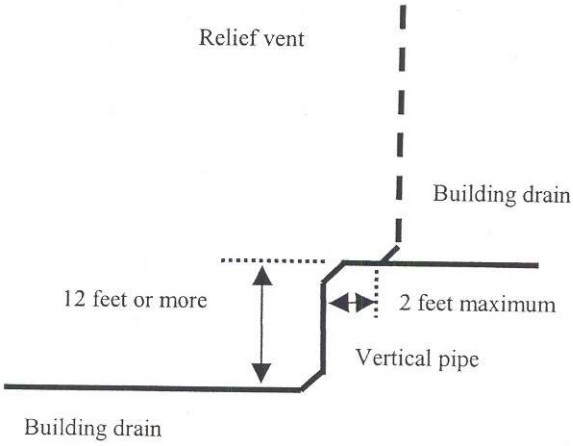


A−382.31 (5) (b) VENTS FOR OFFSETS OF MORE THAN 45 DEGREES.

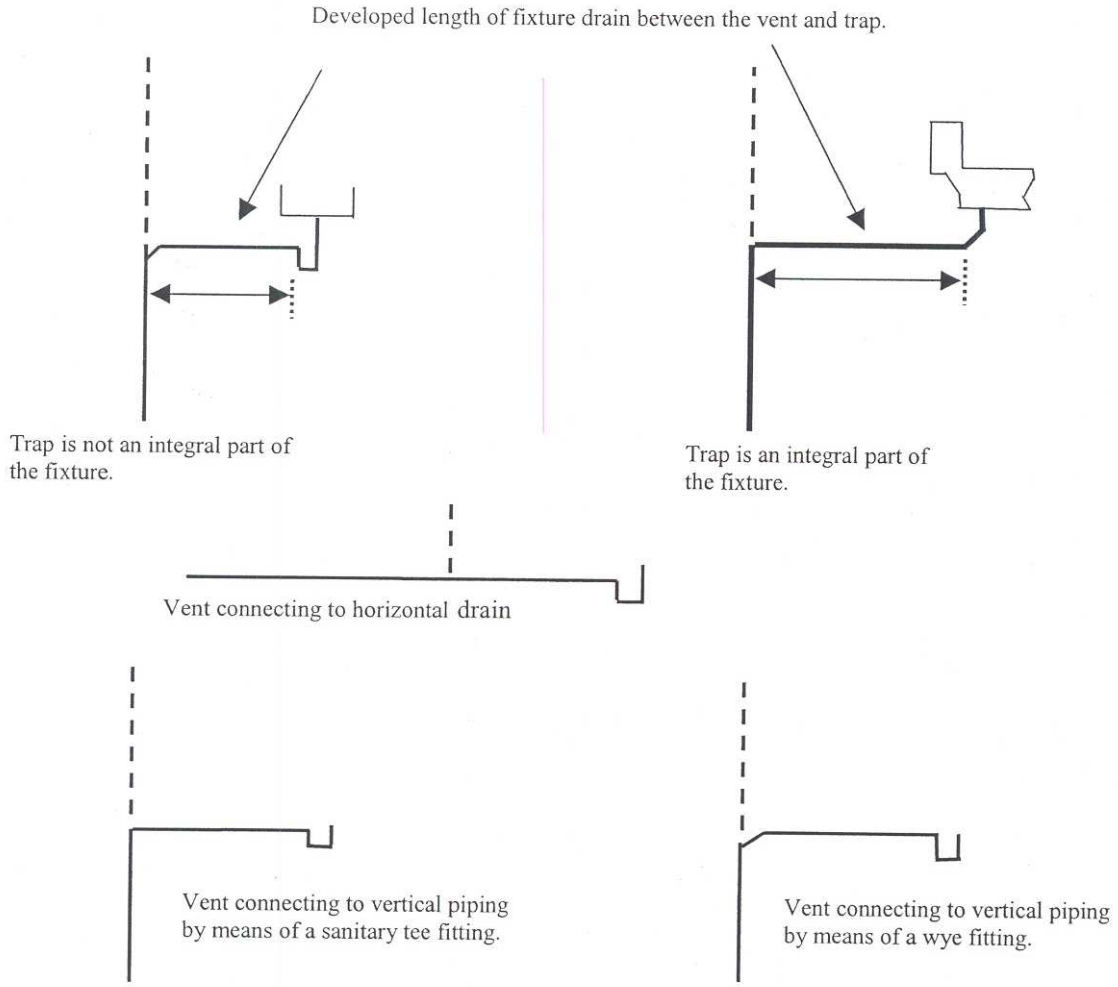


A−382.31 (7) RELIEF VENTS FOR BUILDING DRAINS.

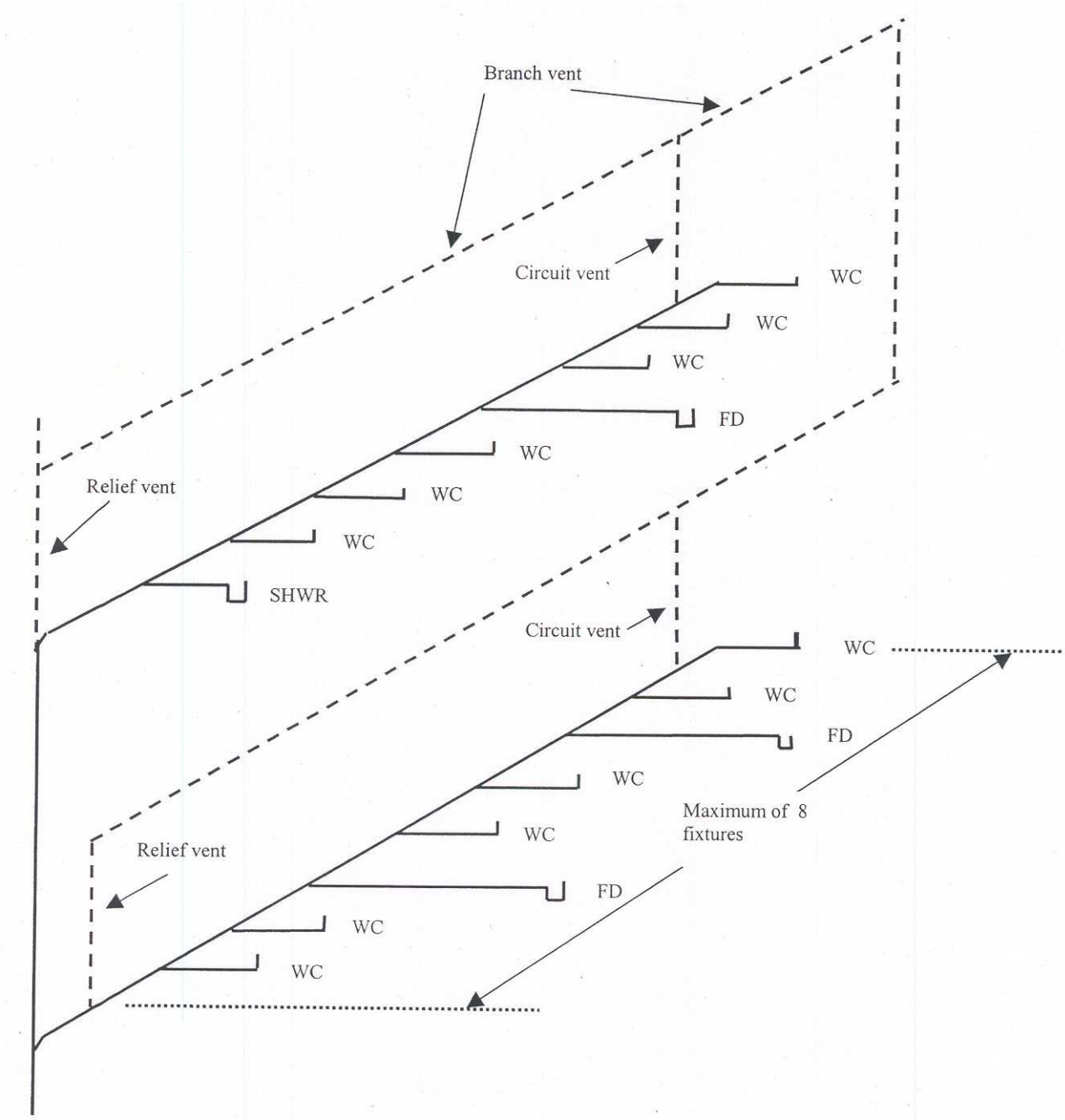




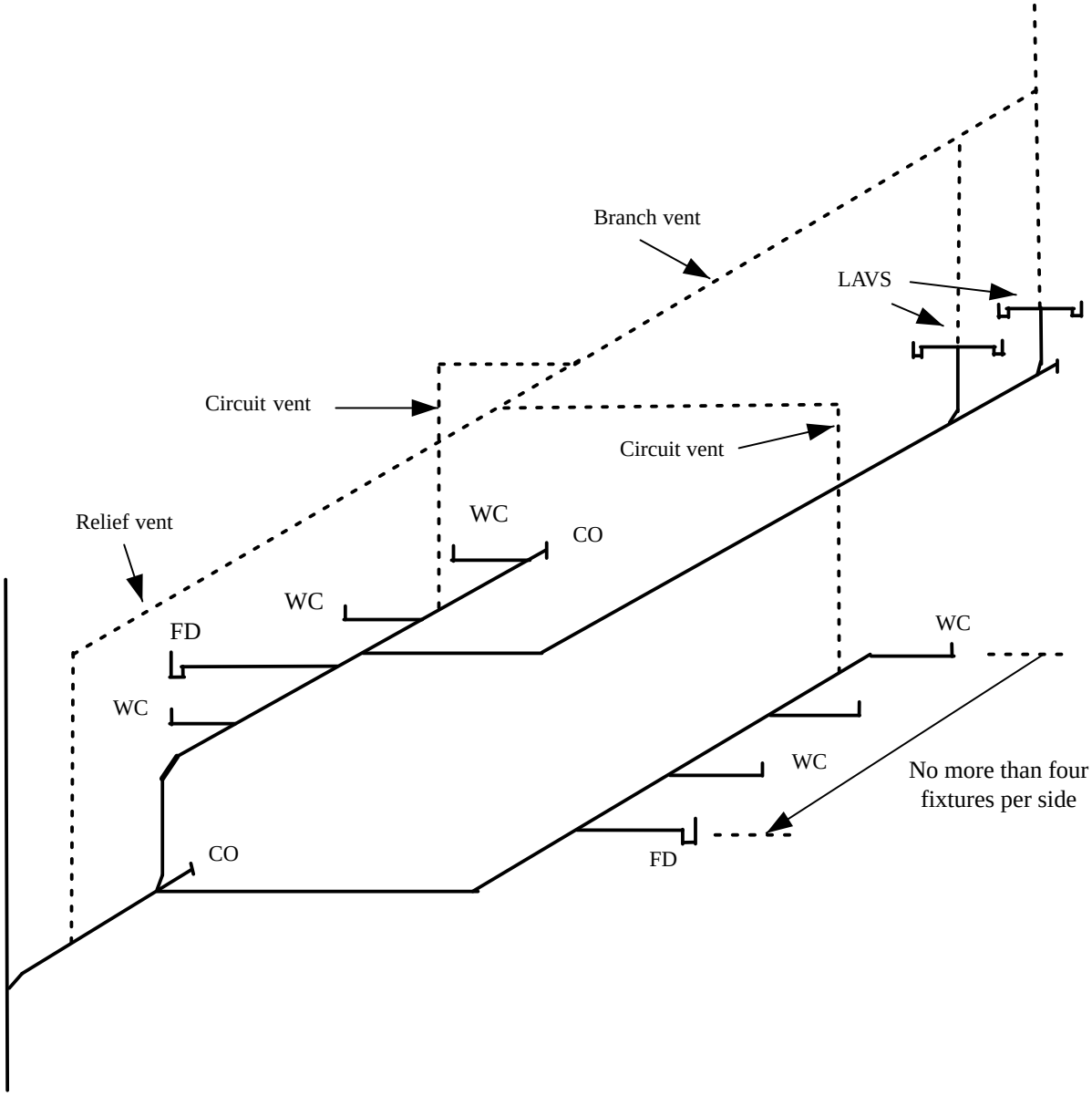
A−382.31 (9) FIXTURE VENTS.



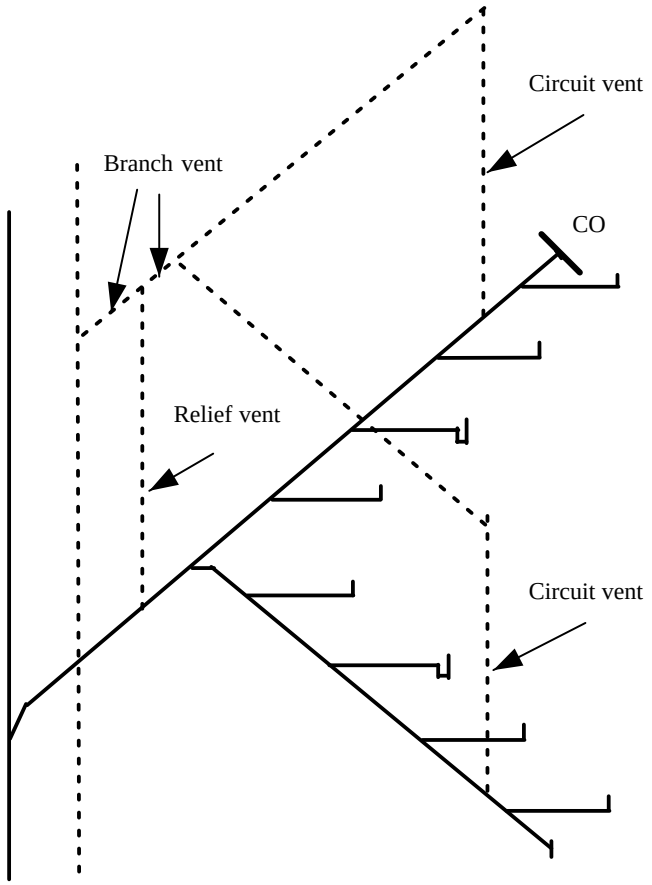
A−382.31 (10)−1. CIRCUIT VENTING.



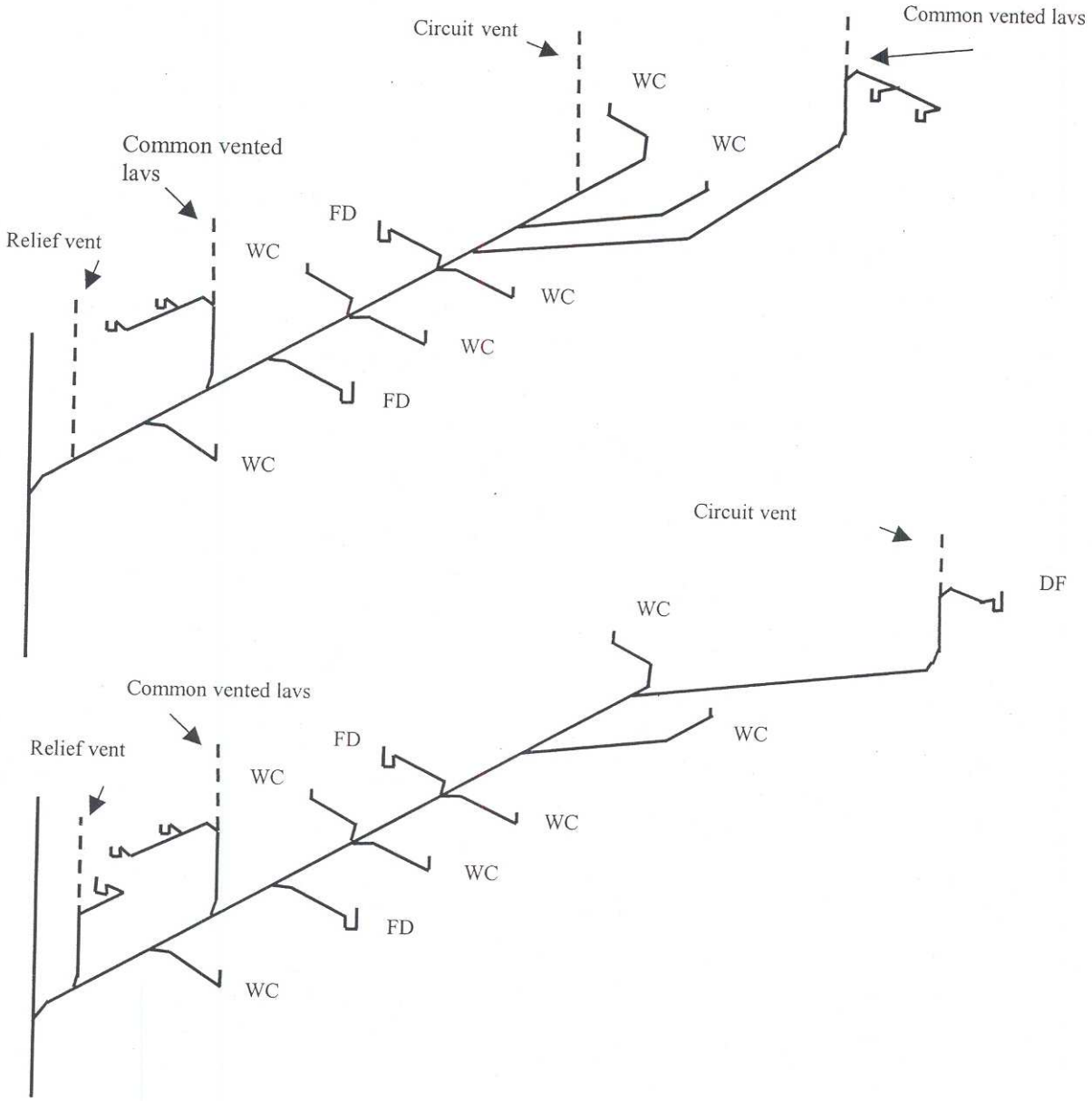
A−382.31 (10)−2. CIRCUIT VENTING.



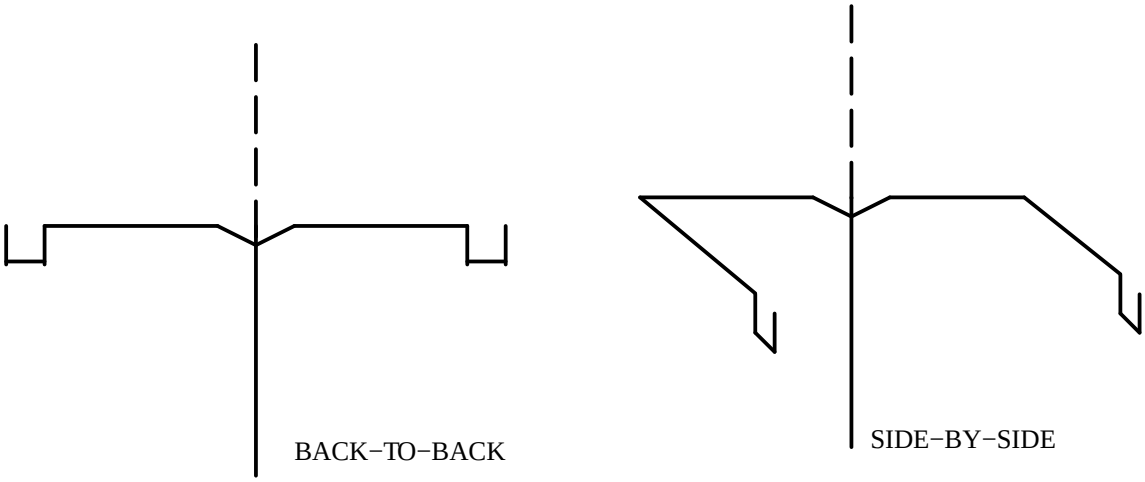
A−382.31 (10)−3. CIRCUIT VENTING.



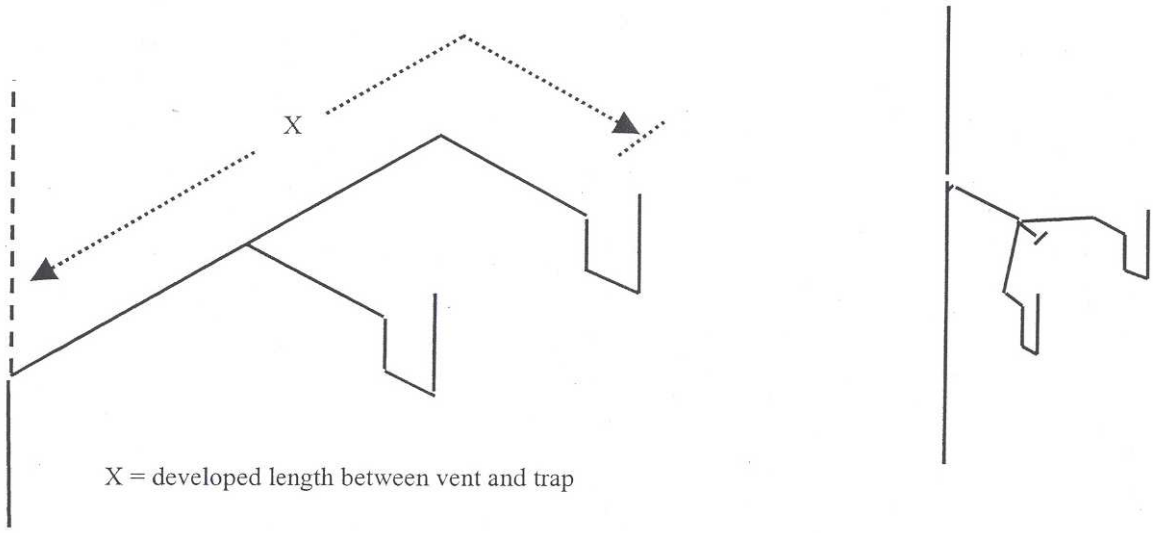
A−382.31 (10)−4. CIRCUIT VENTING.



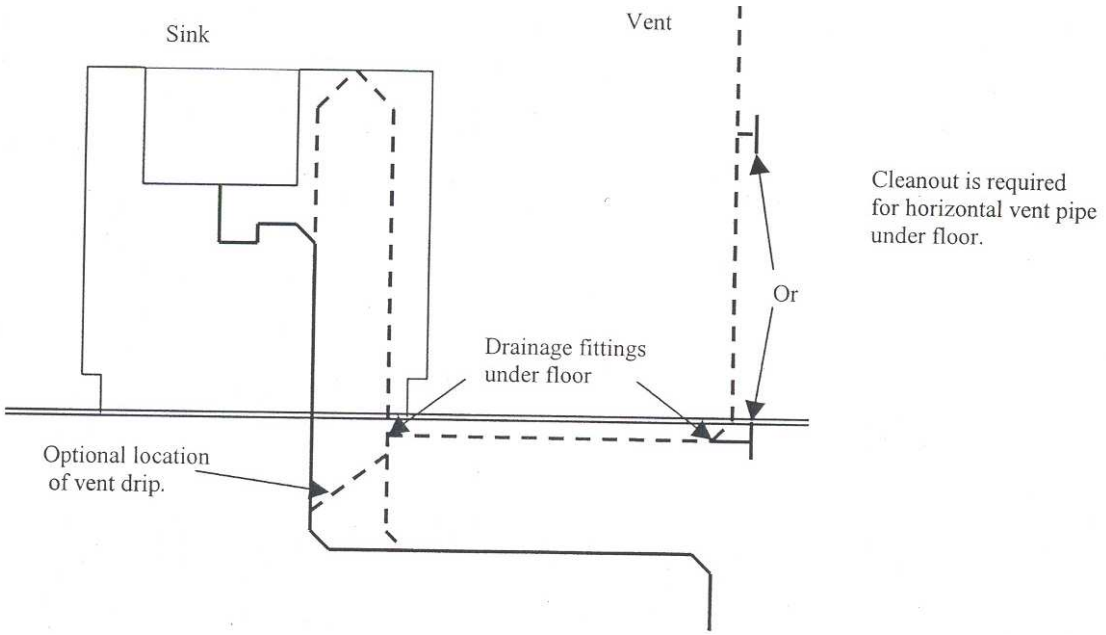
A−382.31 (11) (a) COMMON VENTS, VERTICAL, SERVING ANY TWO FIXTURES.



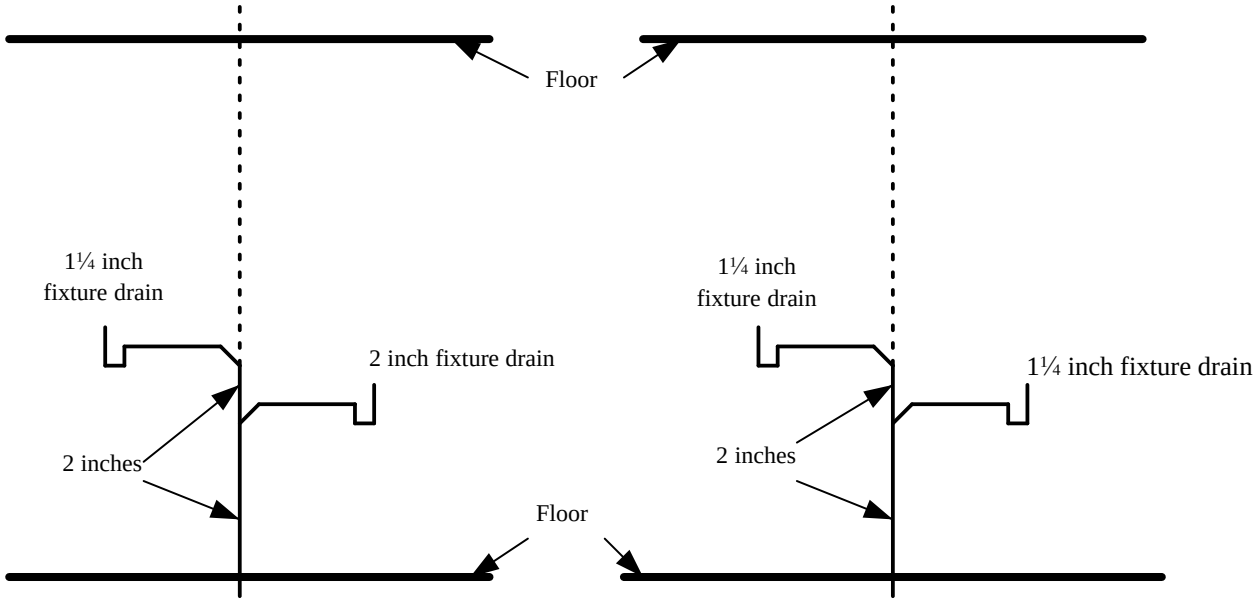
A−382.31 (11) (b) COMMON VENTS, HORIZONTAL DRAINS.



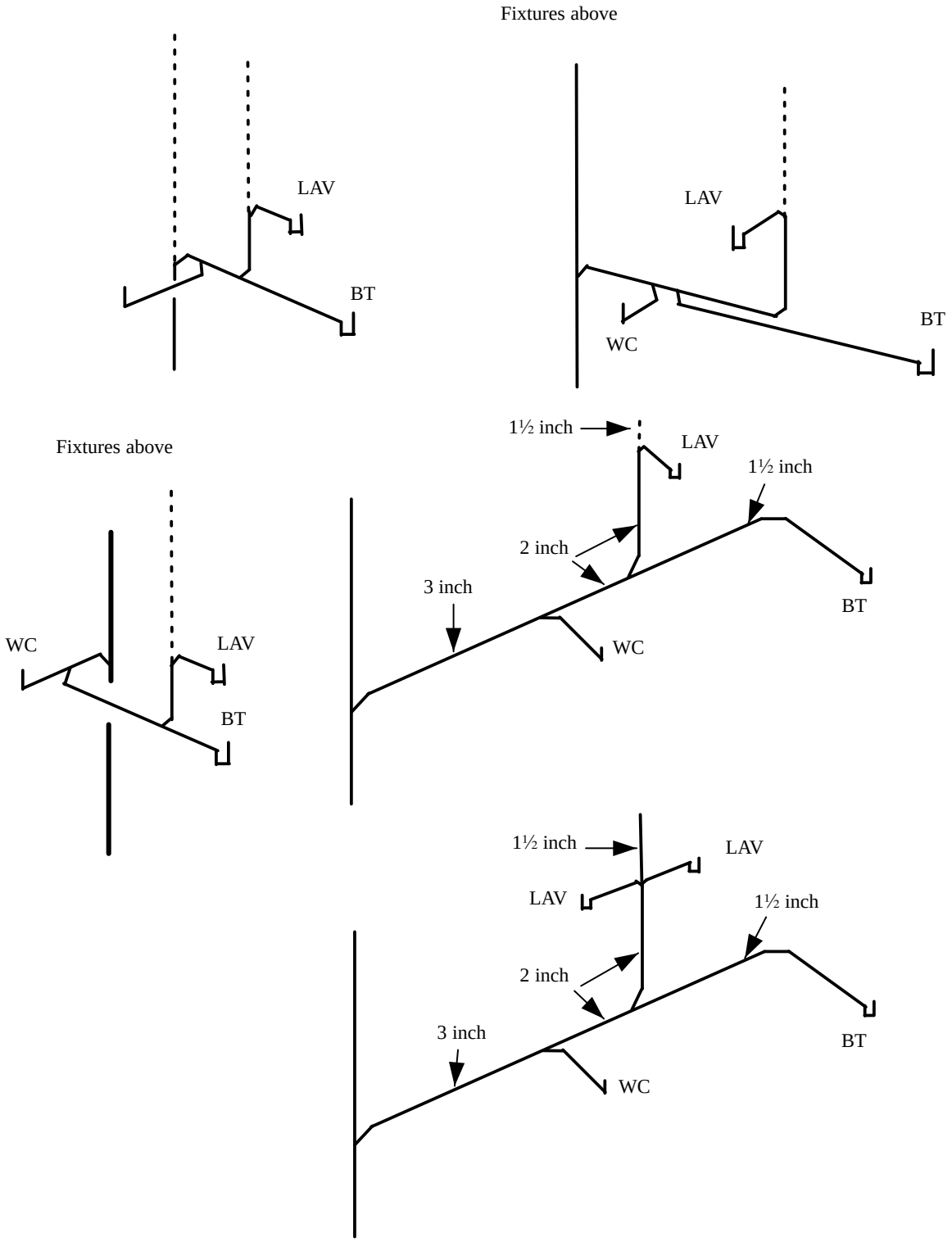
A−382.31 (12) RETURN VENTS.



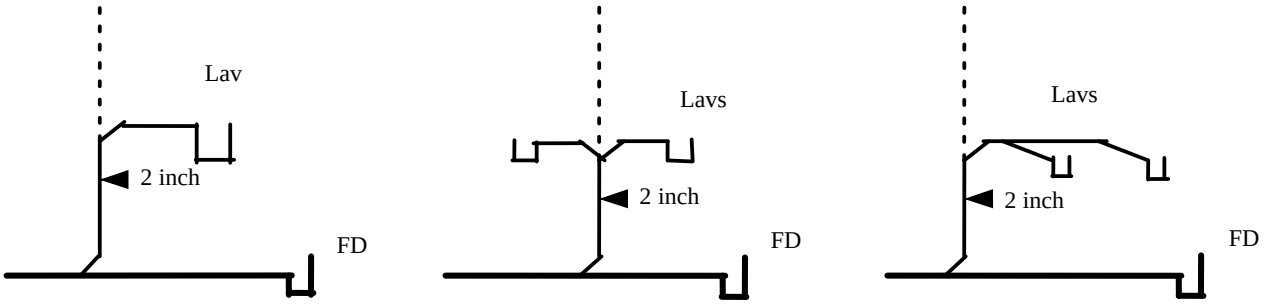
A−382.31 (13) (a) VERTICAL WET VENTS.



A−382.31 (13)−1. HORIZONTAL WET VENTS.

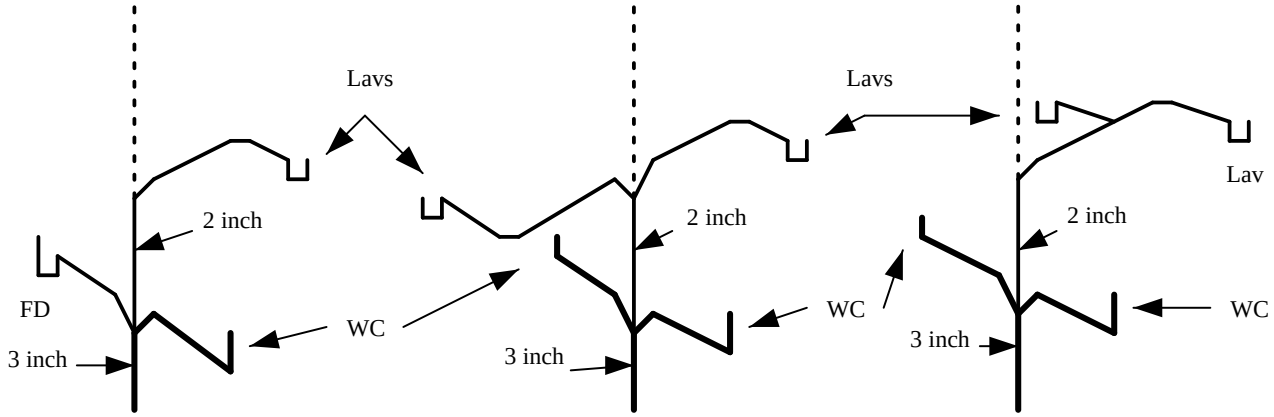


A−382.31 (13)−2. WET VENTING – FLOOR OUTLET FIXTURES.



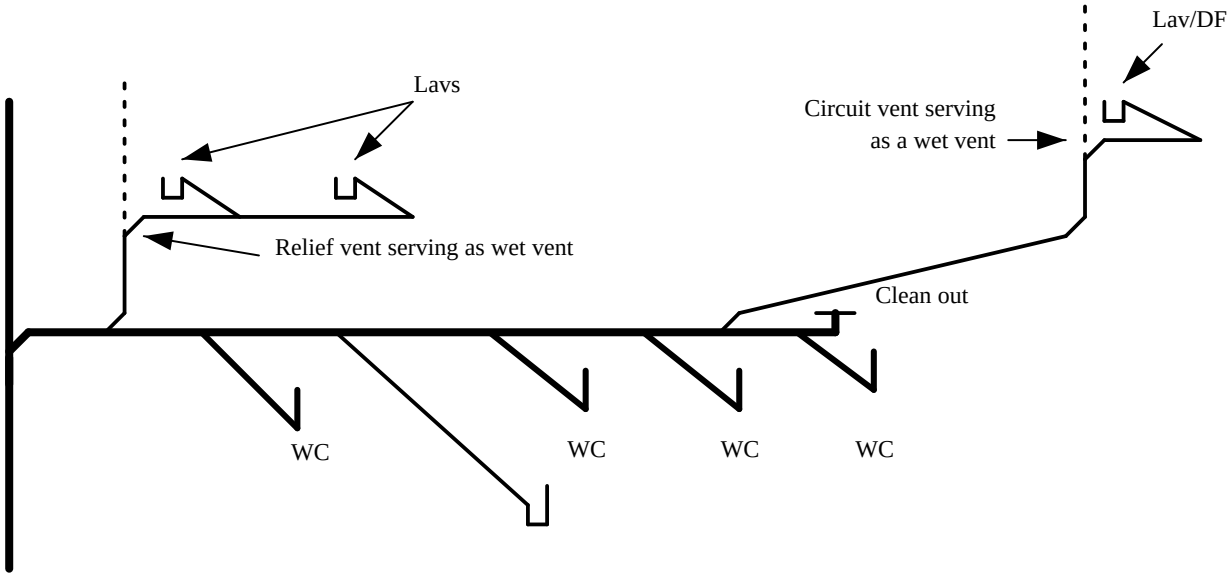
Individual vent serving as a wet vent

Common vents serving as a wet vent

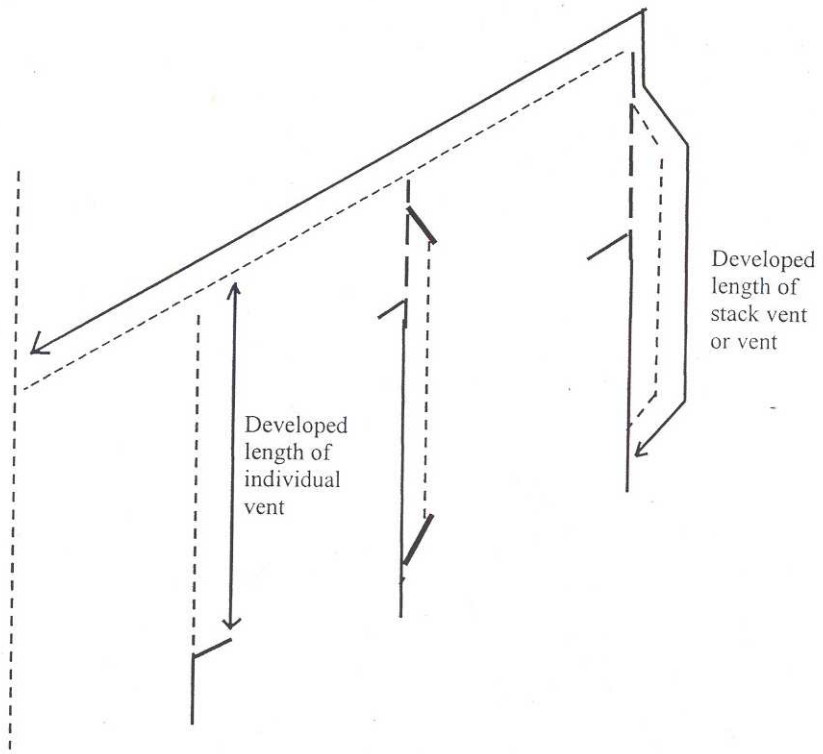


Individual vent serving as a wet vent

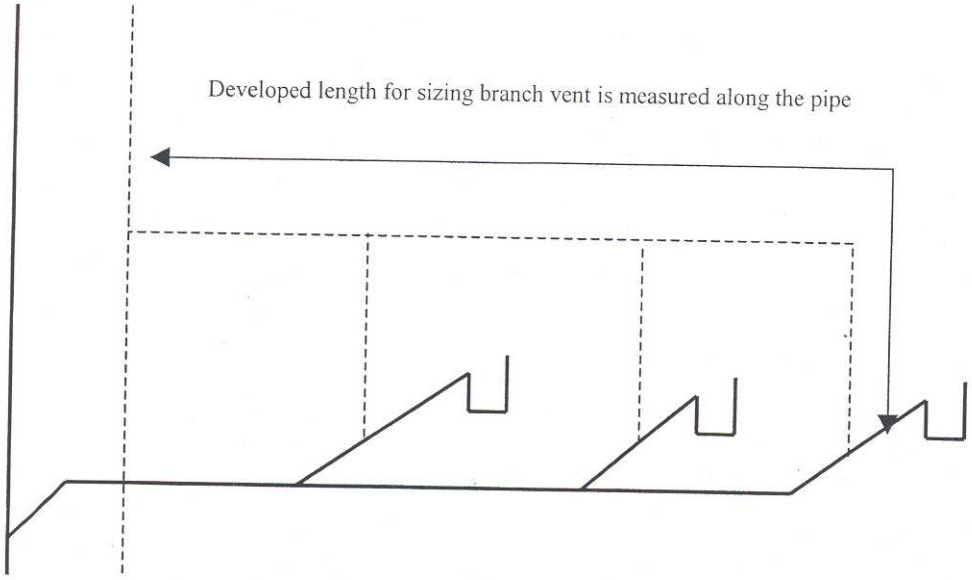
Common vents serving as a wet vent



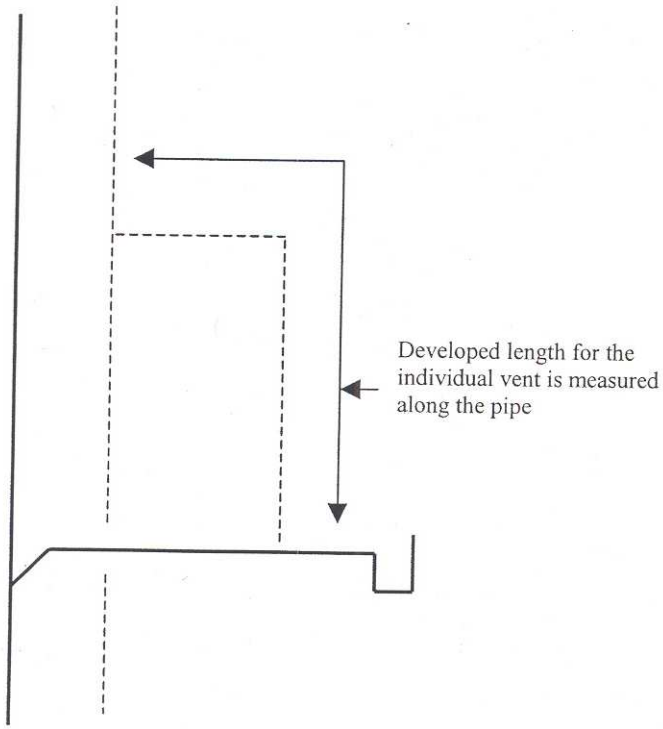
A−382.31 (14) (a) and (b) SIZING VENT STACKS AND STACK VENTS

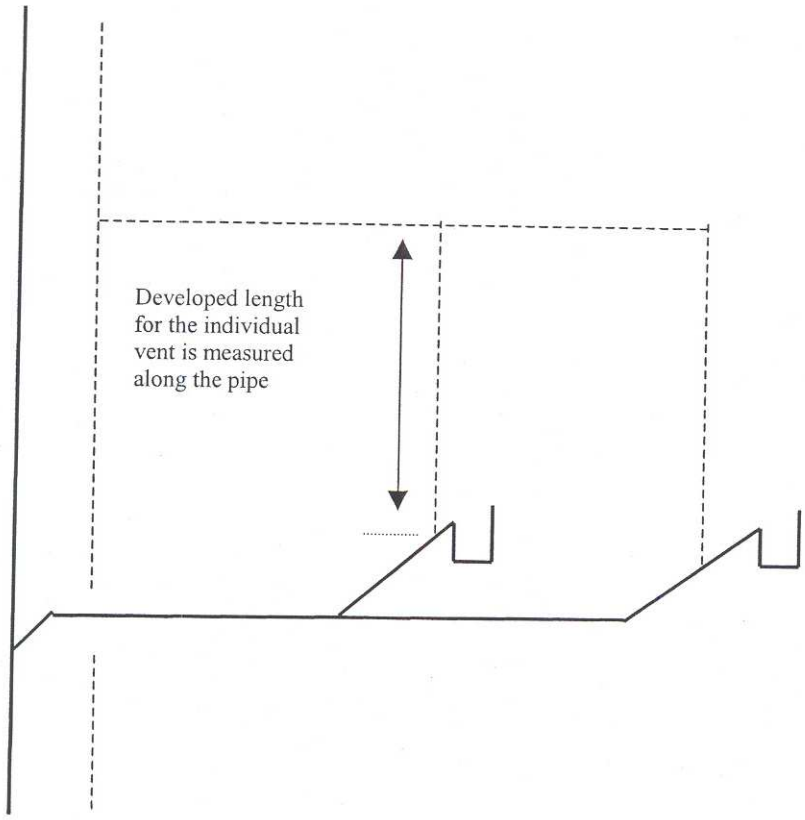


A−382.31 (14) (c) SIZING BRANCH VENTS SERVING A WET VENT.

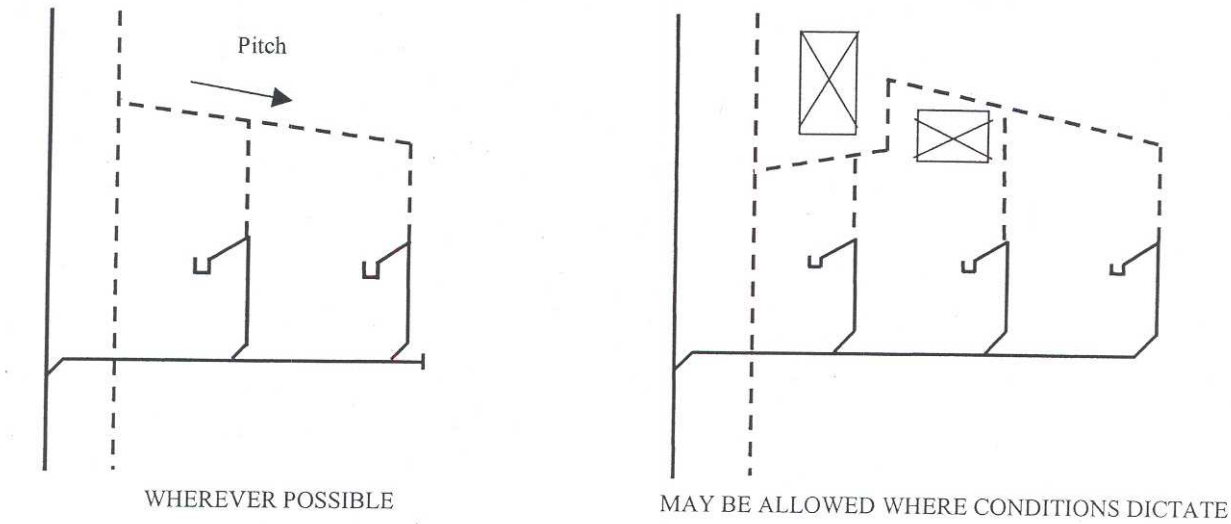


A−382.31 (14) (d) SIZING INDIVIDUAL VENTS.

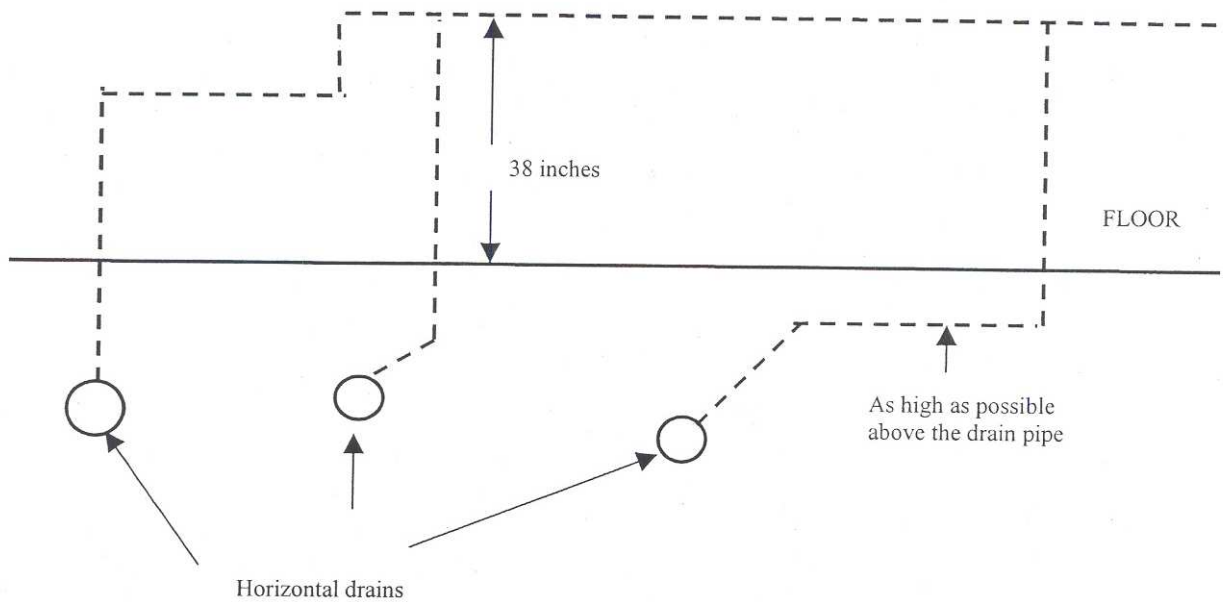




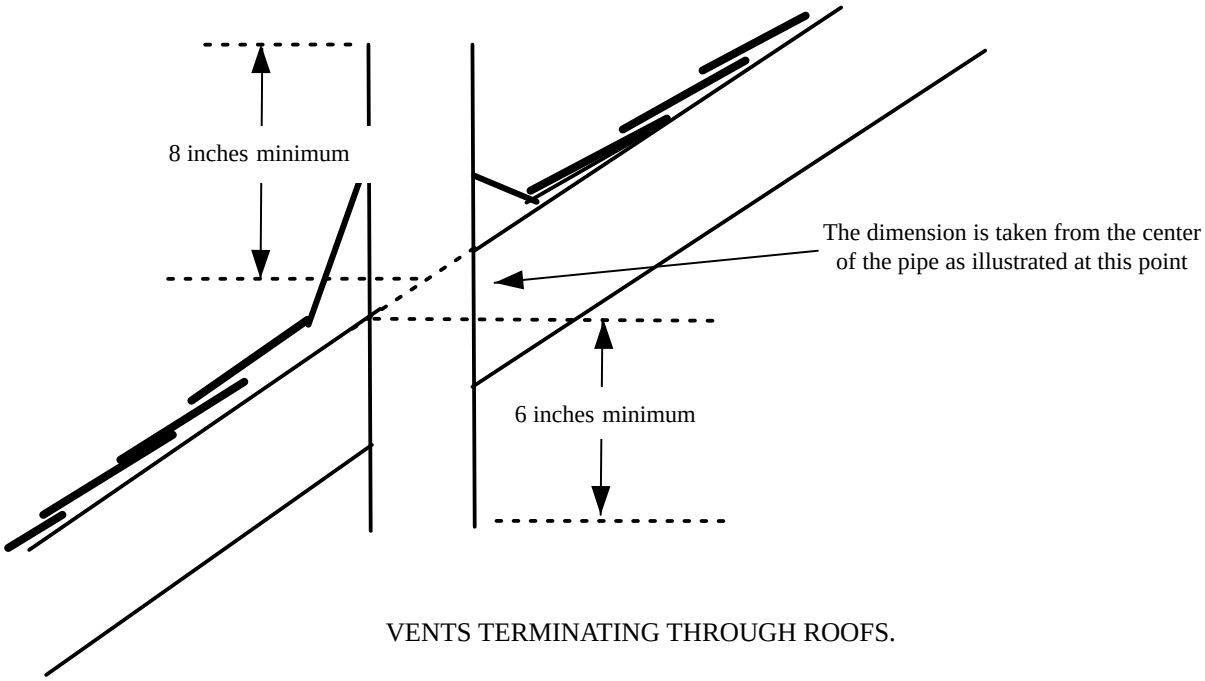
A−382.31 (15) (a) VENT GRADES AND CONNECTIONS.



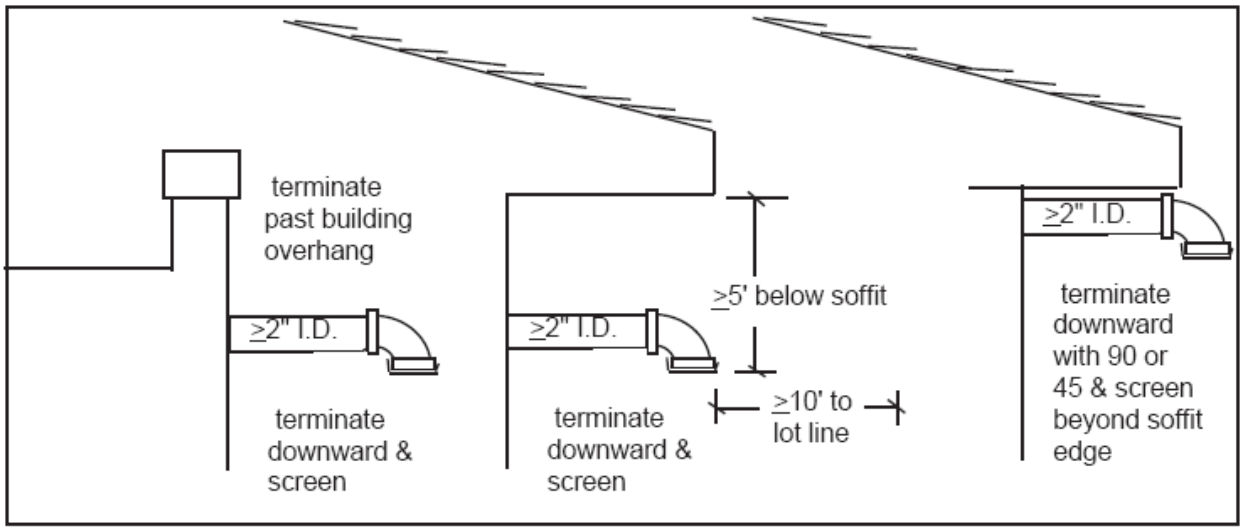
A−382.31 (15) (b) VENT GRADES AND CONNECTIONS.



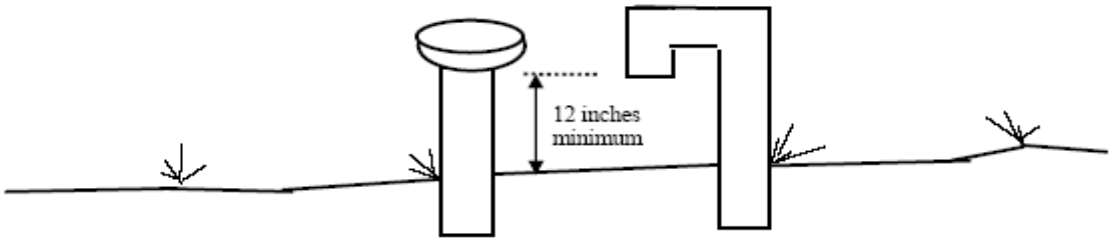
A−382.31 (16) VENT TERMINALS.



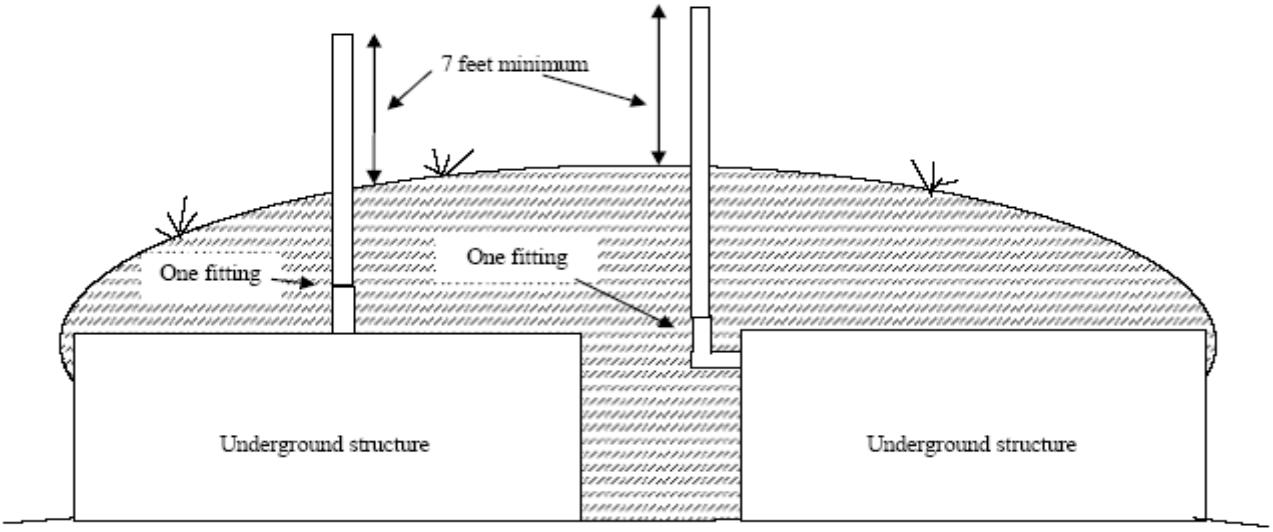
VENTS TERMINATING THROUGH ROOFS.



VENTS TERMINATING THROUGH WALLS

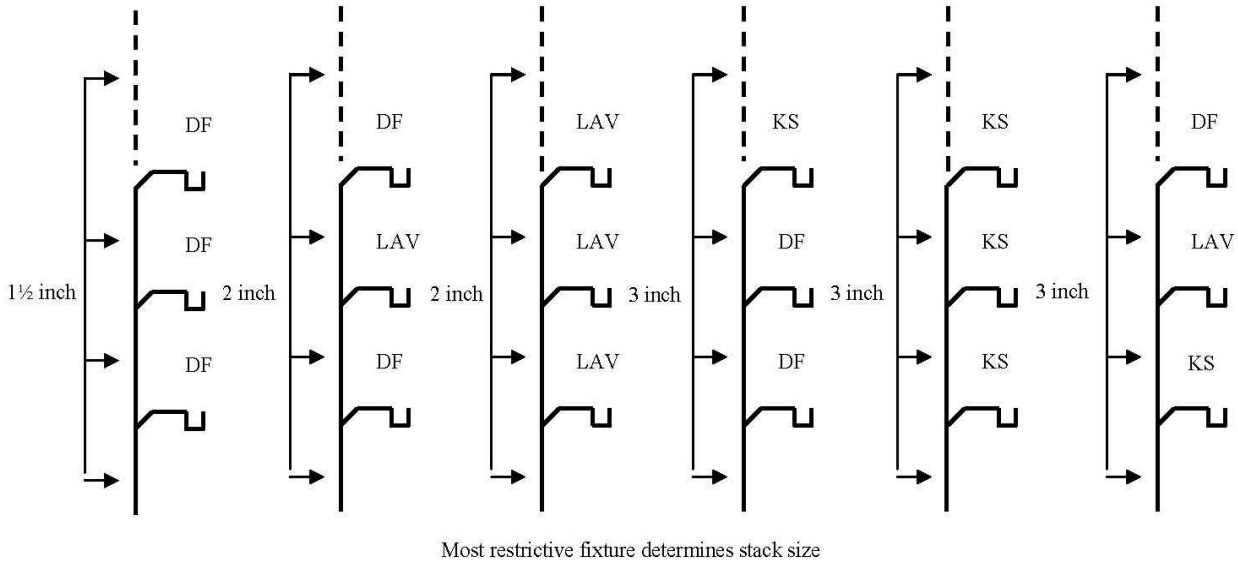


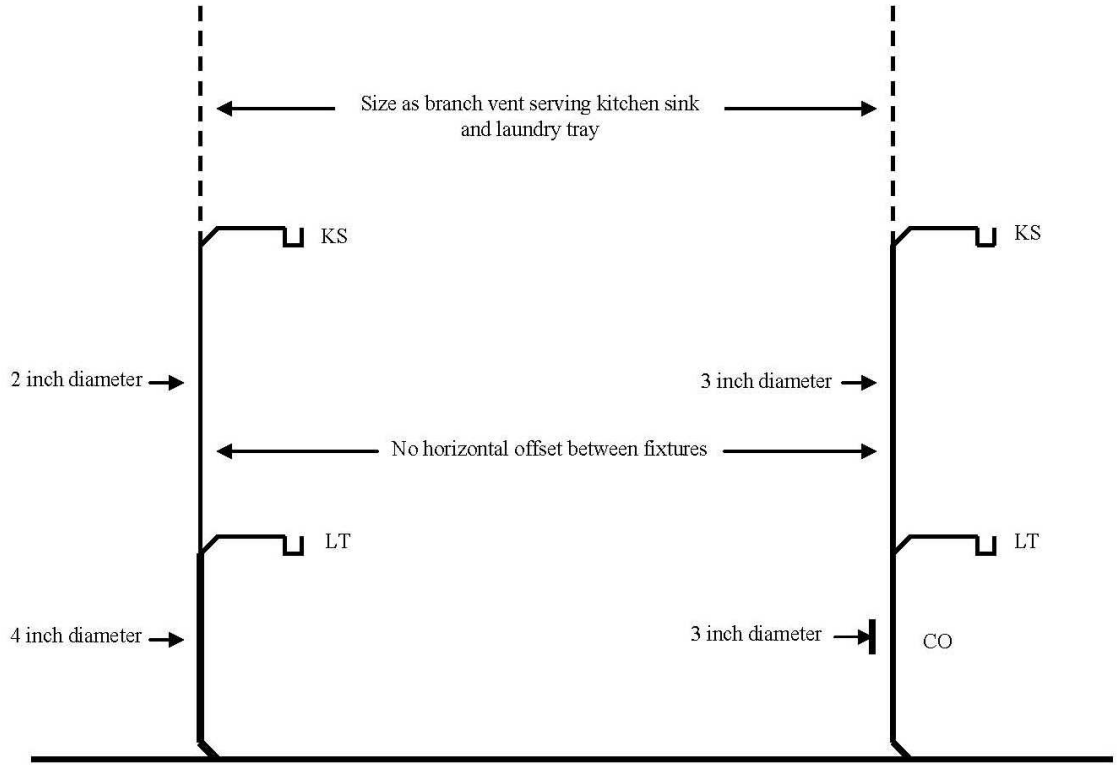
VENTS TERMINATING AT GRADE



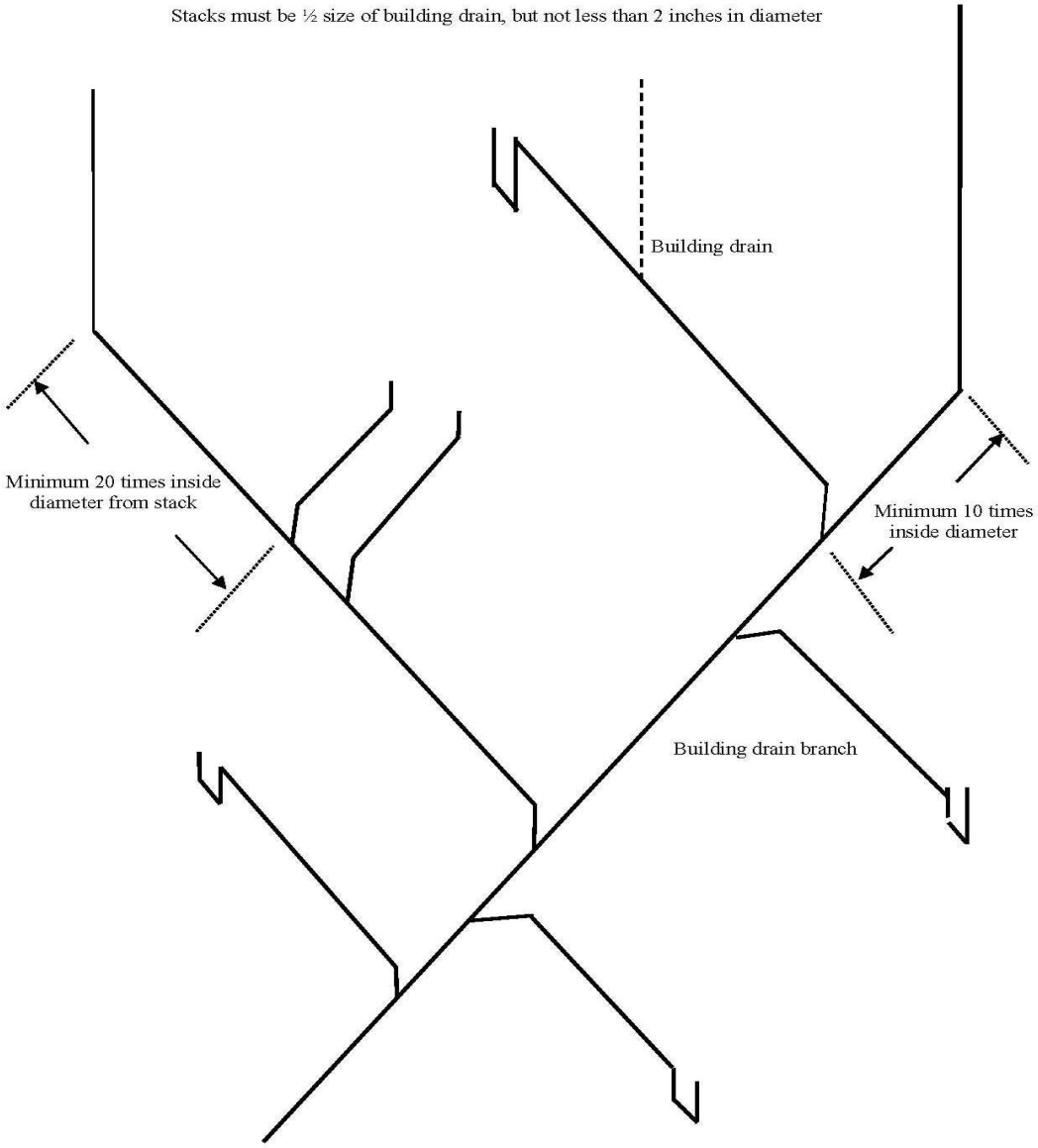
VENTS TERMINATING FOR UNDERGROUND STRUCTURES

A−382.31 (17) (a) COMBINATION DRAIN AND VENT STACKS.

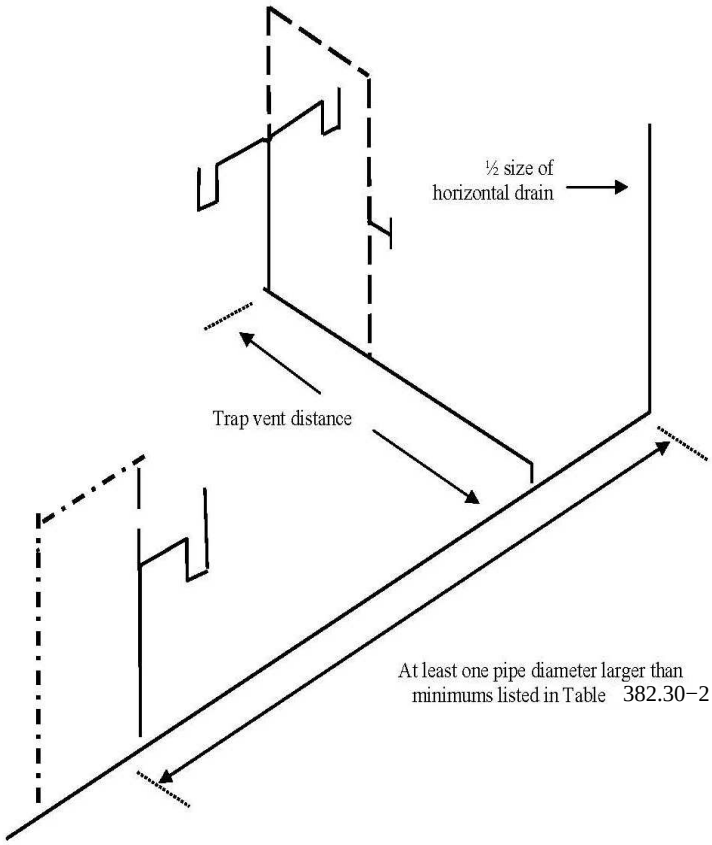


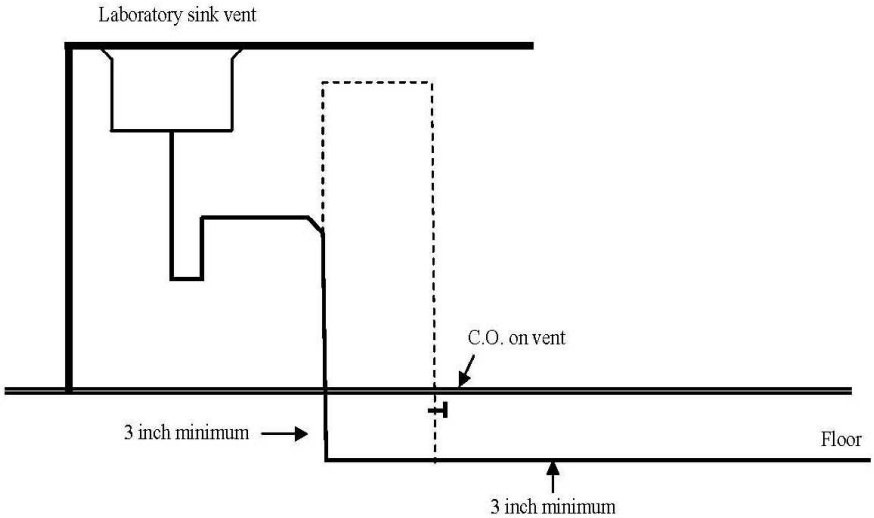


A−382.31 (17) (b) COMBINATION DRAIN AND VENT BUILDING DRAIN.

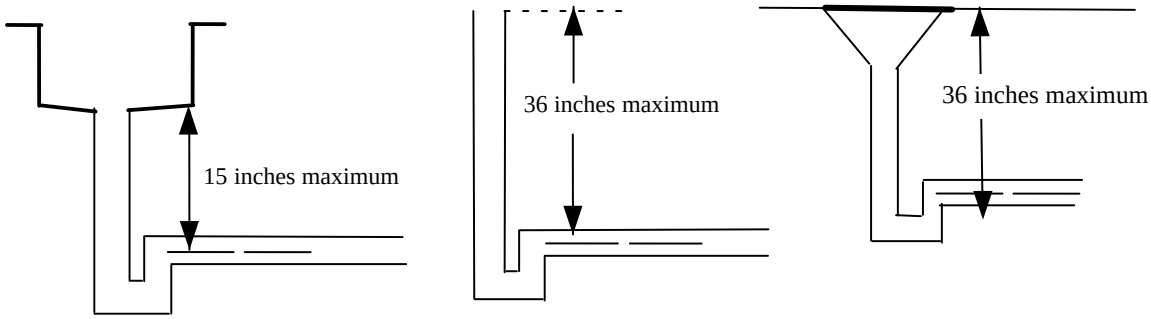


A−382.31 (17) (c) COMBINATION DRAIN AND VENT LABORATORY SINK VENTING.

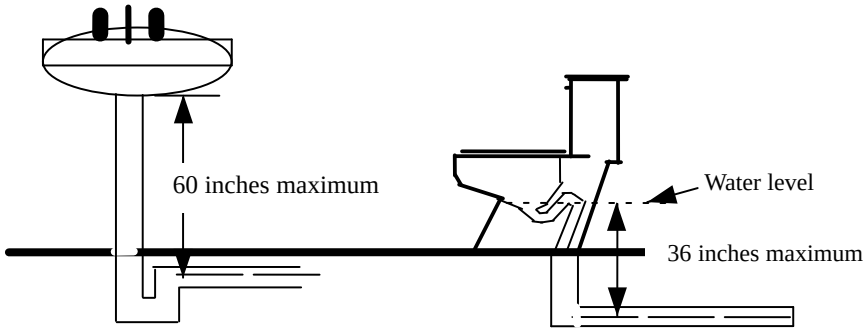




A−382.32 (4) (b) INSTALLATION OF TRAPS.



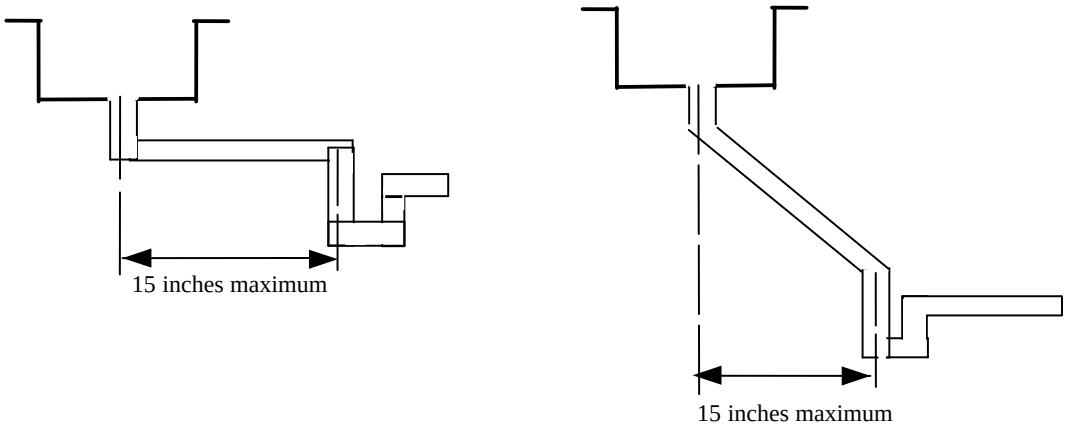
MOST FIXTURES STANDPIPE FLOOR DRAIN



Pedestal fixtures
(Lavatory, shampoo sink,
drinking fountain or cuspidor)

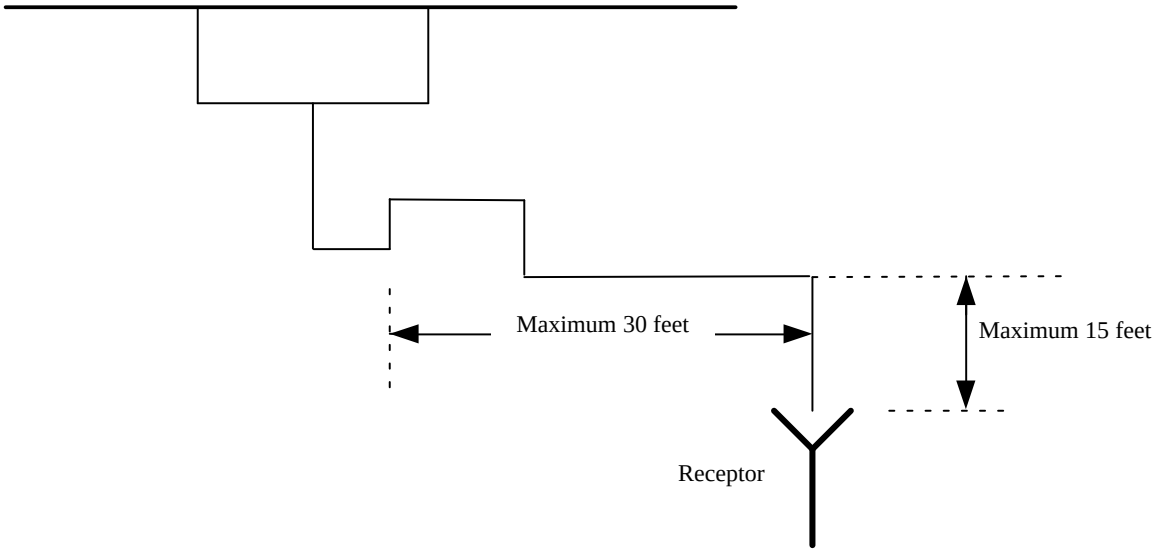
Water closet with integral trap

VERTICAL DISTANCE BETWEEN FIXTURE DRAIN OUTLET AND TRAP

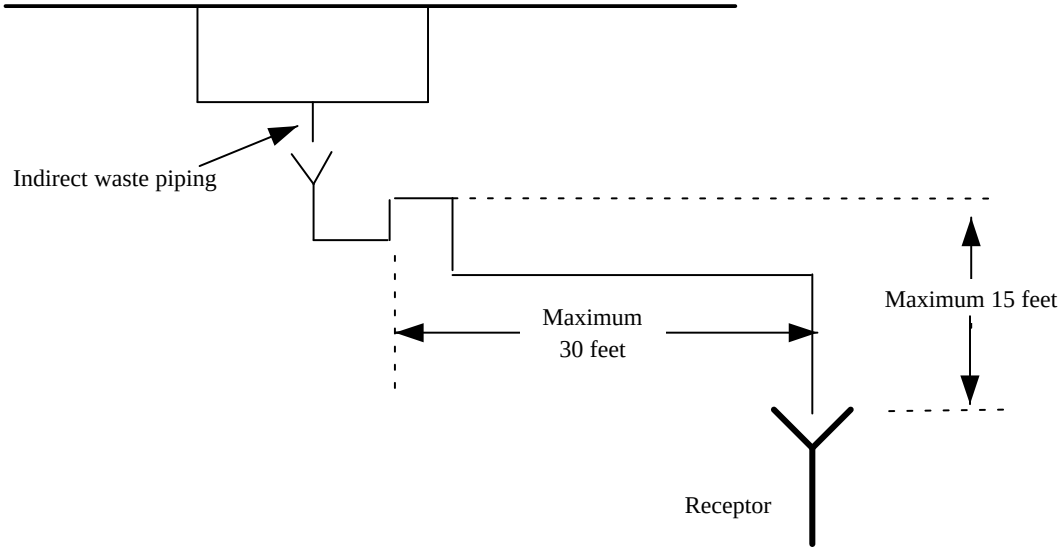


HORIZONTAL DISTANCE BETWEEN FIXTURE DRAIN OUTLET AND TRAP

A−382.33 (6)−1. INDIRECT WASTE PIPING.

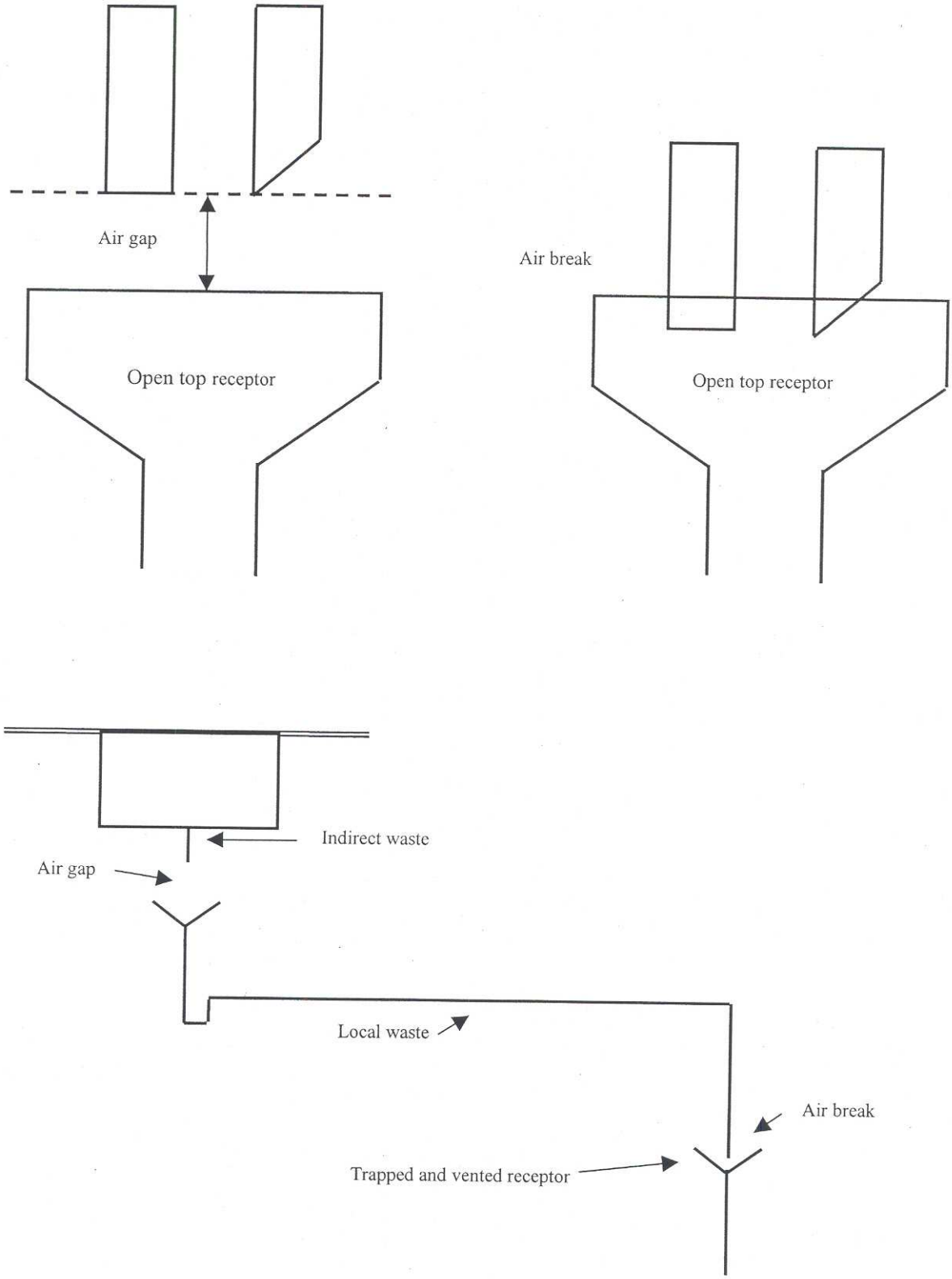


A−382.33 (6)−2. LOCAL WASTE PIPING.

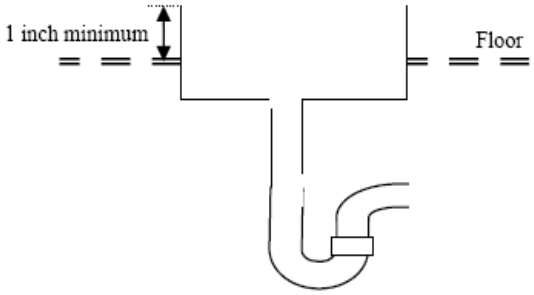


MAXIMUM LENGTH OF LOCAL WASTE PIPE

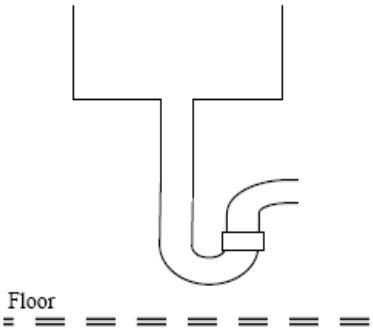
A−382.33 (7) AIR−GAPS AND AIR−BREAKS.



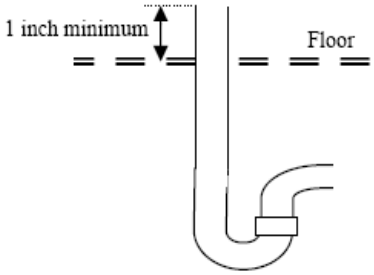
A−382.33 (8) (a) WASTE SINKS AND STANDPIPES.



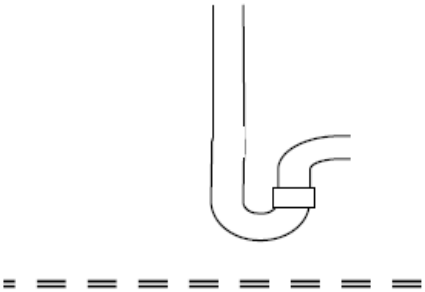
WASTE SINK IN FLOOR



WASTE SINK ABOVE FLOOR

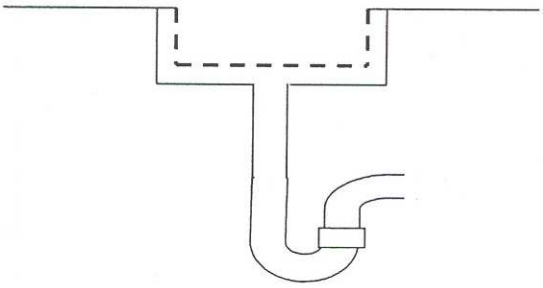


STANDPIPE IN FLOOR

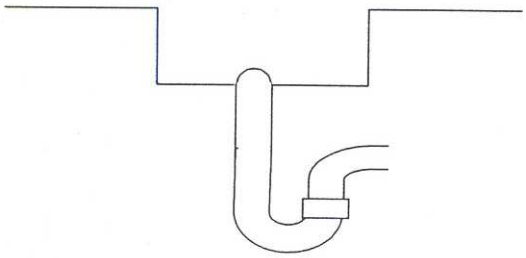


STANDPIPE ABOVE FLOOR

A−382.33 (8) (b) FLOOR SINKS.

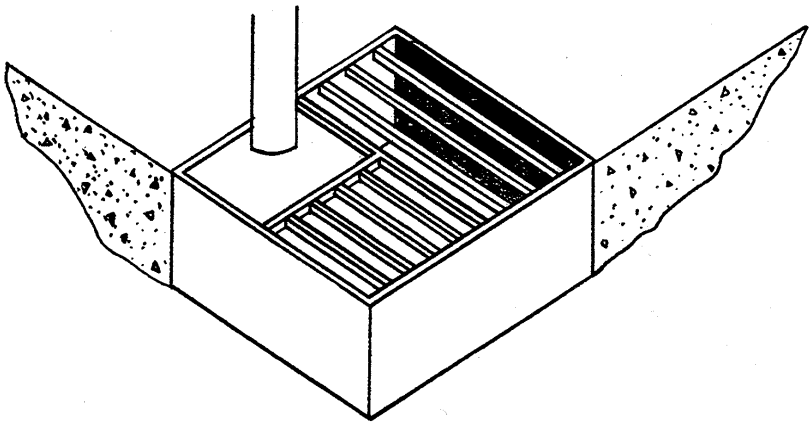


FLOOR SINK WITH BASKET

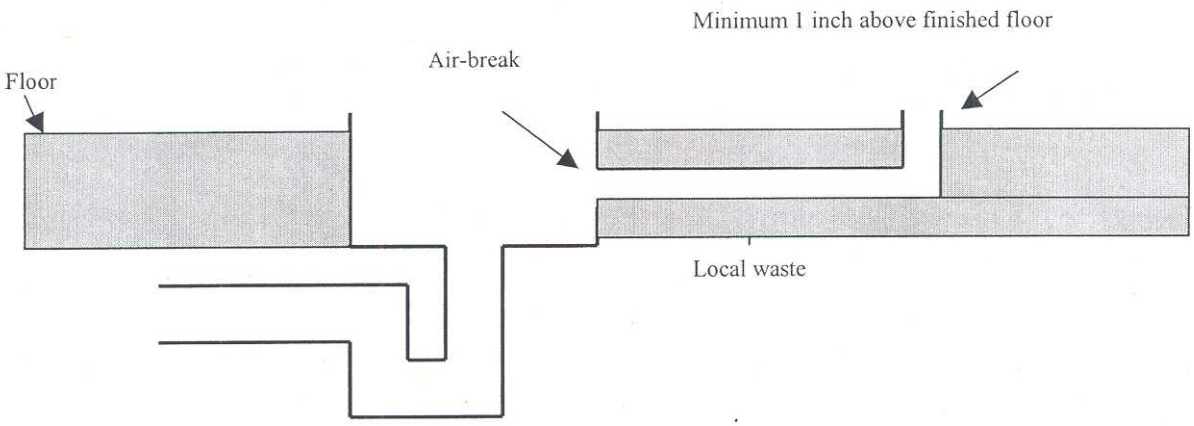


FLOOR SINK WITH DOME STRAINER

A−382.33 (8) (b) FLOOR SINK WITH GRATE OPENING.

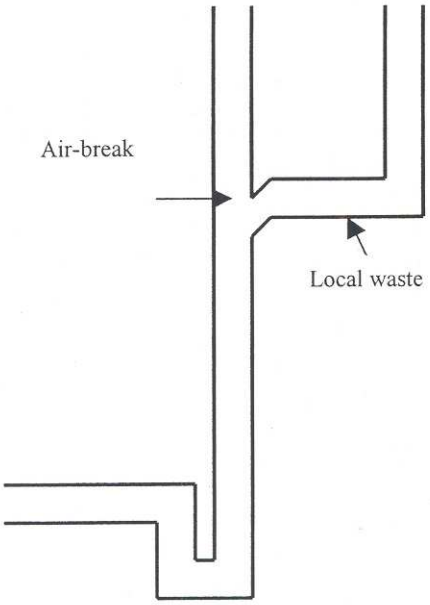


A−382.33 (8) (c)–1. LOCAL WASTE PIPING.

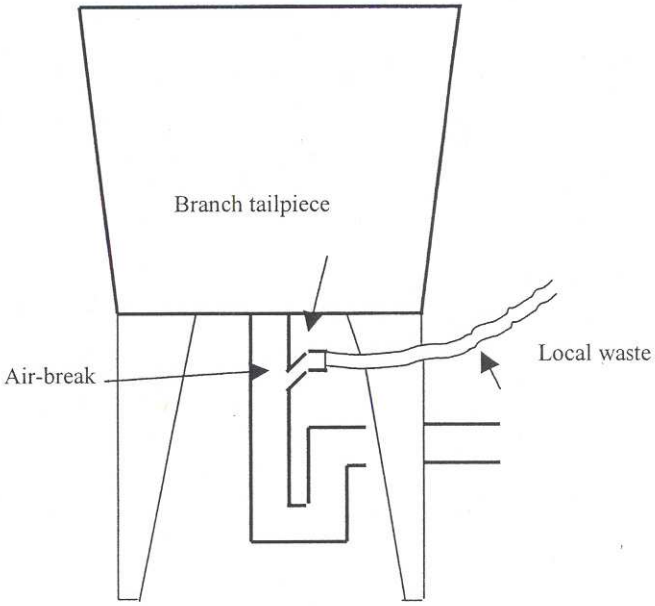


LOCAL WASTE LEADING TO A WASTE SINK, FLOOR SINK OR FLOOR DRAIN

A−382.33 (8) (c)−2. LOCAL WASTE PIPING

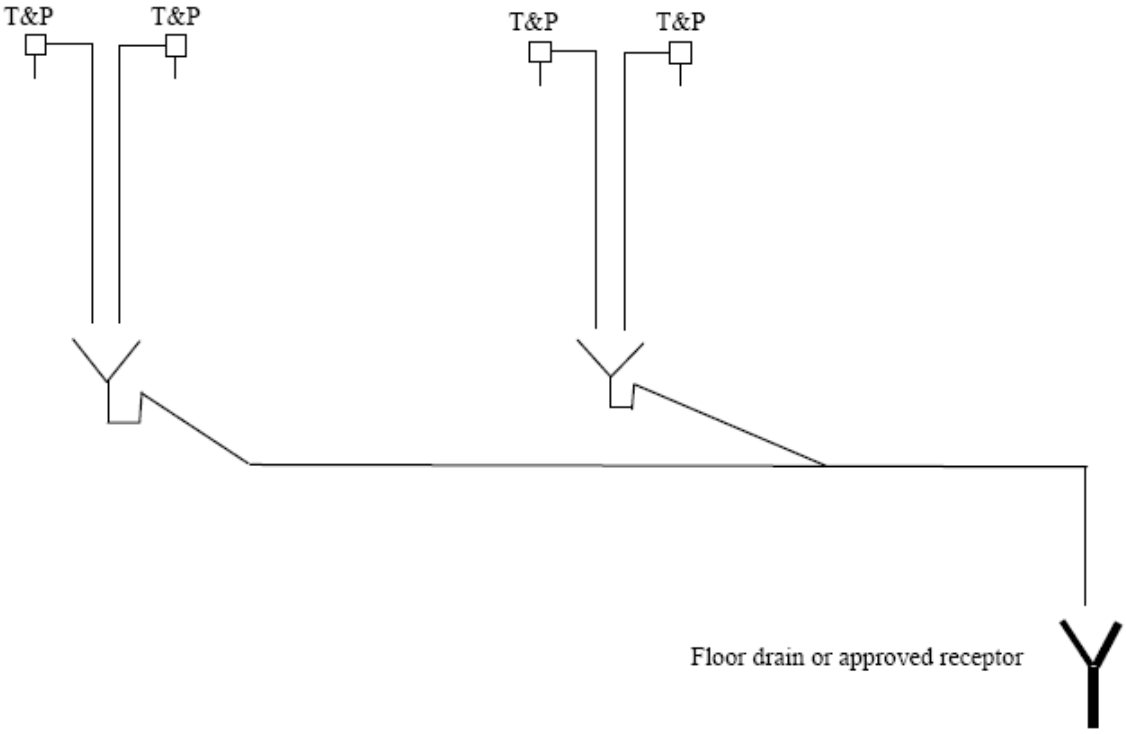


LOCAL WASTE DISCHARGING TO STANDPIPE

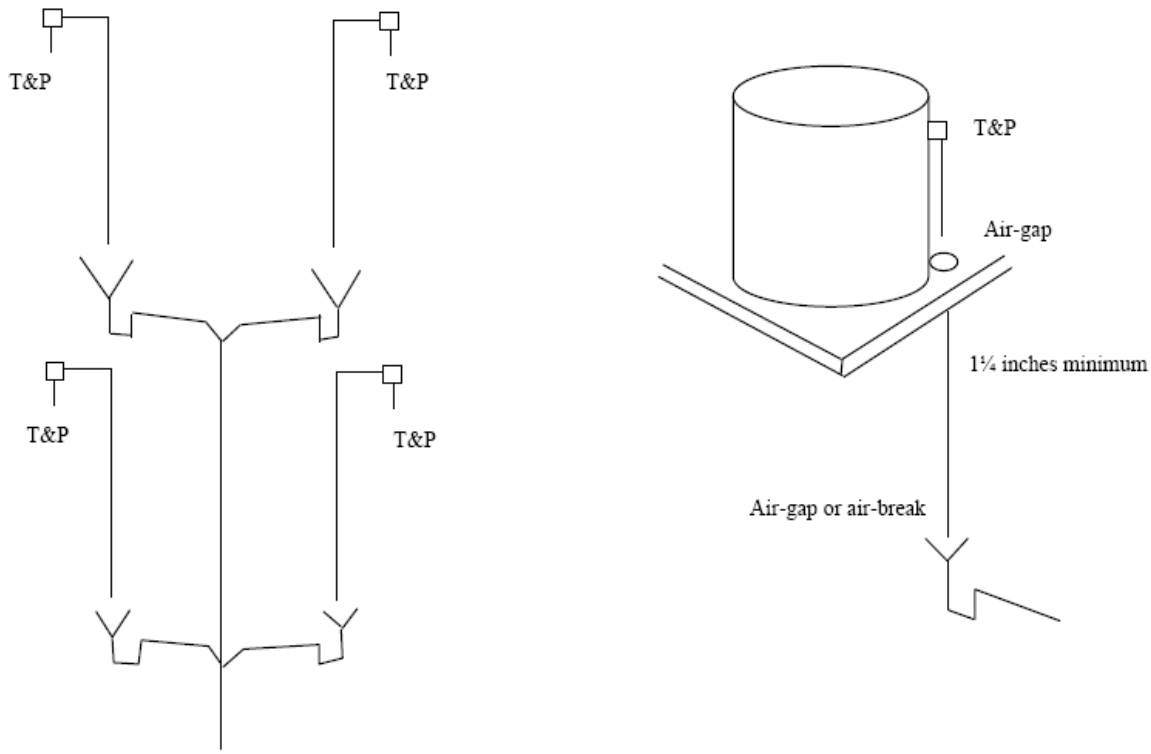


LOCAL WASTE DISCHARGING TO BRANCH TAILPIECE

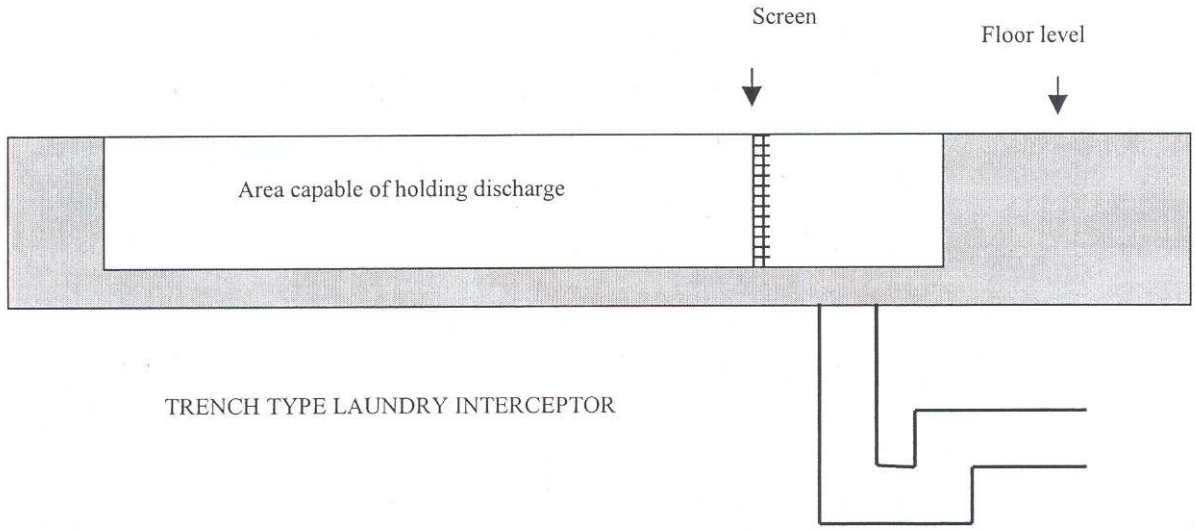
A−382.33 (8) (d)−1. LOCAL WASTE PIPING SERVING WATER HEATER TEMPERATURE AND PRESSURE RELIEF VALVES.



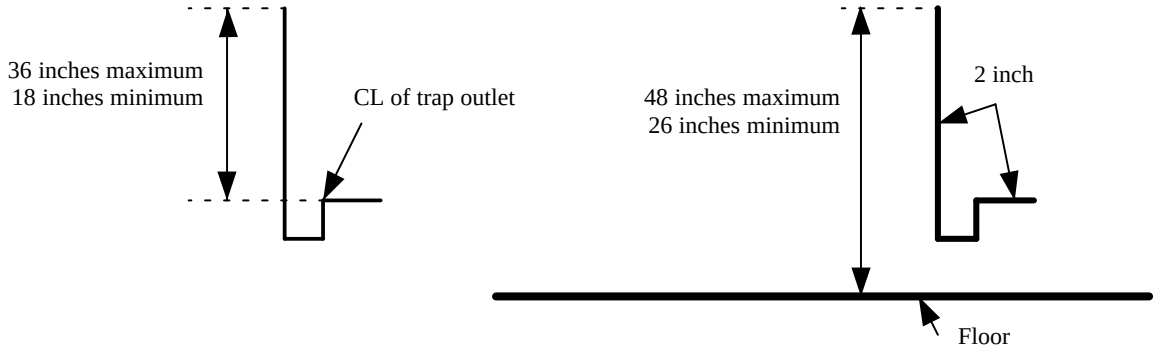
A−382.33 (8) (d)−2. LOCAL WASTE PIPING SERVING WATER HEATER TEMPERATURE AND PRESSURE RELIEF VALVES



A−382.33 (9) (c) COMMERCIAL GRAVITY DISCHARGE−TYPE CLOTHES WASHERS.

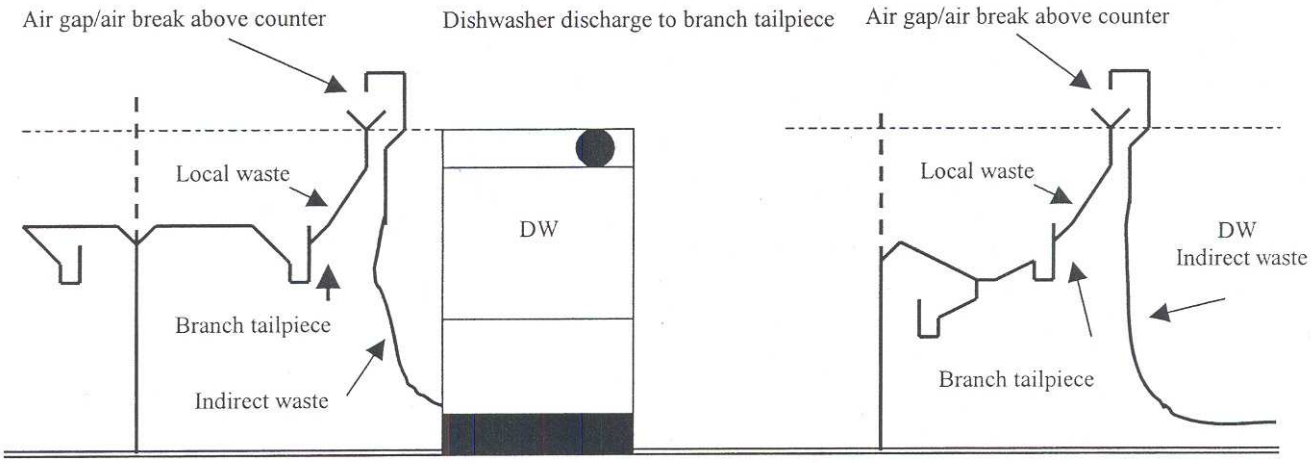


A−382.33 (9) (d)−1. RESIDENTIAL−TYPE CLOTHES WASHERS.



WASHER STANDPIPE RECEPTORS

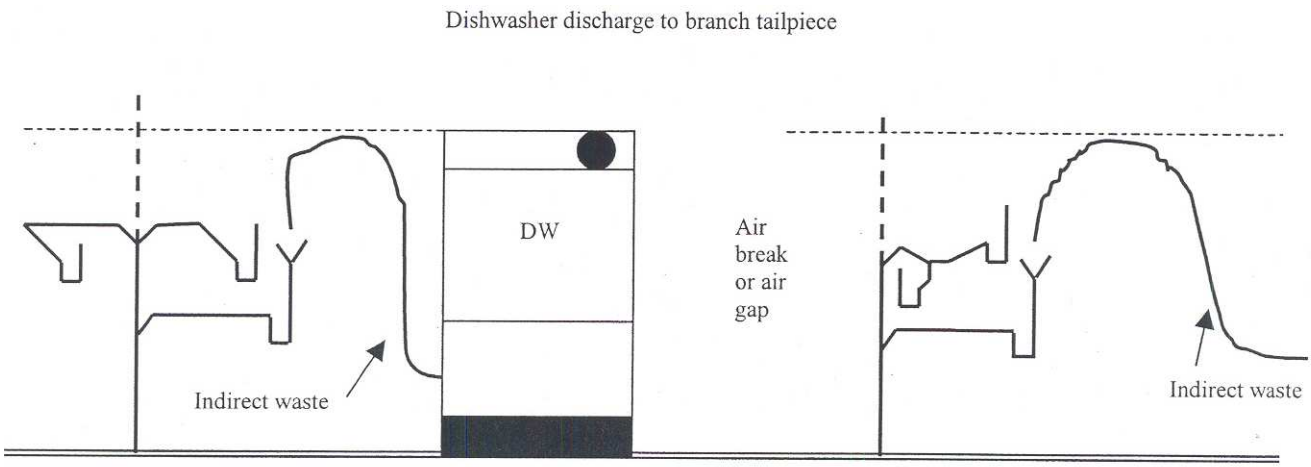
A−382.33 (9) (d)−2. RESIDENTIAL−TYPE DISHWASHERS.



KITCHEN SINK WITH OR WITHOUT FOOD WASTE GRINDER

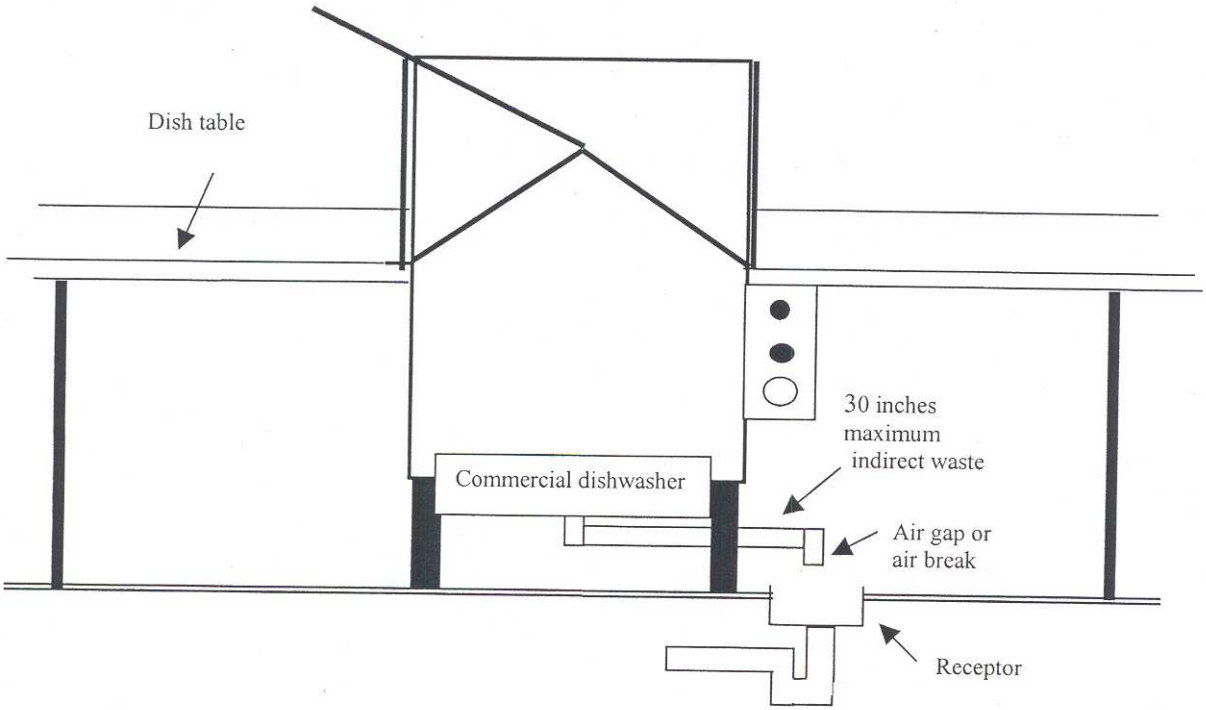
KITCHEN SINK WITH OR WITHOUT FOOD WASTE GRINDER

A−382.33 (9) (d)−3. RESIDENTIAL−TYPE DISHWASHERS



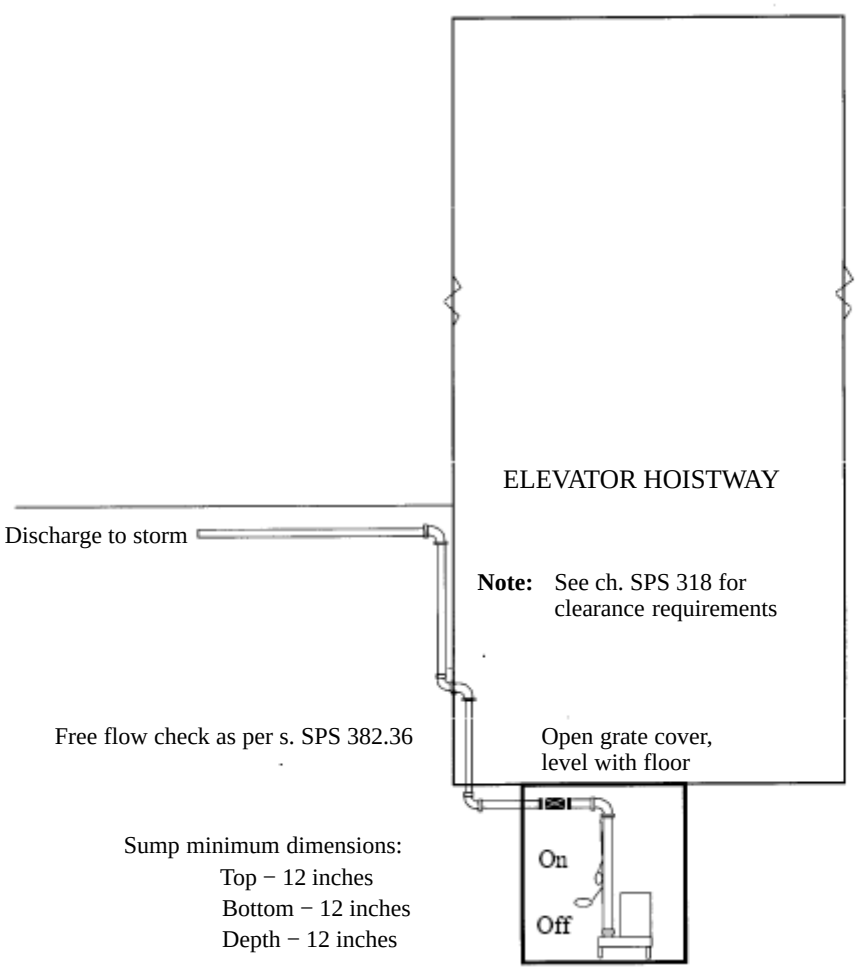
KITCHEN SINK WITH OR WITHOUT FOOD WASTE GRINDER

A−382.33 (9) (d)−4. COMMERCIAL DISHWASHERS.

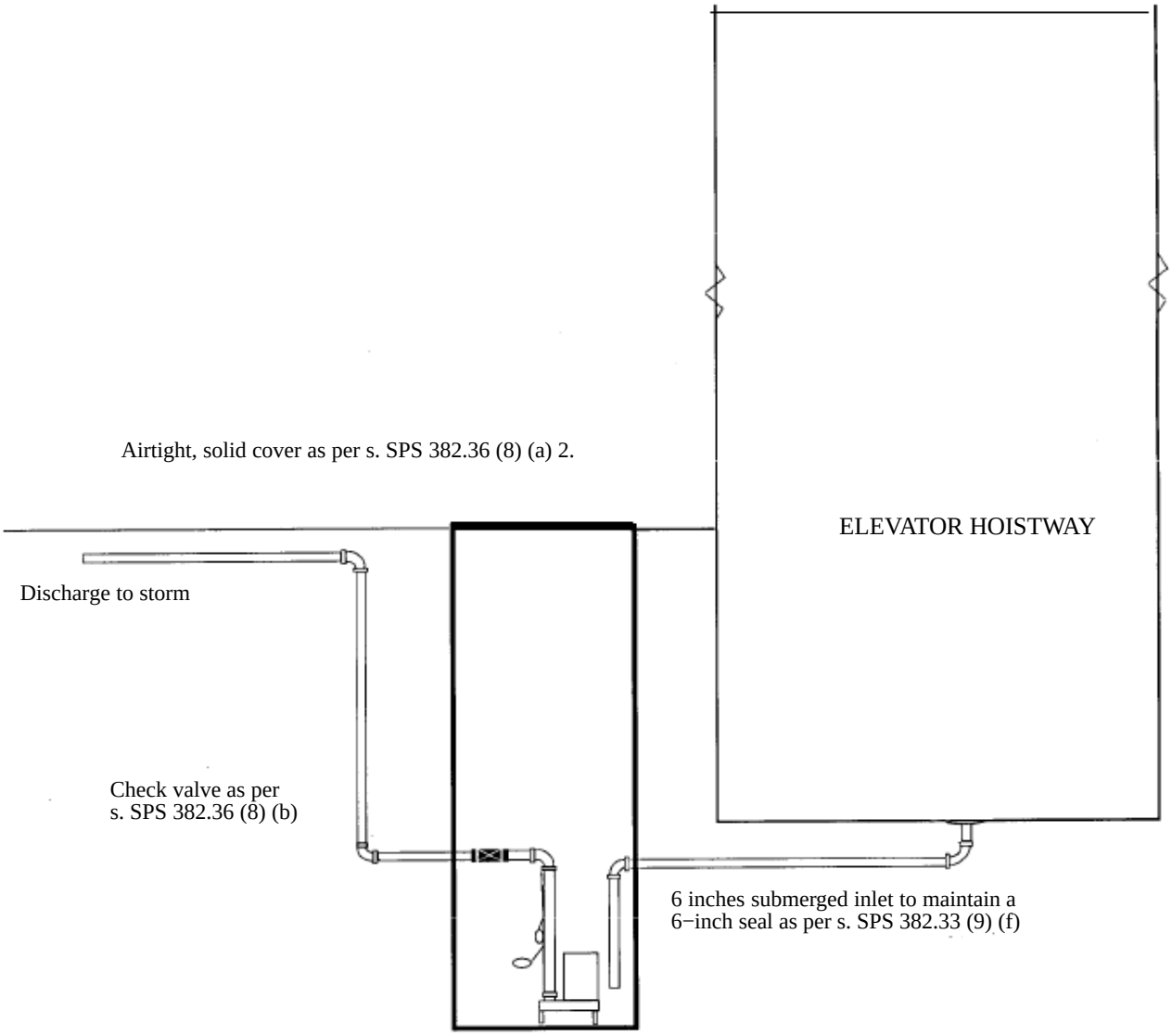


A−382.33 (9) (f)−1. ELEVATOR PIT SUBSOIL AND FLOOR DRAINS. Drains and sumps complying with ss. SPS 382.33 and 382.36 shall be provided.

Note: Section SPS 318.23 includes requirements for the installation of drains and sumps. Section SPS 318.23 reads: "Drains and sumps complying with ss. SPS 382.33 and 382.36 shall be provided. Drains connected directly to sanitary drain systems shall not be installed in elevator pits."

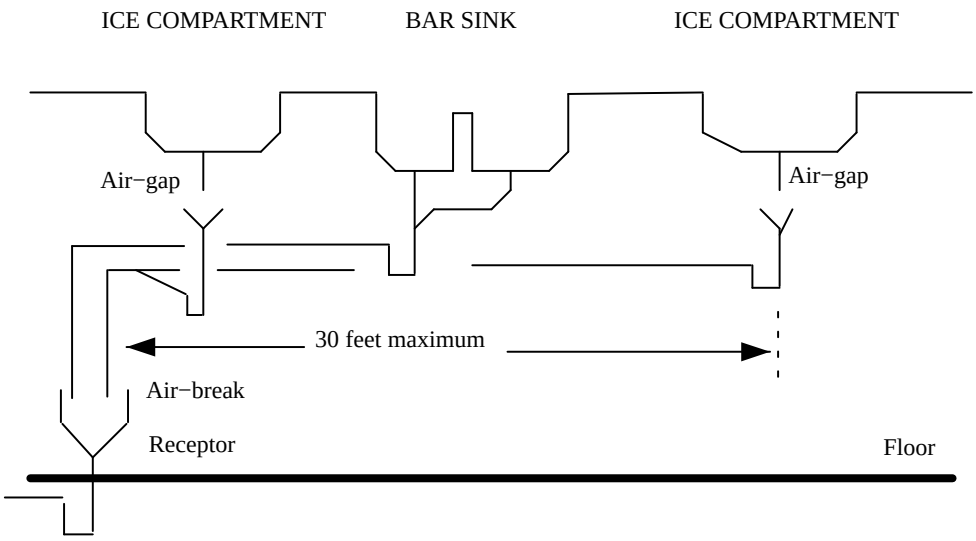


A−382.33 (9) (f)−2. ELEVATOR PIT SUBSOIL AND FLOOR DRAINS.

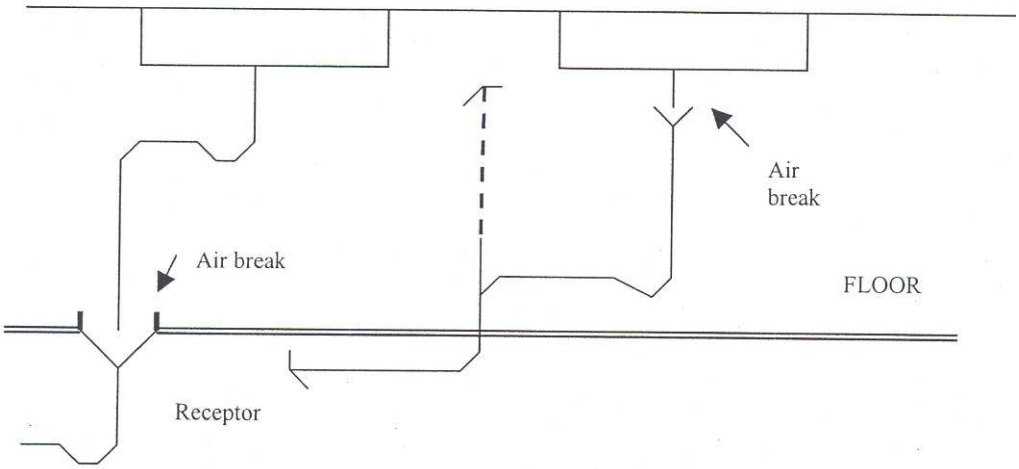


ELEVATOR DRAIN DISCHARGE − STORM DRAIN CONNECTION

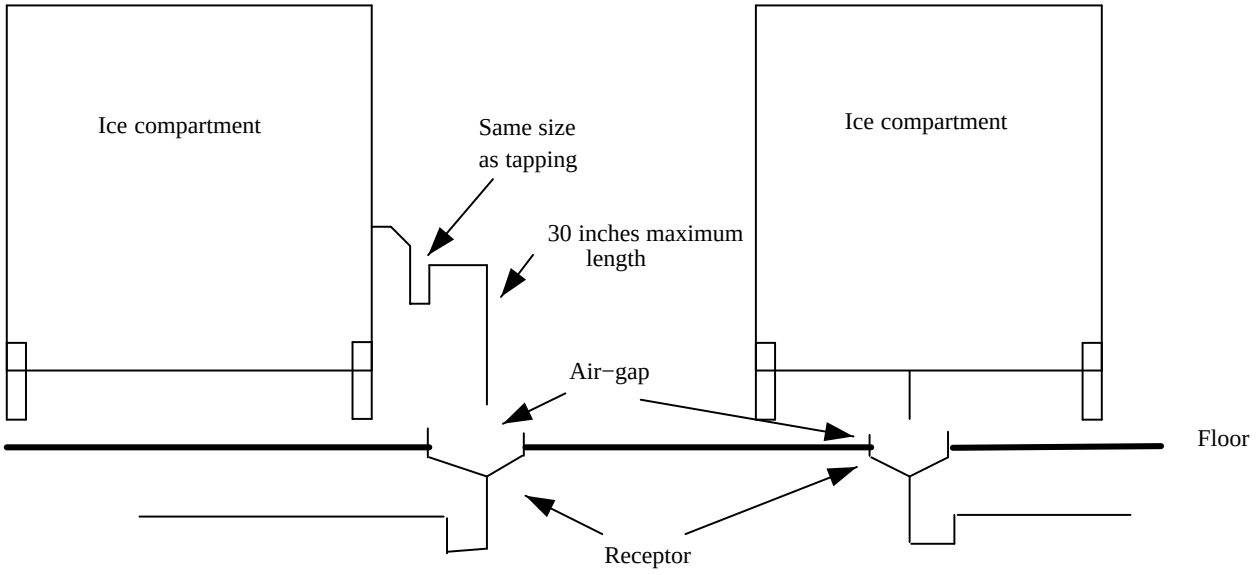
A−382.33 (9) (g) 1. BAR AND SODA FOUNTAIN SINKS.

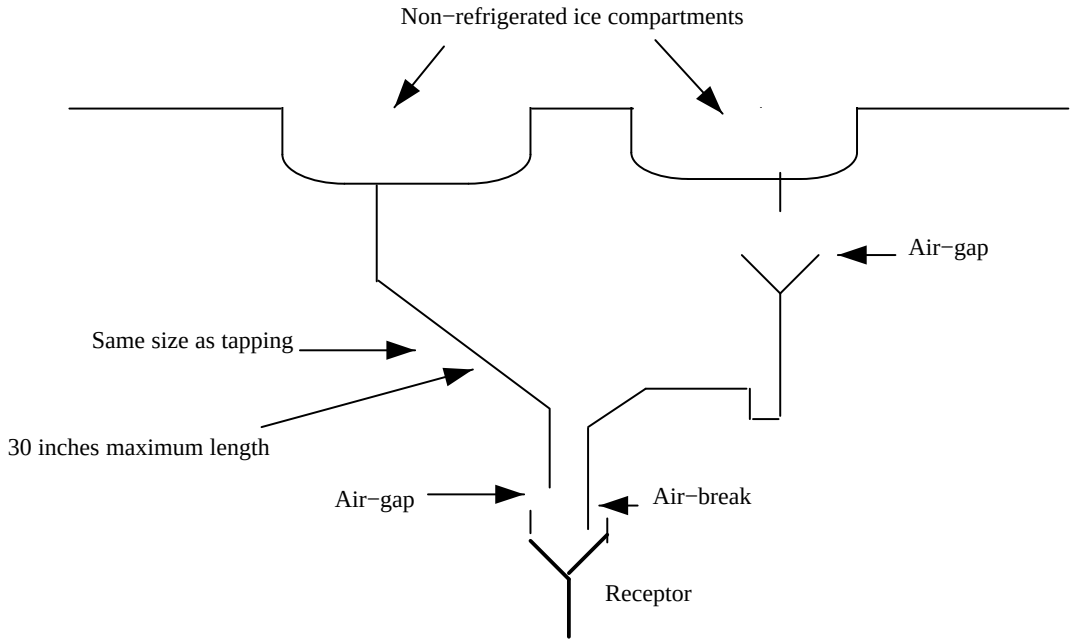


A−382.33 (9) (g) 2. BEER TAPS, COFFEE MAKERS, GLASS FILLERS AND SODA DISPENSERS.

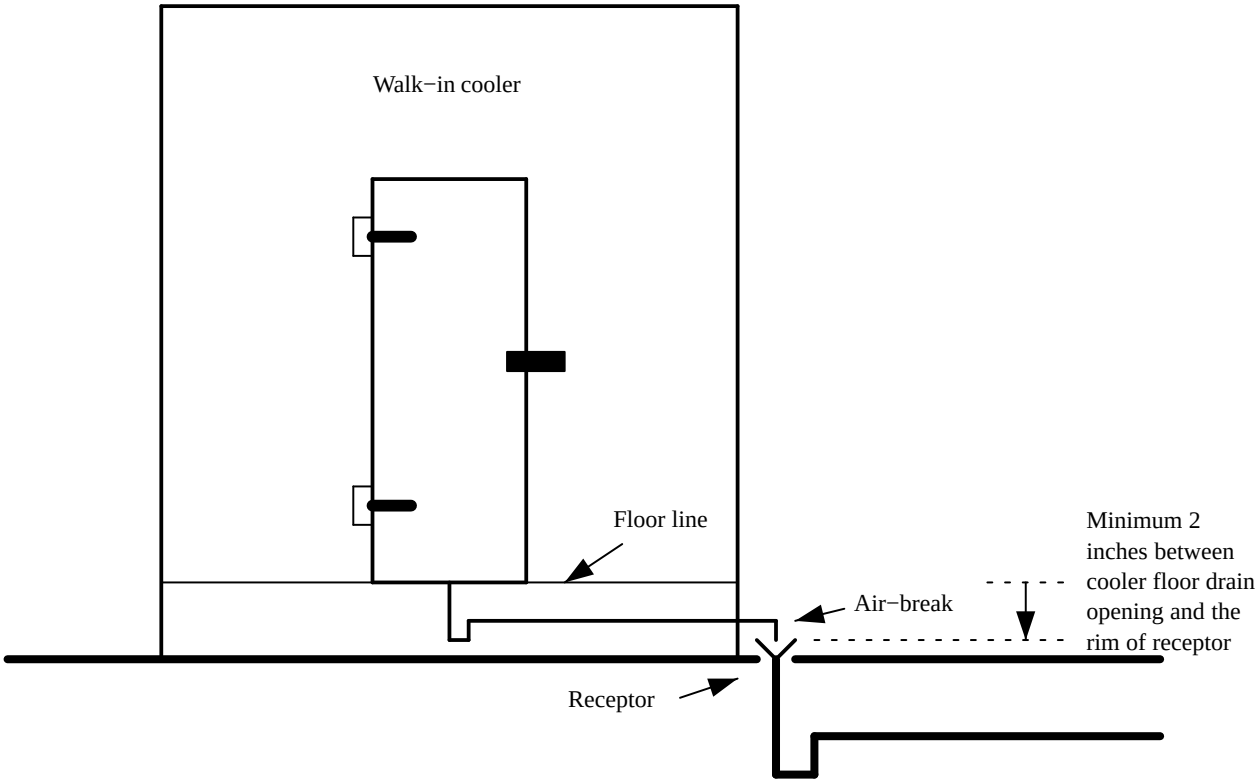


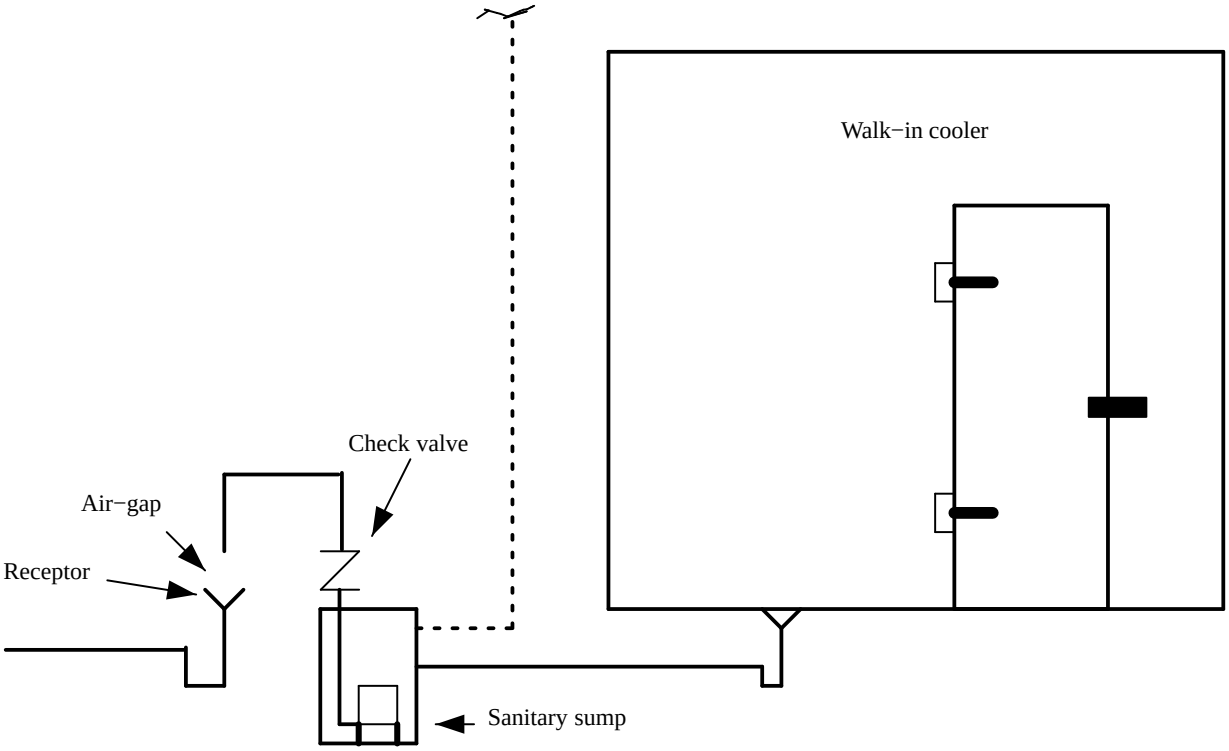
A−382.33 (9) (g) 3. NOVELTY BOXES AND ICE COMPARTMENTS AND ICE CREAM DIPPER WELLS.



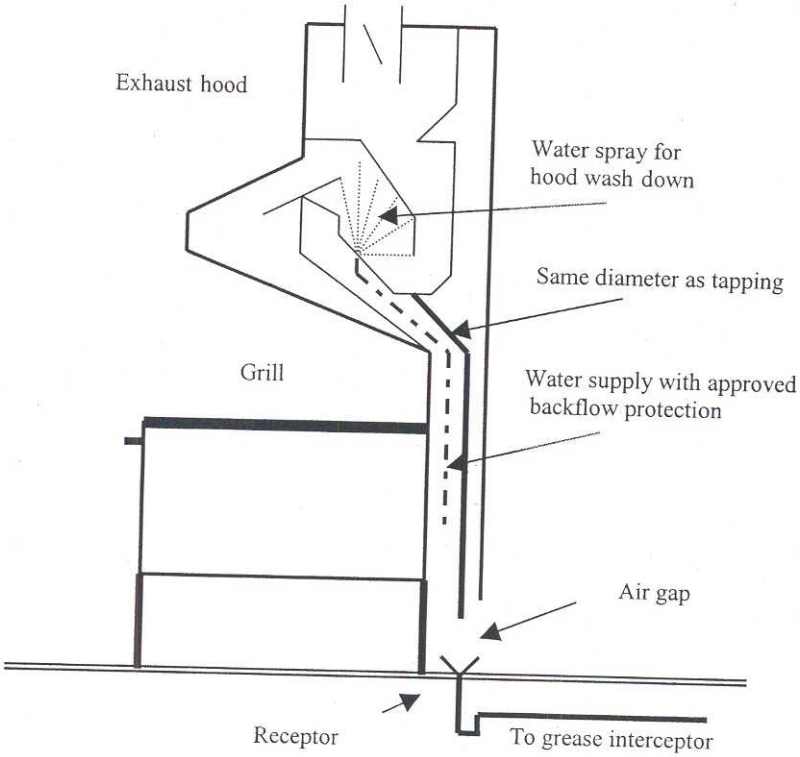


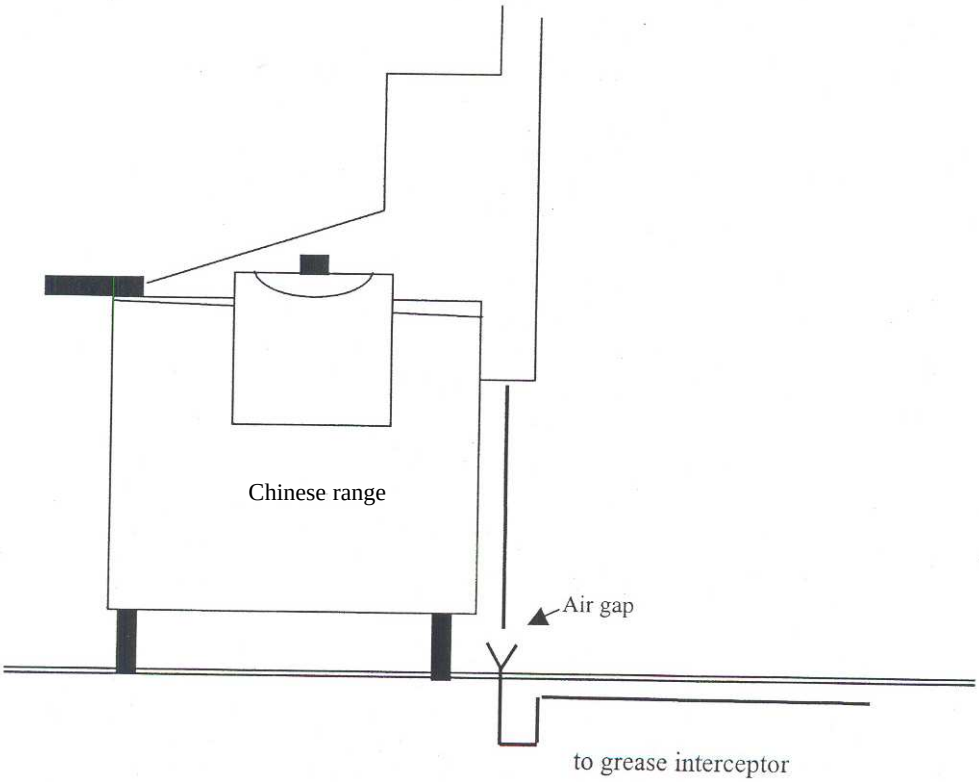
A−382.33 (9) (g) 4. REFRIGERATED FOOD STORAGE ROOMS, COMPARTMENTS AND DISPLAY CASES.



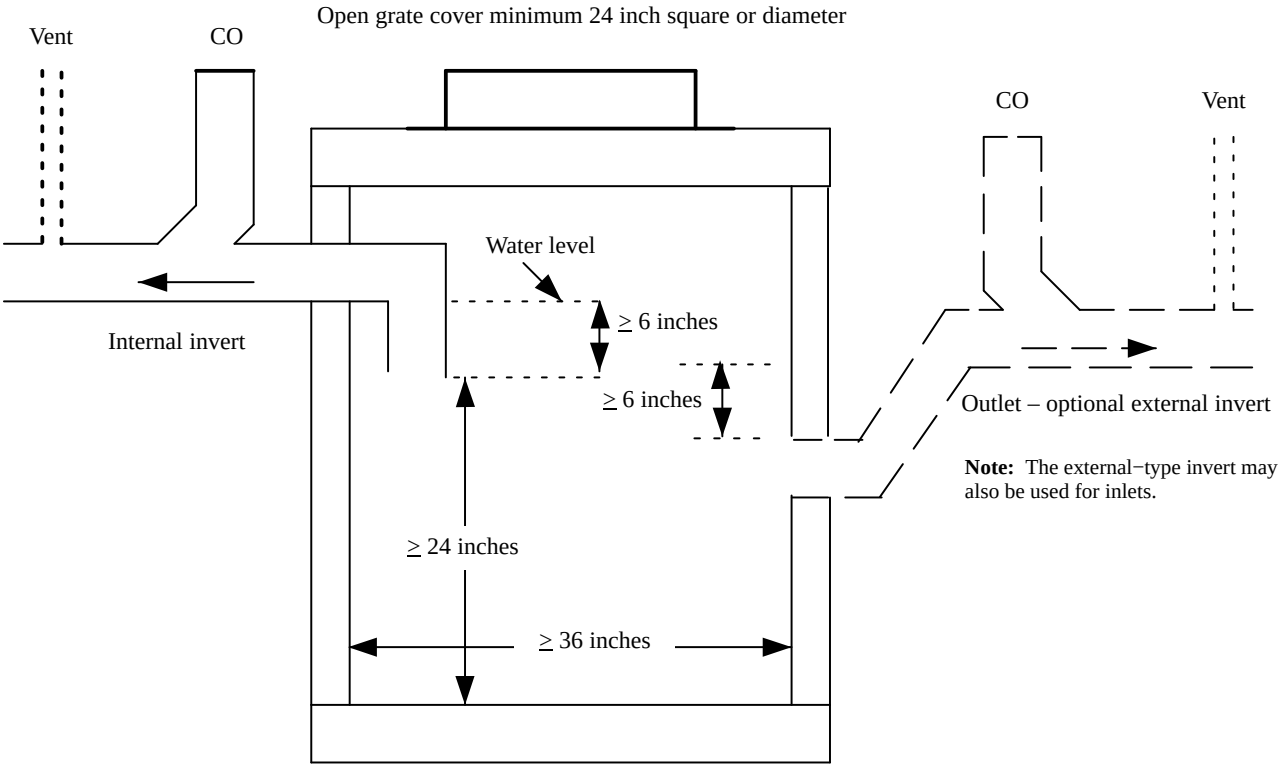


A−382.33 (9) (g) 5. MISCELLANEOUS FOOD HANDLING EQUIPMENT.

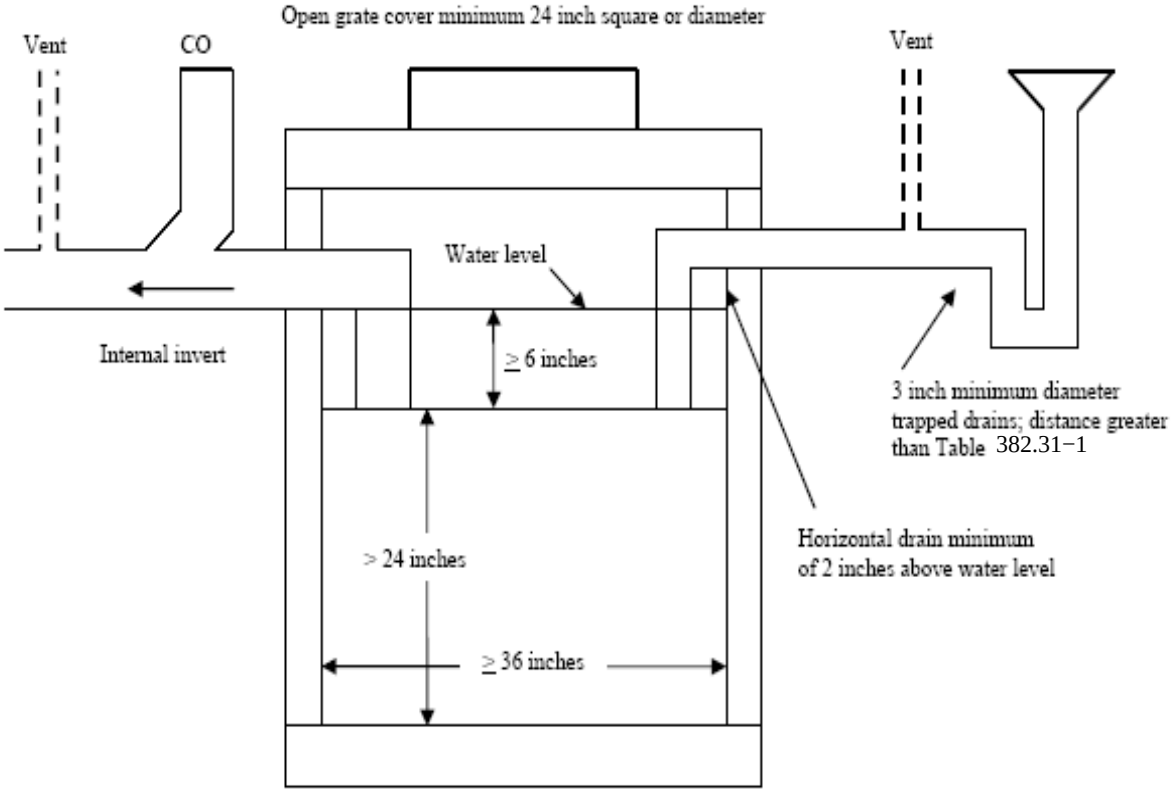




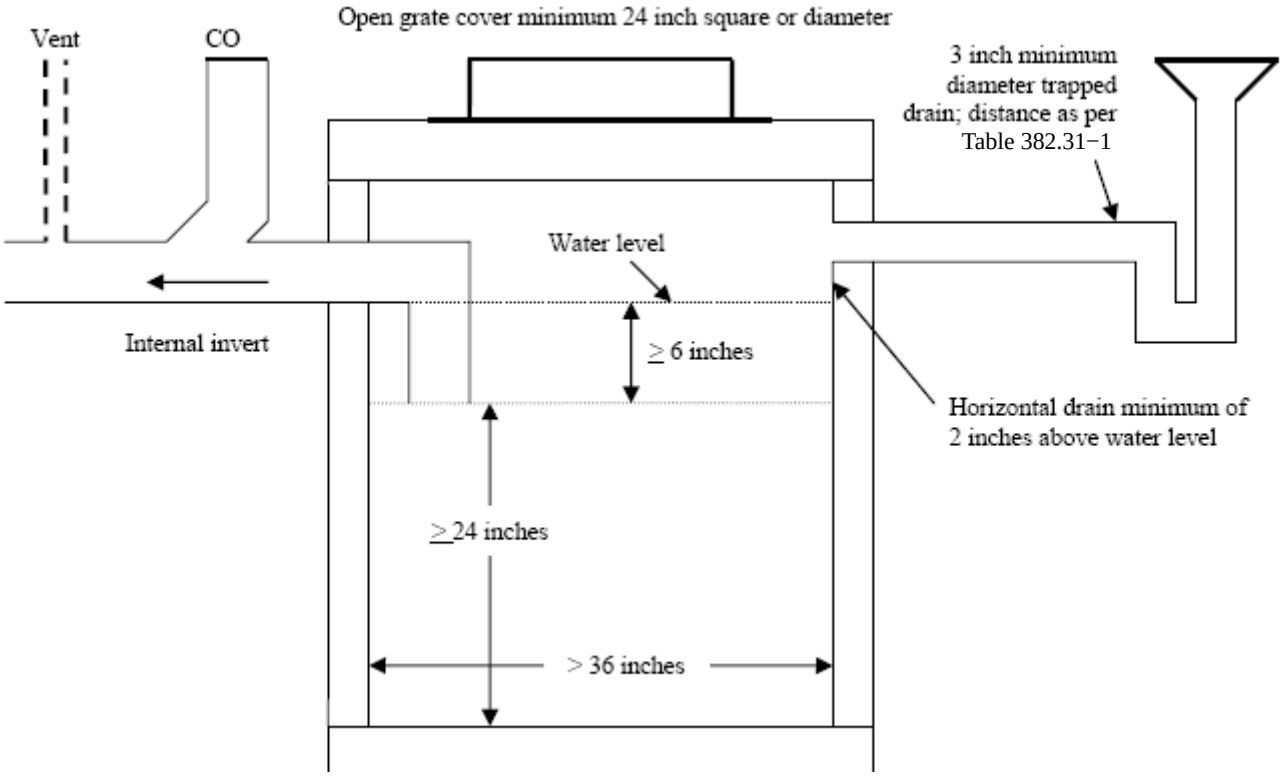
A−382.34 (4)−1. GARAGE CATCH BASINS.



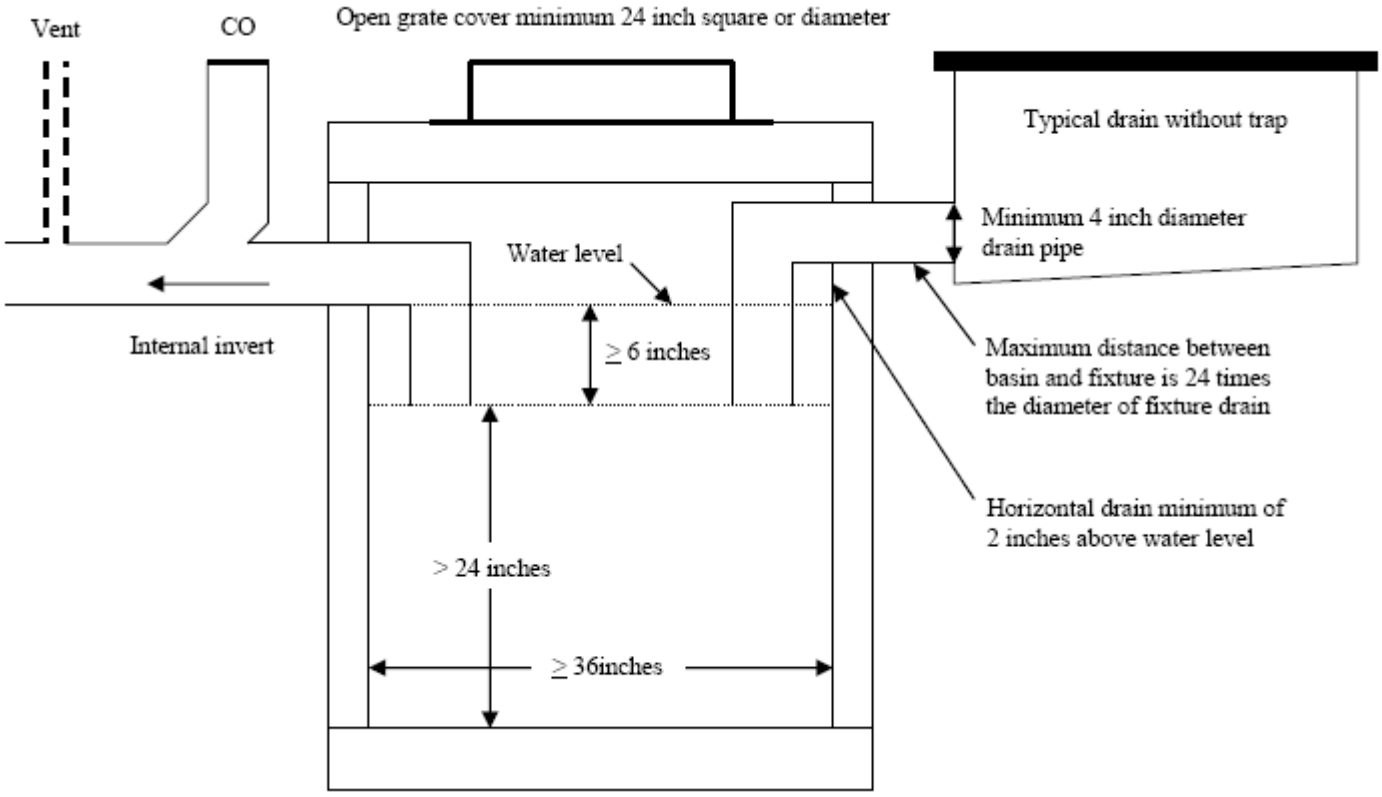
A−382.34 (4)−2. TRAPPED FIXTURES DISCHARGING TO CATCH BASIN.



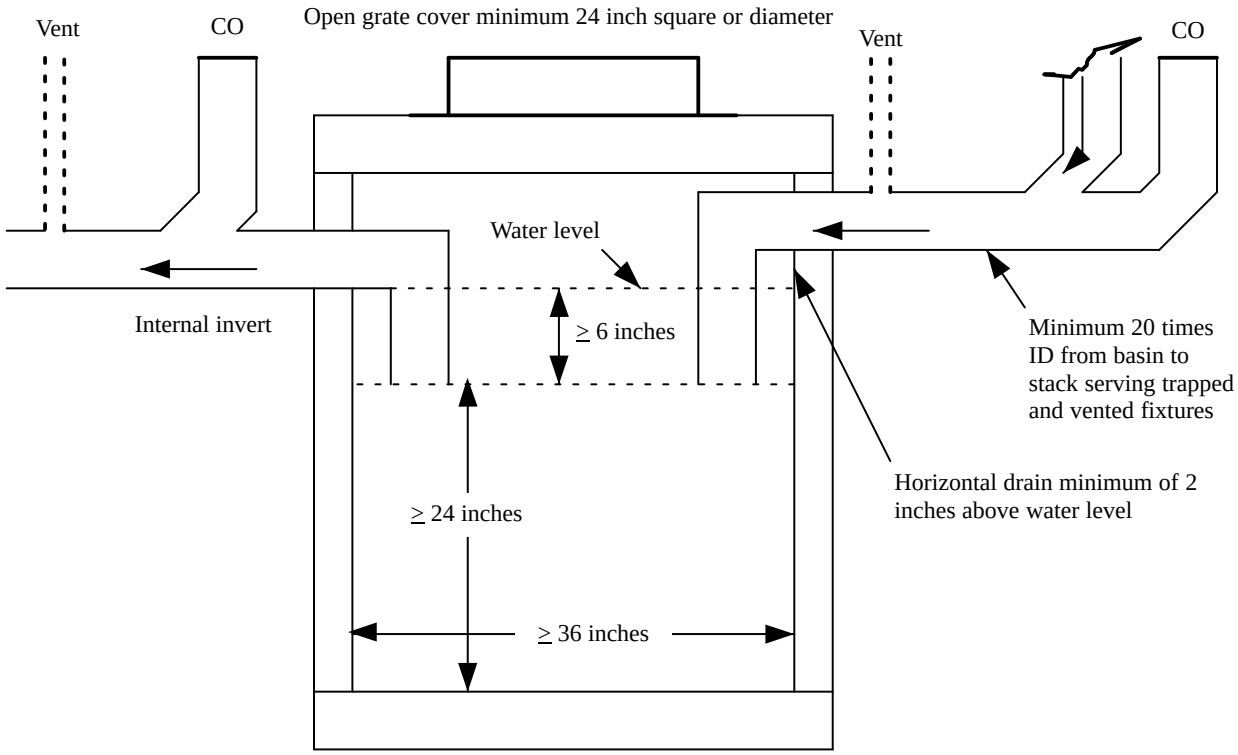
A−382.34 (4)−3. TRAPPED FIXTURE DISCHARGING INTO GARAGE CATCH BASIN.



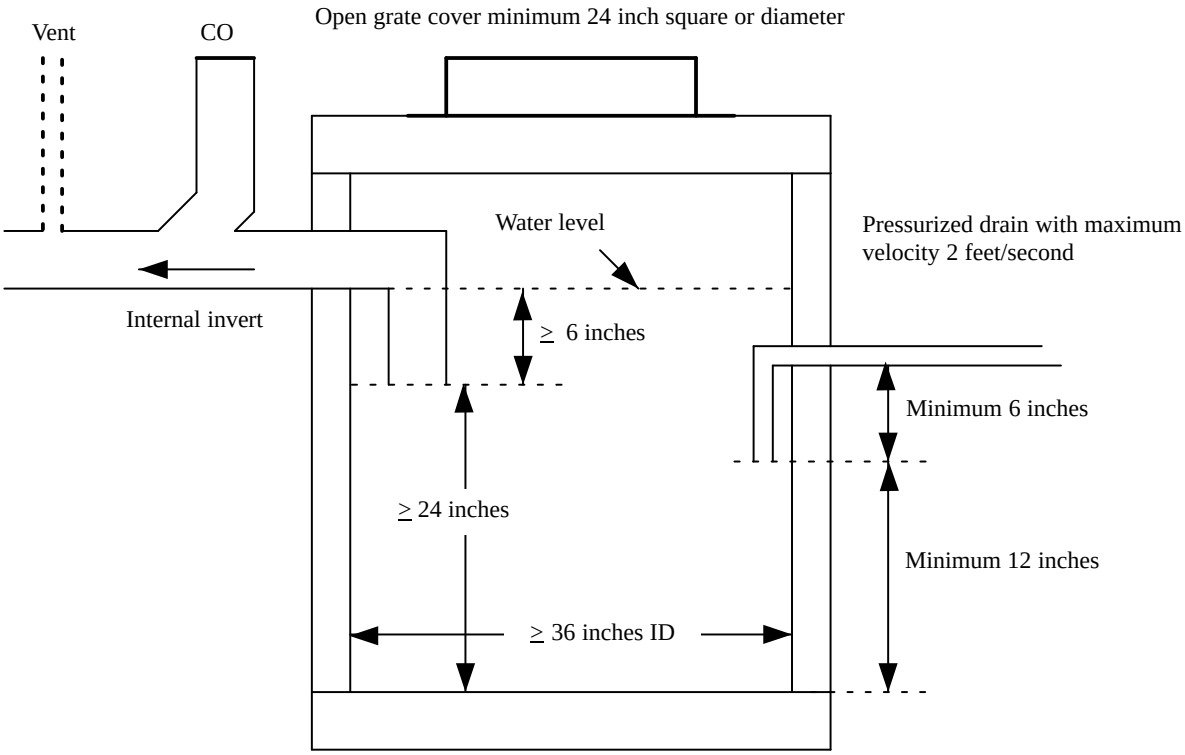
A−382.34 (4)−4. FIXTURES WITHOUT TRAPS DISCHARGING TO CATCH BASIN.



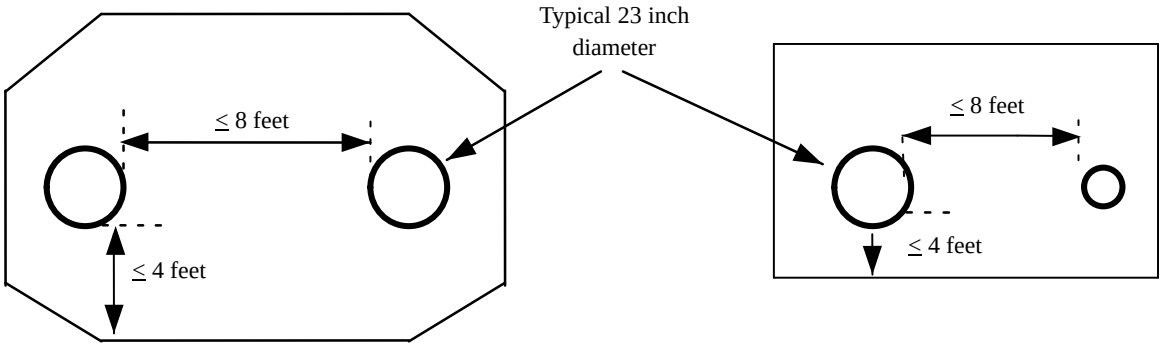
A−382.34 (4)−5. GARAGE CATCH BASIN WITH FIXTURES ON SEPARATE FLOOR LEVELS.



A−382.34 (4)−6. GARAGE CATCH BASIN RECEIVING PRESSURIZED DRAINS.

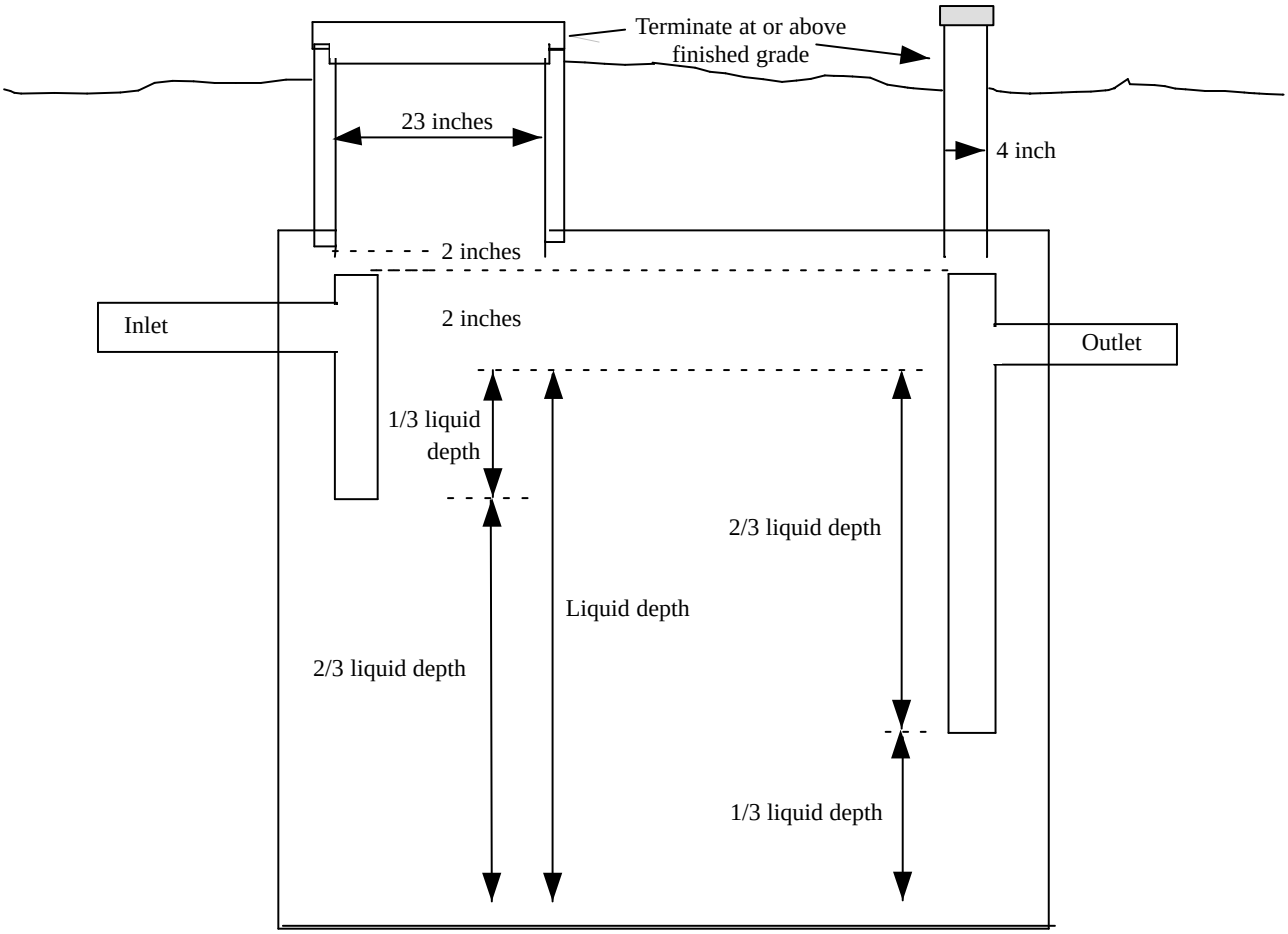


A−382.34 (5) (b)−1. EXTERIOR GREASE INTERCEPTORS.

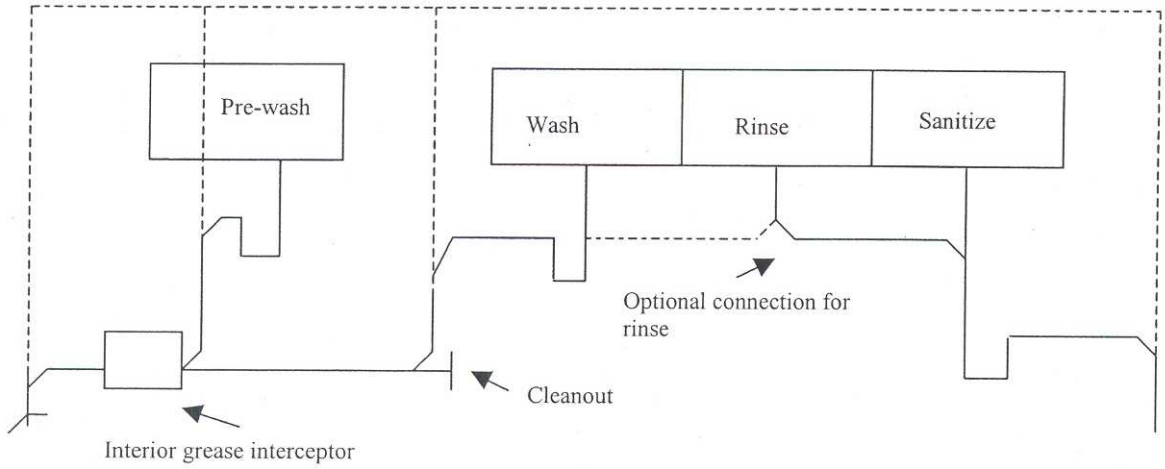


GREASE INTERCEPTOR MANHOLE LOCATION

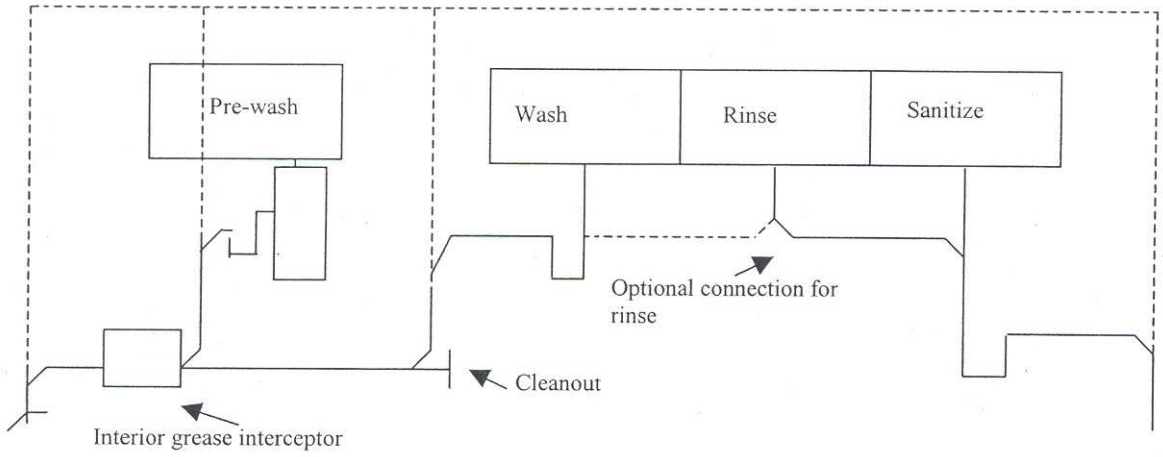
A−382.34 (5) (b)−2. EXTERIOR GREASE INTERCEPTORS.



A−382.34 (5) (c) INTERIOR GREASE INTERCEPTORS.

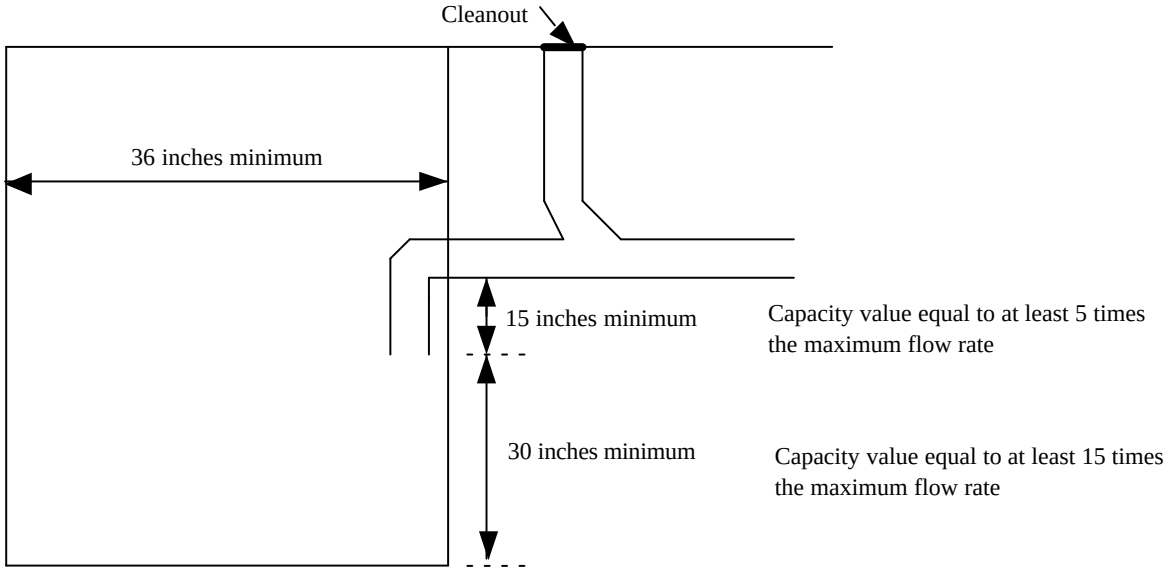


PRE-WASH AND 3-COMPARTMENT SCULLERY SINK

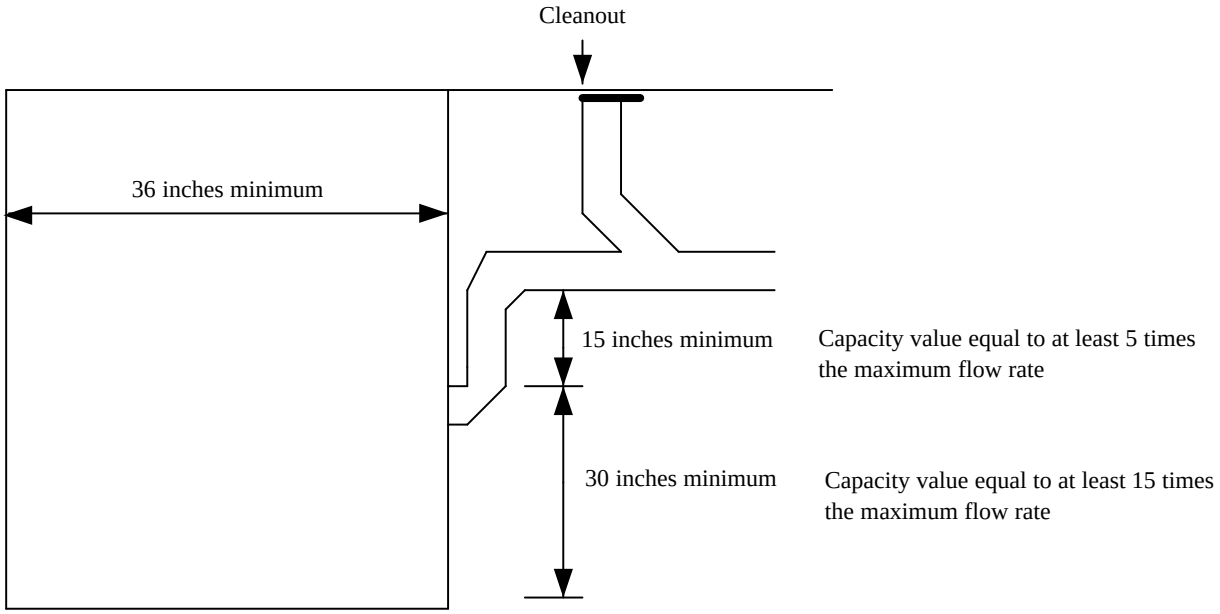


PRE-WASH WITH DISPOSAL AND 3- COMPARTMENT SCULLERY SINK

A–82.34 (6) AUTOMATIC CAR WASHES.

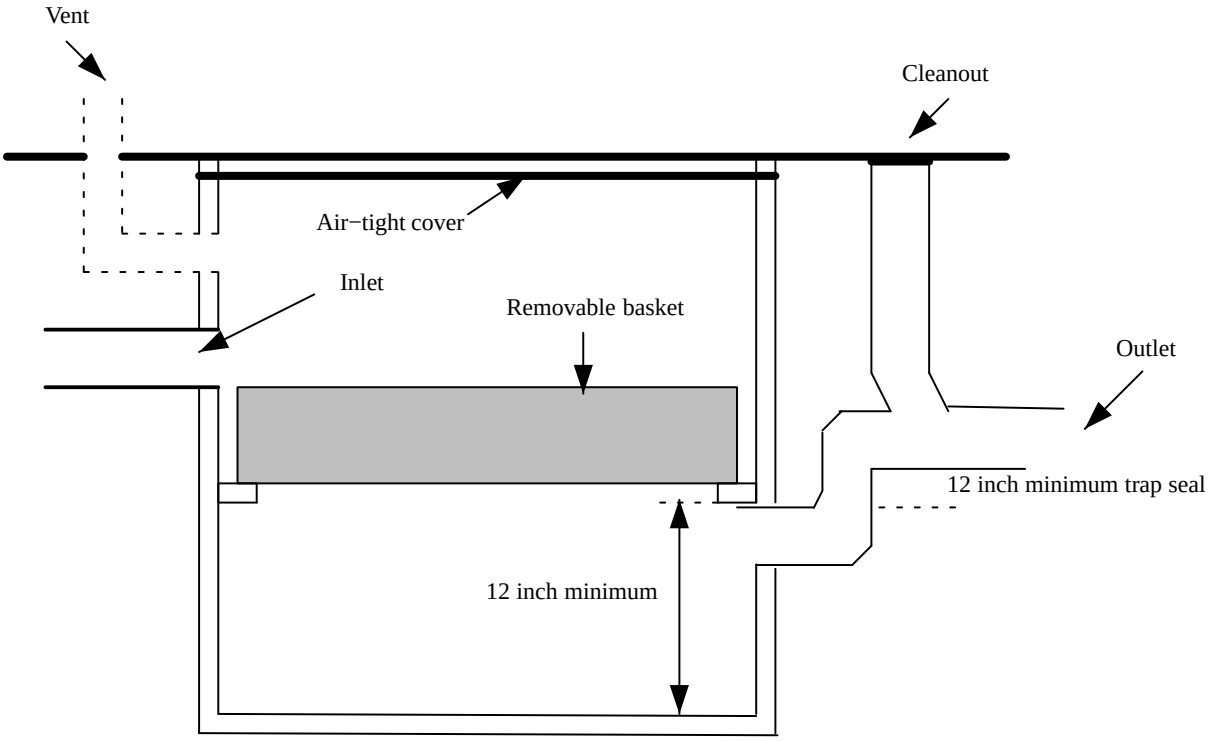


CAR WASH INTERIOR WITH INVERT INSIDE OF BASIN



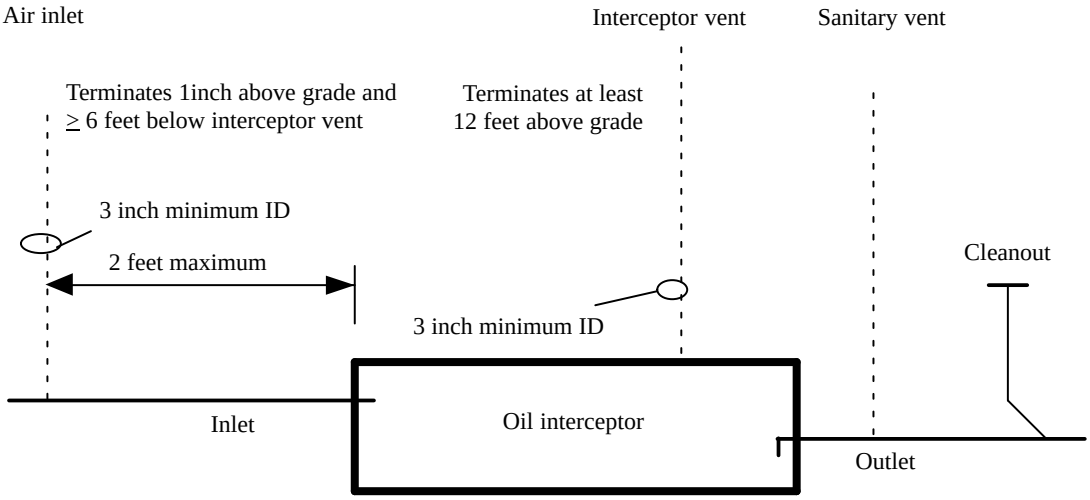
CAR WASH INTERIOR WITH INVERT OUTSIDE OF BASIN

A−382.34 (7) COMMERCIAL LAUNDRIES. See also A−382.33 (9)−4. for trench type interceptors.

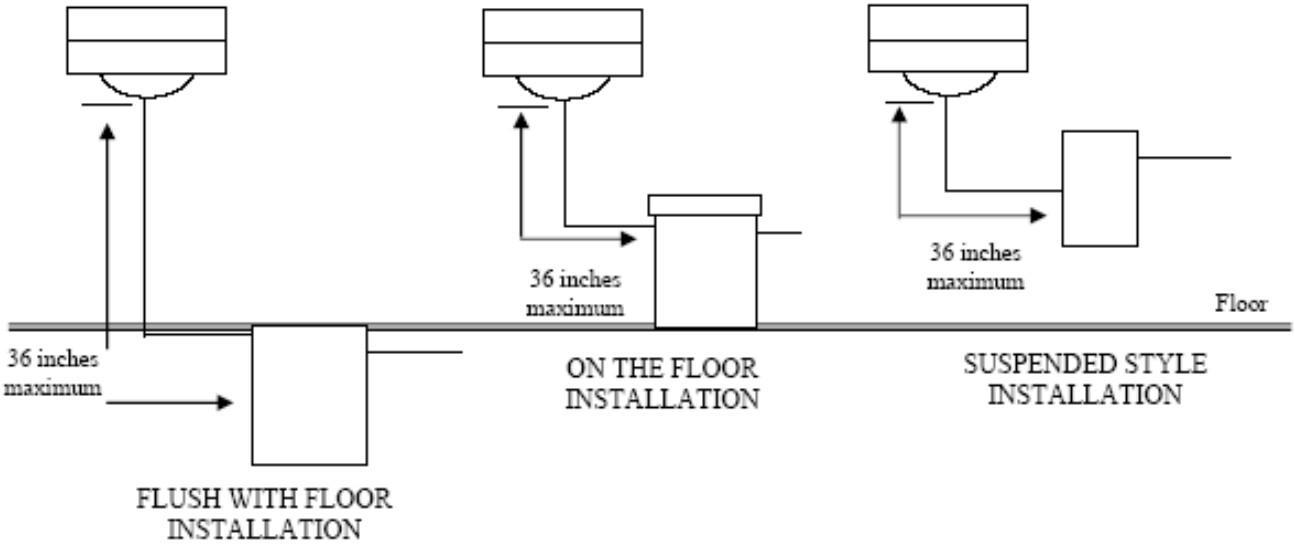


IN LINE LAUNDRY INTERCEPTOR

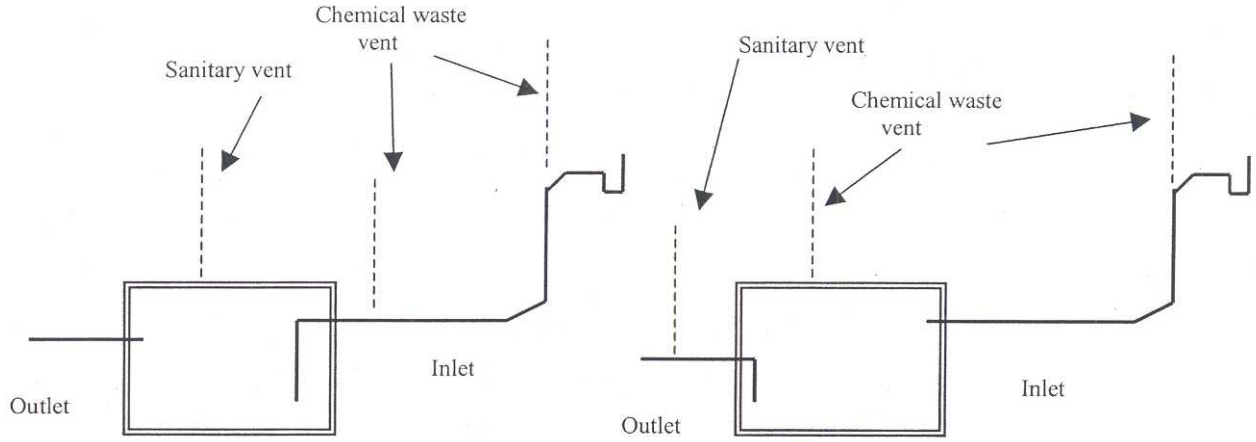
A−382.34 (8) OIL AND FLAMMABLE LIQUIDS INTERCEPTOR. Vents as shown must terminate independently.



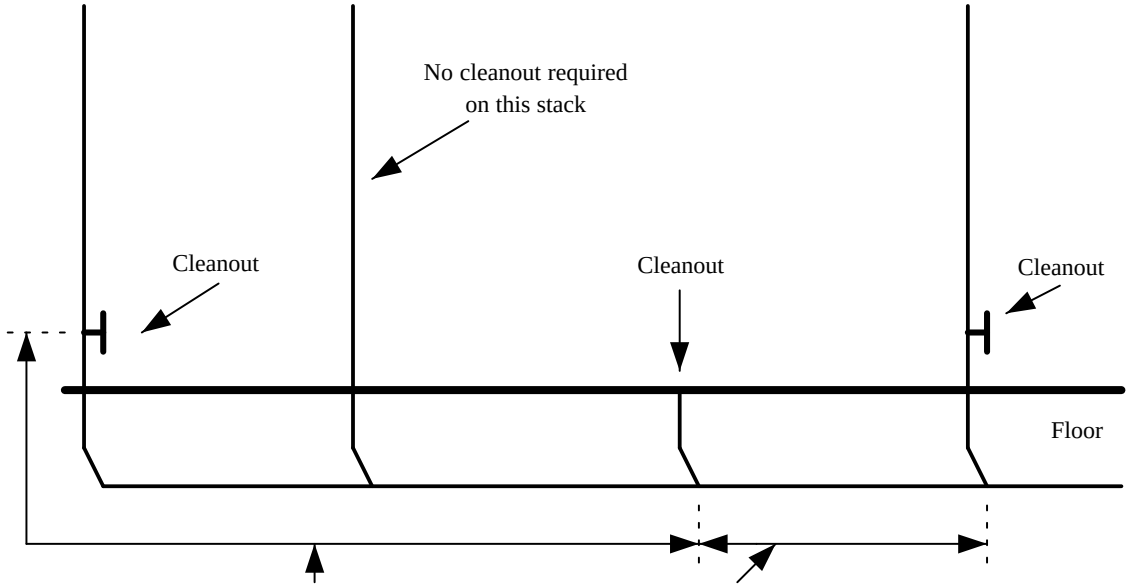
A−382.34 (13) PLASTER AND HEAVY SOLIDS TRAP TYPE INTERCEPTORS.



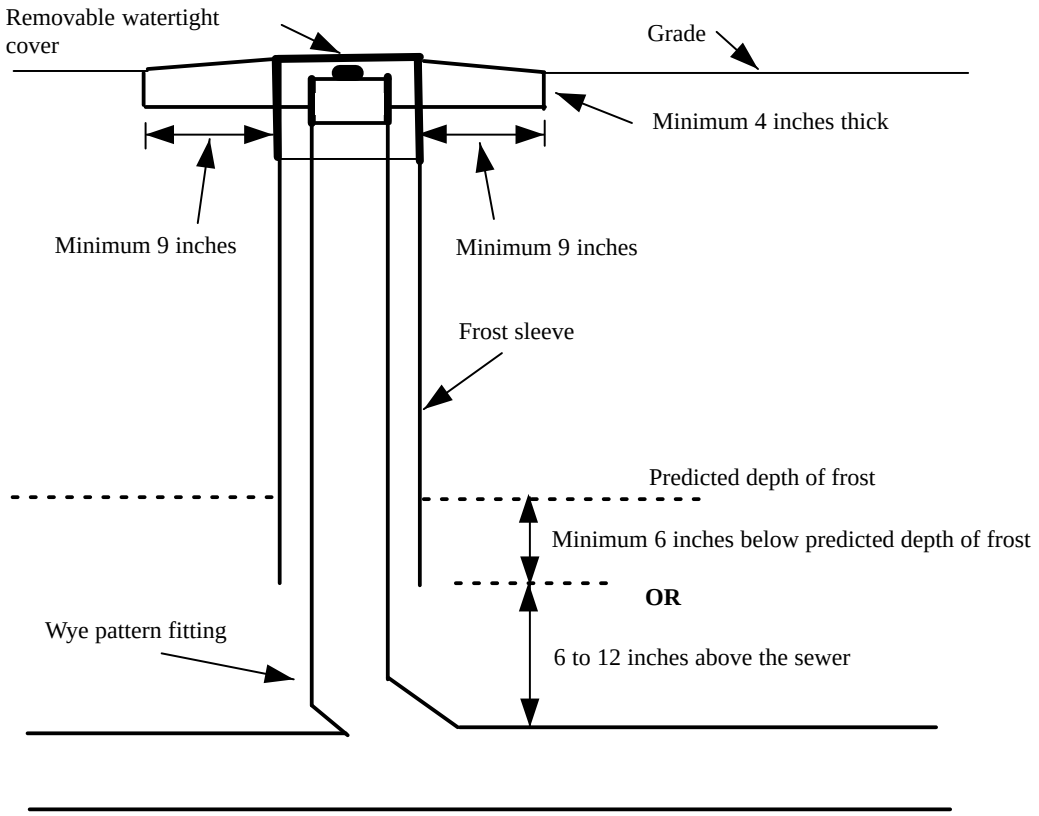
A−382.34 (14) CHEMICAL DILUTION AND NEUTRALIZING BASINS.

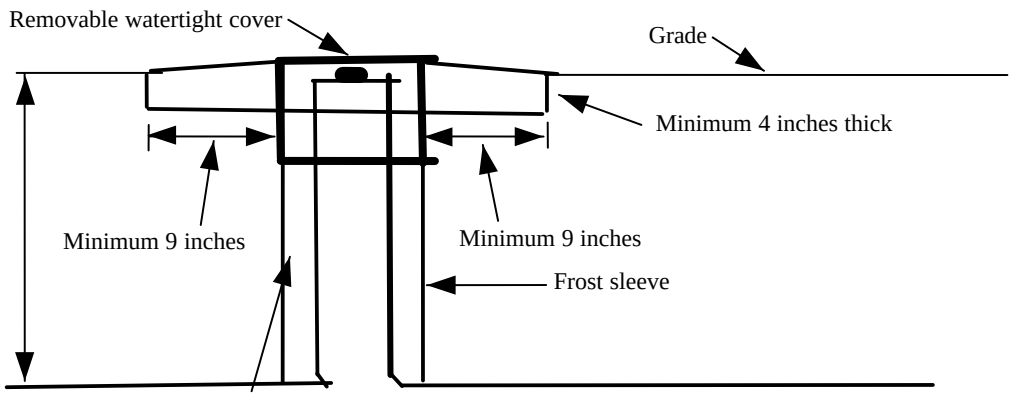


A−382.35 (3) CLEANOUTS SERVING HORIZONTAL DRAINS WITHIN OR UNDER A BUILDING.



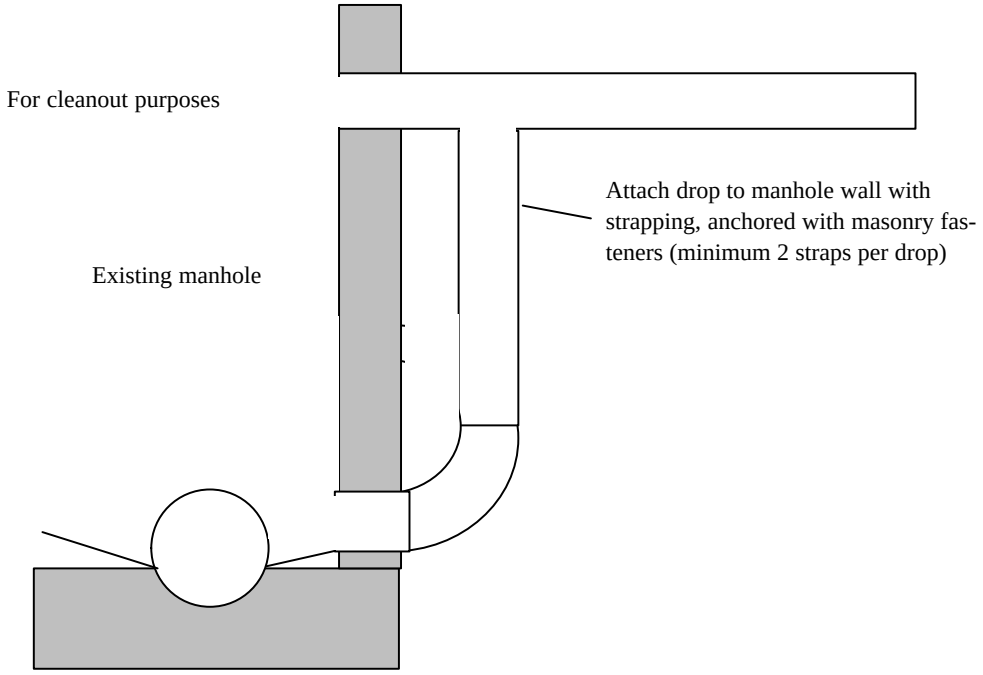
A−382.35 (5) (a) CLEANOUT EXTENSION TO GRADE.





If depth is 18 inches or less, this may be a sanitary pattern fitting

A−382.35 (8) OUTSIDE DROP INTO AN EXISTING MANHOLE.



A−382.36 (3) SOURCES OF POLLUTANTS IN WISCONSIN STORMWATER.

SOURCES OF POLLUTANTS IN WISCONSIN STORMWATER

Geometric Mean Concentrations of Contaminants in Runoff from Source−Area and Storm−Sewer Outfalls

Contaminant	Feeder Streets	Collector Streets	Arterial Streets	Lawns	Driveways	Roofs	Parking Lots	Outfall
	Residential Source Areas							
Total Solids (mg/L)	796	493	−	600	306	91	−	369
Suspended Solids (mg/L)	662	326	−	397	173	27	−	262
Total Phosphorus (mg/L)	1.31	1/07	−	2.67	1.16	.15	−	.66
Total Recoverable Copper (µg/L)	24	56	−	13	17	15		16
Total Recoverable Lead (µg/L)	33	55	−	−−	17	21	−	32
Total Recoverable Zinc (µg/L)	220	339	−	59	107	149	−	203
Fecal Coliform (cfu/100mL)	92,061	56,554	−	42,093	34,294	294	0	175,106
	Commercial Source Areas							
Total Solids (mg/L)	−	−−−	373	−	−	112	127	−−−
Suspended Solids (mg/L)	−	−−−	232	−	−	15	58	−−−
Total Phosphorus (mg/L)	−	−−−	.47	−	−	.20	.19	−−−
Total Recoverable Copper (µg/L)	−	−−−	46	−	−	9	15	−−−
Total Recoverable Lead (µg/L)	−	−−−	50	−	−	9	22	−−−
Total Recoverable Zinc (µg/L)	−	−−−	508	−	−	330	178	−−−
Fecal Coliform (cfu/100mL)	−	−−−	9,627	−	−	1,117	1,758	−−−
	Industrial Source Areas							
Total Solids (mg/L)	−	958	879	−−−	−	78	531	267
Suspended Solids (mg/L)	−	763	690	−−−	−	41	312	146
Total Phosphorus (mg/L)	−	1.5	.94	−−−	−	.11	.39	.34
Total Recoverable Copper (µg/L)	−	76	74	−−−	−	6	41	28
Total Recoverable Lead (µg/L)	−	86	60	−−−	−	8	38	25
Total Recoverable Zinc (µg/L)	−	479	575	−−−	−	1,155	304	265
Fecal Coliform (cfu/100mL)	−	8,338	4,587	−−−	−	144	2,705	5,114

Source: Bannerman, R.T.; Owens D.W.; Dodds, R.B.; and Hornewer, N.J., 1993, Sources of Pollutants in Wisconsin Stormwater: Water Science Technology, v.28, nos. 3−5, pp. 241−259.

Note: Single dash indicates source area is not in the land use; double dash indicates insufficient data; and triple dash indicates values are shared with those above for the same source area. The relatively large concentrations of zinc in roof runoff indicate that galvanized roofing materials were a source of the zinc. One−third of the residential roofs had galvanized downspouts. Roofing materials also might be a source of copper and lead in the runoff from residential roofs. Concentrations of dissolved copper and total recoverable copper and lead were slightly larger in the residential roof runoff than in runoff from driveways and lawns.

Note: The department has accepted that a “visible sheen” is defined as 15 mg/L grease and oil.

A−382.36 (3)−1. BEST MANAGEMENT PRACTICES (BMPs). A description of the proposed best management practices to be used for stormwater management in the protection of water quality include, but are not limited to, the following:

a. Detention, retention and sedimentation facilities, including plans for discharges from the facilities, maintenance plans and predictions of water quality.
b. Areas of the site to be used or reserved for infiltration including a prediction of the impact on groundwater quality.
c. Any other relevant volume controls or measures.
d. Any other relevant source control practices not described.
e. Any treatment device, including plans for discharges from the facilities, maintenance plans and predictions of water quality.

Note: Section NR 151.002 (4) reads: "'Best management practices' or 'BMPs' means structural or non−structural measures, practices, techniques or devices employed to avoid or minimize soil, sediment or pollutants carried in runoff to waters of the state."

A−382.36 (4)−1. RATIONAL METHOD. The equation procedure for using the rational method formula is as follows:

Q = Aci (in cubic feet per second)

Where: Q = Runoff (in cubic feet per second)
A = Drainage area (in acres)
c = Coefficient of runoff (a dimensionless number)
i = Intensity of rainfall (in inches per hour)

Q = (0.0104)ciA (in gallons per minute)
(1/96)ciA

Where: Q = Runoff (in gallons per minute)
c = Coefficient of runoff (a dimensionless number)
i = Intensity of rainfall (in inches per hour)
A = Drainage area (in square feet)

A−382.36 (4)−2. RUNOFF COEFFICIENTS. Tables Detail A and B are for using the rational formula.

DETAIL A: RUNOFF COEFFICIENTS (C), RATIONAL FORMULA

Land Use	Percent Imper-vious Area	Design Storm 24−Hour Event	Hydrologic Soil Group											
			A			B			C			D		
			Slope Range (%)			Slope Range (%)			Slope Range (%)			Slope Range (%)		
			0–2	2–6	> 6	0–2	2–6	> 6	0–2	2–6	> 6	0–2	2–6	> 6
Industrial	90	2− and 10−year	0.67	0.58	0.68	0.68	0.68	0.69	0.68	0.69	0.69	0.69	0.69	0.70
		25−, 50−, and 100−year	0.85	0.85	0.86	0.85	0.86	0.86	0.86	0.86	0.87	0.86	0.86	0.88
Commercial	95	2− and 10−year	0.71	0.71	0.72	0.71	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
		25−, 50−, and 100−year	0.88	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.90
Residential: gh−density (>6 units/ acre)	60	2− and 10−year	0.47	0.49	0.50	0.48	0.50	0.52	0.49	0.51	0.54	0.51	0.53	0.56
		25−, 50−, and 100−year	0.58	0.60	0.61	0.59	0.61	0.64	0.60	0.62	0.66	0.62	0.66	0.69
Medium−density (2–6 units/acre)	30	2− and 10−year	0.25	0.28	0.31	0.27	0.30	0.35	0.30	0.33	0.38	0.33	0.36	0.42
		25−, 50−, and 100−year	0.33	0.37	0.40	0.35	0.39	0.44	0.38	0.42	0.49	0.41	0.45	0.54
Low−density (0.7–2 units/ acre)	15	2− and 10−year	0.14	0.19	0.22	0.17	0.21	0.26	0.20	0.25	0.31	0.24	0.28	0.35
		25−, 50−, and 100−year	0.22	0.26	0.29	0.24	0.28	0.34	0.28	0.32	0.40	0.31	0.35	0.46
Agriculture	5	2− and 10−year	0.08	0.13	0.16	0.11	0.15	0.21	0.14	0.19	0.26	0.18	0.23	0.31
		25−, 50−, and 100−year	0.14	0.18	0.22	0.16	0.21	0.28	0.20	0.25	0.34	0.24	0.29	0.41
Open Space	2	2− and 10−year	0.05	0.10	0.14	0.08	0.13	0.19	0.12	0.17	0.24	0.16	0.21	0.28
		25−, 50−, and 100−year	0.11	0.16	0.20	0.14	0.19	0.26	0.18	0.23	0.32	0.22	0.27	0.39
Freeways and Expressways	70	2− and 10−year	0.57	0.59	0.60	0.58	0.60	0.61	0.59	0.61	0.63	0.60	0.62	0.64
		25−, 50−, and 100−year	0.70	0.71	0.72	0.71	0.72	0.74	0.72	0.72	0.73	0.76	0.75	0.78

Source: Wisconsin department of transportation (WDOT), Facilities Development Manual (July 2, 1979), Procedure 13−10−5.

DETAIL B: RUNOFF COEFFICIENTS (C), FOR SPECIFIC LAND USE

Land Use	Design Storm 24−Hour Event	Hydrologic Soil Group											
		A			B			C			D		
		Slope Range (%)			Slope Range (%)			Slope Range (%)			Slope Range (%)		
		0–2	2–6	> 6	0–2	2–6	> 6	0–2	2–6	> 6	0–2	2–6	> 6
Row Crops	2− and 10−year	0.08	0.16	0.22	0.12	0.20	0.27	0.15	0.24	0.33	0.19	0.28	0.38
	25−, 50−, and 100−year	0.22	0.30	0.38	0.16	0.34	0.44	0.30	0.37	0.50	0.34	0.41	0.56
Median Strip, turf	2− and 10−year	0.19	0.20	0.24	0.19	0.22	0.26	0.20	0.23	0.30	0.20	0.25	0.30
	25−, 50−, and 100−year	0.24	0.26	0.30	0.25	0.28	0.33	0.26	0.30	0.37	0.27	0.32	0.40
Slide Slope, turf	2− and 10−year	−−	−−	0.25	−−	−−	0.27	−−	−−	0.28	−−	−−	0.30
	25−, 50−, and 100−year	−−	−−	0.32	−−	−−	0.34	−−	−−	0.36	−−	−−	0.38
Pavement:													
Asphalt	0.70–0.95												
Brick	0.70–0.80												
Concrete	0.80–0.95												
Drives and Walks	0.75–0.85												
Roofs	0.75–0.95												
Gravel Roads Shoulders	0.40–0.60												

Source: Wisconsin department of transportation (WDOT), Facilities Development Manual (July 2, 1979), Procedure 13−10−5.

Note: The lower "C" values in each range should be used with the relatively low intensities associated with 2− to 10−year design recurrence intervals whereas the higher "C" values should be used for intensities associated with the longer 25− to 100−year design recurrence intervals.

Note: In parking lot runoff, visible sheen has been accepted as having an oil concentration of 15 mg/L.

A−382.36 (4)−3. OTHER METHODS OR MODELS. A model that calculates peak flow such as TR−55, P8 or an equivalent methodology may be used.

Information on how to access P8 is available at the department of natural resources webpage: http://dnr.wi.gov/runoff/models/ or contact the stormwater coordinator in the runoff management section of the bureau of watershed management at the department of natural resources at phone 608−267−7694.

A simplified TR−55 approach, TR−55 (210−vf−TR−55, second edition, June 1986), may be obtained by accessing the USDA NRCS webpage: http://dnr.wi.gov/runoff/models/.

A−382.36 (6)−1. THE FORMULA FOR SOLVING FOR DIAMETER, D FOR ROOF CONDUCTORS.

$$D=1.128\sqrt{\frac{A}{X}}$$

Where, A=the area of the roof in square feet.

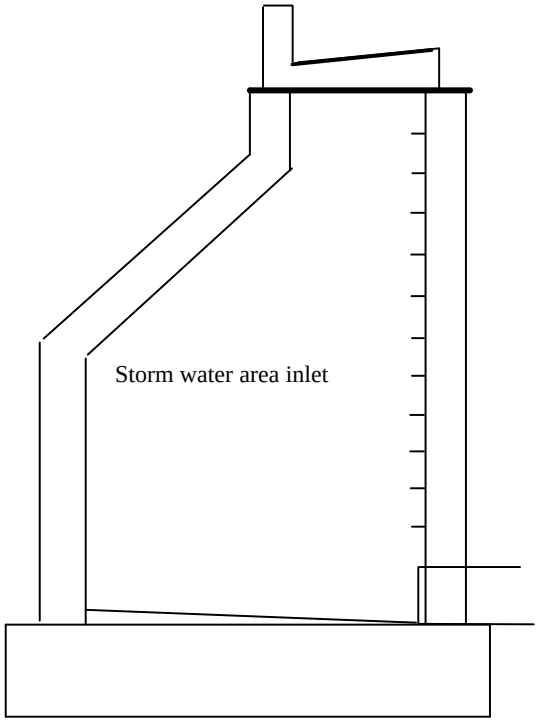
X=one of the following:

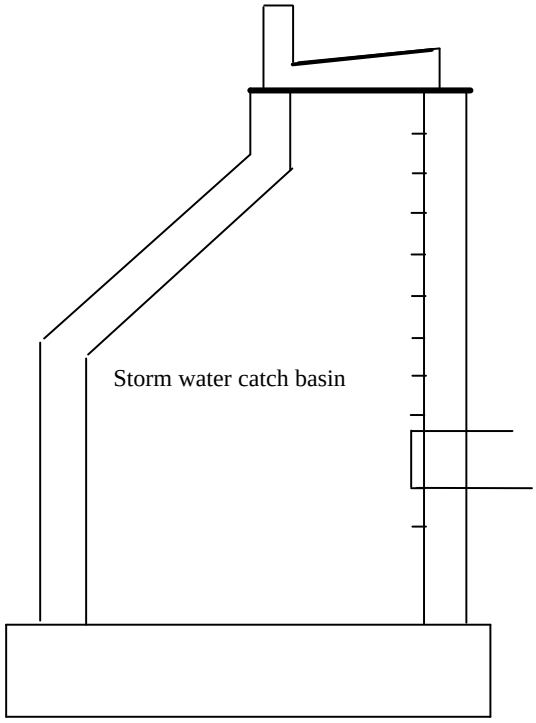
300 square feet per square inch for a roof covered with gravel or slag and with a pitch not exceeding ¼ inch per foot.

250 square feet per square inch for a roof covered with gravel or slag and with a pitch of greater than ¼ inch per foot.

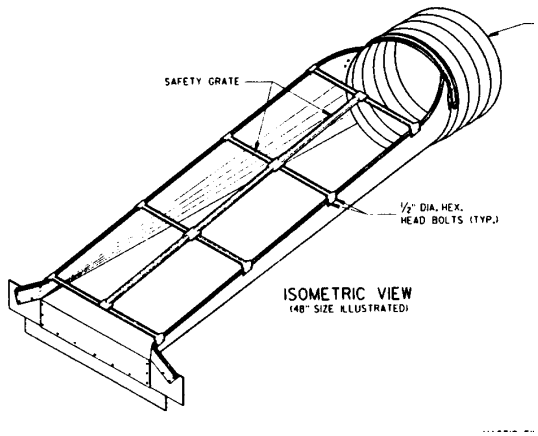
200 square feet per square inch for a roof with a metal, tile, brick or slate covering and with any pitch.

A−382.36 (9) (b) AREA DRAIN INLETS.

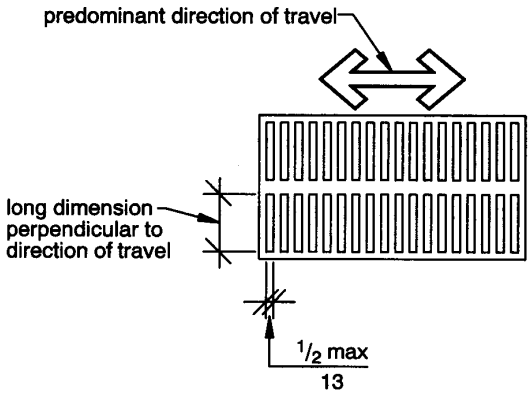




A−382.36 (9) (b) 3. INLET GRATES.



GRATES FOR HORIZONTAL PIPING



GRATES FOR VERTICAL PIPING

FORMULA TO CALCULATE CAPACITY, IN CUBIC FEET PER SECOND:

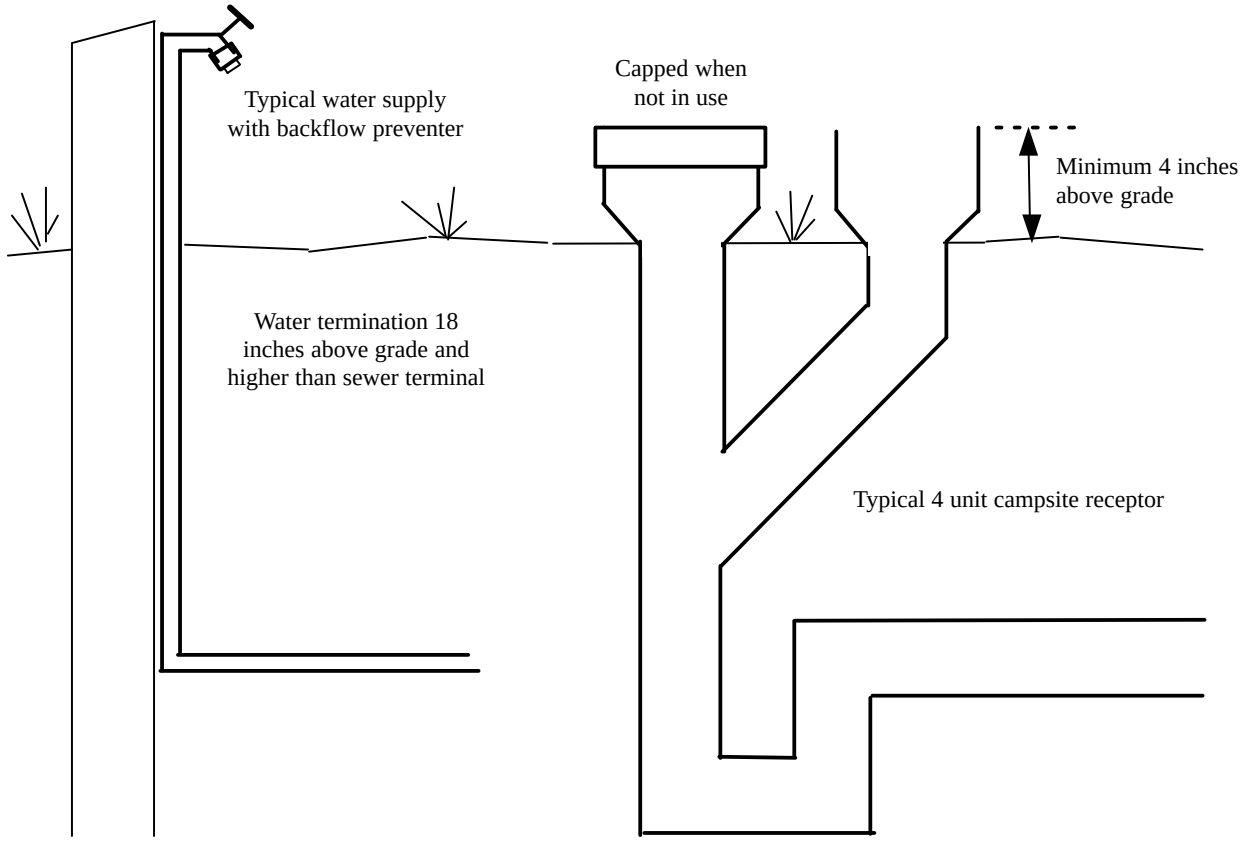
$$Q = 2/3\ A\ C\ (2gh)^{1/2}$$

Where:
- Q = the capacity of the inlet, cfs
- 2/3 = a factor to correct for assumed blockage of 1/3 of the inlet's net open area
- A = the net open area of the inlet, sq. ft
- C = an orifice coefficient, usually taken as 0.60
- G = a constant, 32.2 ft/sec/sec
- H = the head, in feet on the inlet, or the depth of water on top of the inlet, usually not more than two or three inches.

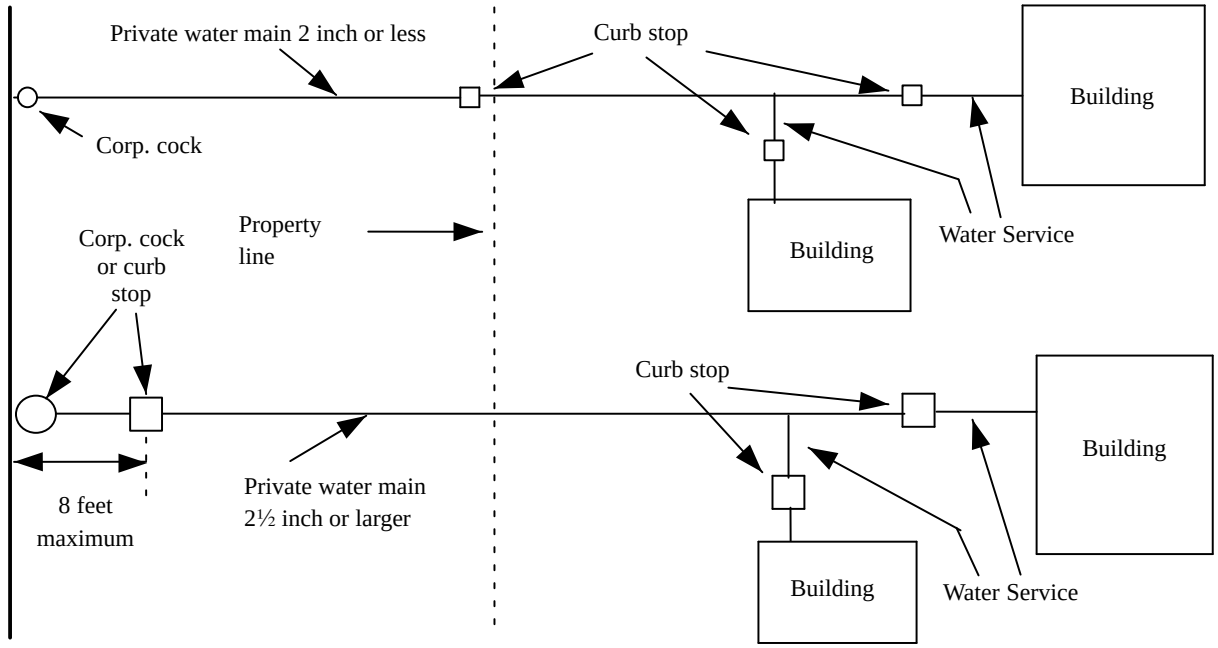
A−382.365 (1) CLASS V INJECTION WELLS. An injection well is described as being any well, drilled or dug hole, used to inject fluids into the subsoil. A stormwater collection well may be a class V injection well.

Federal regulations (40 CFR 144.26) require that all injection wells be reported to the state underground injection control (UIC) program authority for the purpose of developing a state inventory of injection practices. In Wisconsin, the department of natural resources, bureau of drinking water and groundwater, maintains this inventory and registration program, form 3300−253. For more information, refer to www.dnr.state.wi.us/.

A−382.37 (3) CAMPSITE RECEPTORS AND WATER SUPPLY



A−382.40 (4) CONTROL VALVES.



Maximum Allowable Load For PVC Sched. 80, ASTM 1785, (½ to 2 inches)

Press. Loss due to friction A-value	½ inch				¾ inch				1 inch				1¼ inches				1½ inches				2 inches			
	GPM	Vel. ft/sec	WSFU FM	WSFU FT	GPM	Vel. ft/sec	WSFU FM	WSFU FT	GPM	Vel. ft/sec	WSFU FM	WSFU FT	GPM	Vel. ft/sec	WSFU FM	WSFU FT	GPM	Vel. ft/sec	WSFU FM	WSFU FT	GPM	Vel. ft/sec	WSFU FM	WSFU FT
0.5	0.77	1	---	0.5	1.7	1.2	---	1.5	3.5	1.5	---	3.5	7	1.7	---	9	11	2	4	16	21.6	2.3	7	33
1	1.1	1.5	---	1	2.5	1.8	---	2.5	5	2.2	---	6	10.5	2.6	4	14	16	2.9	5	23	32	3.4	17	60
2	1.6	2.2	---	1.5	3.7	2.7	---	3.5	7.1	3.1	---	9	15.5	3.8	5	21	23.5	4.2	7	39	46	5	40	87
3	2	2.7	---	2	4.6	3.4	---	4.5	9	4	---	12	19	4.7	6	29	29.4	5.3	12	55	57	6.2	69	160
4	2.4	3.2	---	2	5.3	3.9	---	6	10.5	4.6	4	14	22.3	5.5	7	31	34.2	6.2	19	60	67	7.3	97	210
5	2.7	3.6	---	2.5	6	4.4	---	7	11.8	5.2	4	16	25.3	6.3	8	40	38.4	6.9	25	80	75.4	8	134	251
6	2.9	3.9	---	2.5	6.6	4.9	---	8	13	5.7	4	18	27.7	6.9	10	49	42.1	7.6	32	100				
7	3.2	4.3	---	3	7.2	5.3	---	9	14.1	6.2	4	20	30.1	7.5	12	55	45.8	8	39	112				
8	3.4	4.6	---	3	7.7	5.7	---	9	15	6.6	5	21	32.3	8	16	60								
9	3.7	5	---	3.5	8.2	6	---	10	16	7.1	5	22												
10	3.9	5.3	---	3.5	8.7	6.4	---	10	17	7.6	5	23												
11	4.1	5.6	---	4	9.2	6.8	---	12	17.9	8	5	26												
12	4.3	5.8	---	4	9.6	7.1	---	13																
13	4.5	6.1	---	4.5	10.1	7.5	4	14																
14	4.7	6.4	---	4.5	10.5	7.8	4	14																
15	4.8	6.5	---	4.5	10.8	8	4	15																
16	5	6.8	---	6																				
17	5.2	7.1	---	6																				
18	5.3	7.2	---	6																				
19	5.5	7.5	---	6.5																				
20	5.7	7.8	---	6.5																				
21	5.8	7.9	---	6.5																				
22	5.9	8	---	6.5																				
Per 100 feet of length																								

The Wisconsin Administrative Code on this web site is current through the last published Wisconsin Register. See also Are the Codes on this Website Official?

Maximum Allowable Load For PVC Sched. 80, ASTM 1785, (2½ to 6 inches)

Press. Loss due to friction A-value	2½ inches				3 inches				3 ½ inches				4 inches				5 inches				6 inches			
			WSFU				WSFU				WSFU				WSFU				WSFU				WSFU	
	GPM	Vel. ft/sec	FM	FT	GPM	Vel. ft/sec	FM	FT	GPM	Vel. ft/sec	FM	FT	GPM	Vel. ft/sec	FM	FT	GPM	Vel. ft/sec	FM	FT	GPM	Vel. ft/sec	FM	FT
0.5	35	2.6	20	70	64	3.1	87	195	92	3.3	200	335	130	3.6	425	527	237	4	1,226	1,226	380	4.6	2,546	2,546
1	51	3.8	50	130	91	4.4	196	330	134	4.8	450	550	188	5.2	835	855	344	6	2,213	2,213	569	7	4,647	4,647
2	74	5.6	125	245	132	6.4	436	536	195	7	885	900	274	7.6	1,564	1,564								
3	92	6.9	200	330	164	8	654	717																
4	108	8	288	415																				
Per 100 feet of length																								

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Maximum Allowable Load for Schedule 80 CPVC ASTM F 441 Pipe (⅜ to 2 inches)

Press. Loss due to Friction A-Value	⅜ inch				½ inch				¾ inch				1 inch				1¼ inch				1½ inches				2 inches			
			WSFU				WSFU				WSFU				WSFU				WSFU				WSFU				WSFU	
	GPM	Vel. ft/sec	FM	FT	GPM	Vel. ft/sec	FM	FT	GPM	Vel. ft/sec	FM	FT	GPM	Vel. ft/sec	FM	FT	GPM	Vel. ft/sec	FM	FT	GPM	Vel. ft/sec	FM	FT	GPM	Vel. ft/sec	FM	FT
0.5	0.36	0.8	---	0.25	0.5	0.7	---	0.5	0.6	1.1	---	0.5	3.2	1.5	---	3	6.9	1.8	---	8	10.5	2	4	14	20.7	2.3	6	31
1	0.5	1.2	---	0.5	1	1.5	---	1	2.4	1.8	---	2	4.7	2.1	---	4.5	10	2.6	4	13	15.2	2.9	5	22	30.1	3.4	13	55
2	0.75	1.8	---	0.5	1.5	2.2	---	1.5	3.5	2.7	---	2.5	6.7	3.1	---	8	14.5	3.8	4	20	22.2	4.2	7	35	43.8	4.9	36	106
3	0.97	2.3	---	1	1.7	2.4	---	1.5	4.3	3.3	---	4	8.3	3.8	---	10	18.1	4.7	6	26	27.6	5.2	10	49	54.5	6.1	60	147
4	1.1	2.7	---	1	1.8	2.6	---	1.5	5	3.9	---	6	9.7	4.5	---	12	21.1	5.5	7	32	32.2	6	16	60	63.7	7.1	85	193
5	1.24	3	---	1	2.5	3.6	---	2.5	5.7	4.4	---	6.5	11	5.1	4	15	23.8	6.2	7	39	36.4	6.8	22	74	71.8	8	115	234
6	1.37	3.3	---	1	2.7	3.9	---	2.5	6.2	4.8	---	7	12.1	5.6	4	16	26.3	6.8	9	45	40.1	7.5	30	87				
7	1.5	3.7	---	1.5	2.95	4.3	---	3	6.7	5.2	---	8	13.1	6.1	4	18	28.5	7.4	11	51	42.7	8	34	102				
8	1.6	3.9	---	1.5	3.2	4.6	---	3	7.25	5.6	---	9	14.1	6.5	4.5	20	30.8	8	14	56								
9	1.7	4.1	---	1.5	3.4	4.9	---	3	7.75	6	---	9	15	7	5	21												
10	1.8	4.4	---	1.5	3.6	5.2	---	3.5	8.3	6.4	---	10	15.9	7.4	5	23												
11	1.9	4.6	---	1.5	3.7	5.4	---	3.5	8.7	6.7	---	11	16.8	7.8	5	24												
12	2	4.9	---	2	3.9	5.7	---	3.5	9	7	---	12	17.2	8	5	25												
13	2.08	5.1	---	2	4.1	6	---	4	9.4	7.3	---	12																
14	2.16	5.3	---	2	4.3	6.3	---	4	9.8	7.6	4	13																
15	2.24	5.5	---	2	4.4	6.4	---	4	10.2	8	4	13																
16	2.32	5.7	---	2	4.6	6.7	---	5																				
17	2.4	5.9	---	2	4.8	7	---	5																				
18	2.47	6	---	2	5	7.3	---	6																				
19	2.55	6.2	---	2.5	5.1	7.4	---	6																				
20	2.63	6.4	---	2.5	5.2	7.6	---	6																				
21	2.71	6.6	---	2.5	5.3	7.7	---	6																				
22	2.78	6.8	---	2.5	5.5	8	---	6.5																				
25	3	7.3	---	3																								
30	3.25	8	---	3																								
Per 100 feet of Length																												

The Wisconsin Administrative Code on this web site is current through the last published Wisconsin Register. See also Are the Codes on this Website Official?

Maximum Allowable Load for Schedule 80 CPVC ASTM F 441 Pipe (2½ to 10 inches)

Press. Loss due to Friction A-Value	2½ inches				3 inches				4 inches				6 inches				8 inches				10 inches			
			WSFU				WSFU				WSFU				WSFU				WSFU				WSFU	
	GPM	Vel. ft/sec	FM	FT	GPM	Vel. ft/sec	FM	FT	GPM	Vel. ft/sec	FM	FT	GPM	Vel. ft/sec	FM	FT	GPM	Vel. ft/sec	FM	FT	GPM	Vel. ft/sec	FM	FT
0.5	33.2	2.6	17	64	59.8	3	74	174	125	3.5	393	500	366	4.6	2,416	2,416	768	5.5	7,134	7,134	1,393	6.3	14,756	14,756
1	48.3	3.8	44	121	87	4.3	180	310	181	5.2	784	817	533	6.7	4,117	4,117	1,116	8	11,378	11,378				
2	70.2	5.5	108	226	126	6.3	400	505	281	8	1,629	1,629												
3	87.4	6.8	181	312	157	7.8	600	677																
4	102	8	255	385																				
Per 100 feet of Length																								

Note: CPVC 3inches and larger only approved for cold water.

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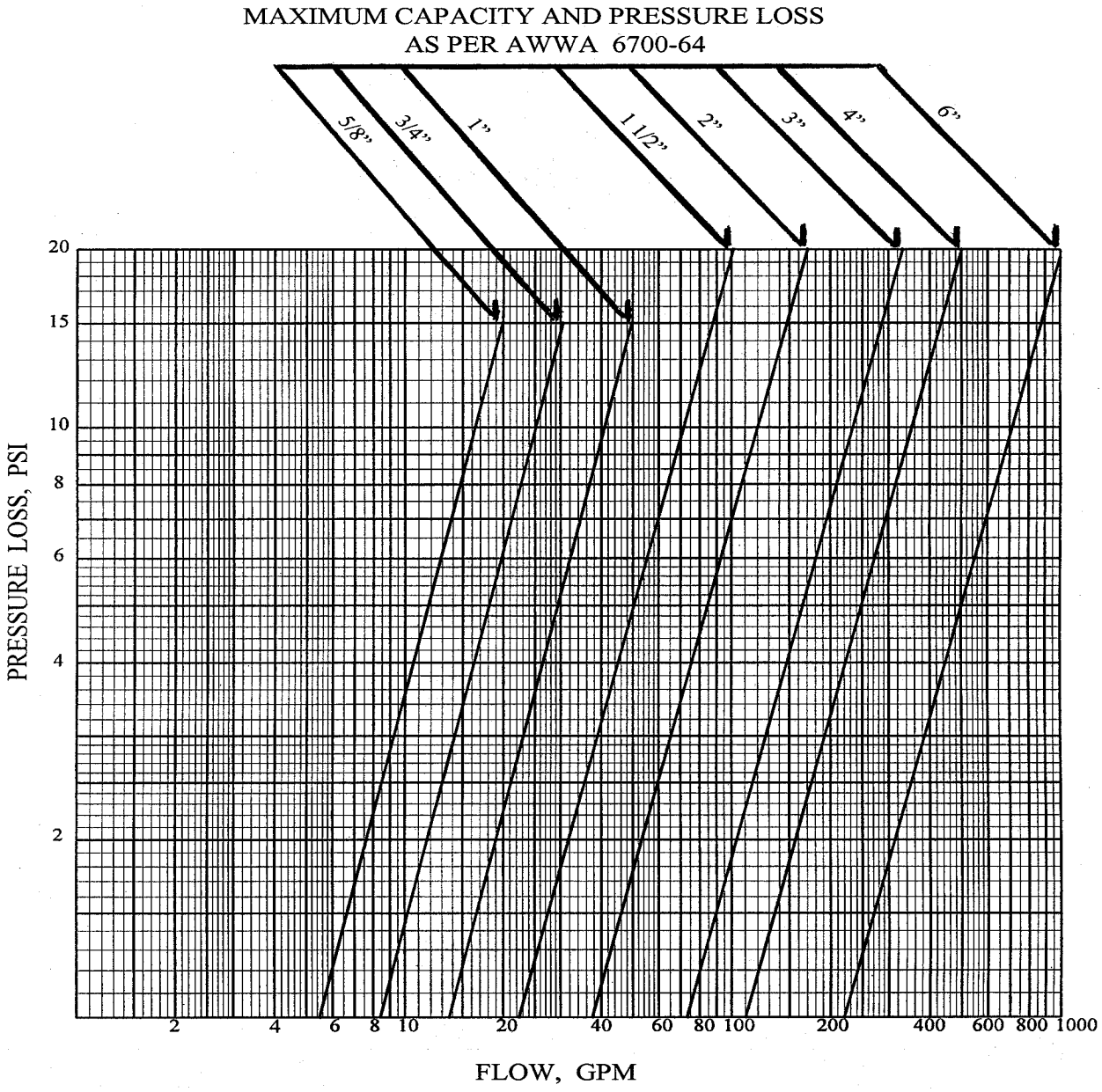
A−382.40 (7) (a) METHODOLOGY.

Where equipment such as an instantaneous or tankless water heater, water treatment device, water meter, and backflow preventer is provided in the design, the friction loss in such equipment, corresponding to the GPM demand, should be determined from the manufacturer or other reliable source.

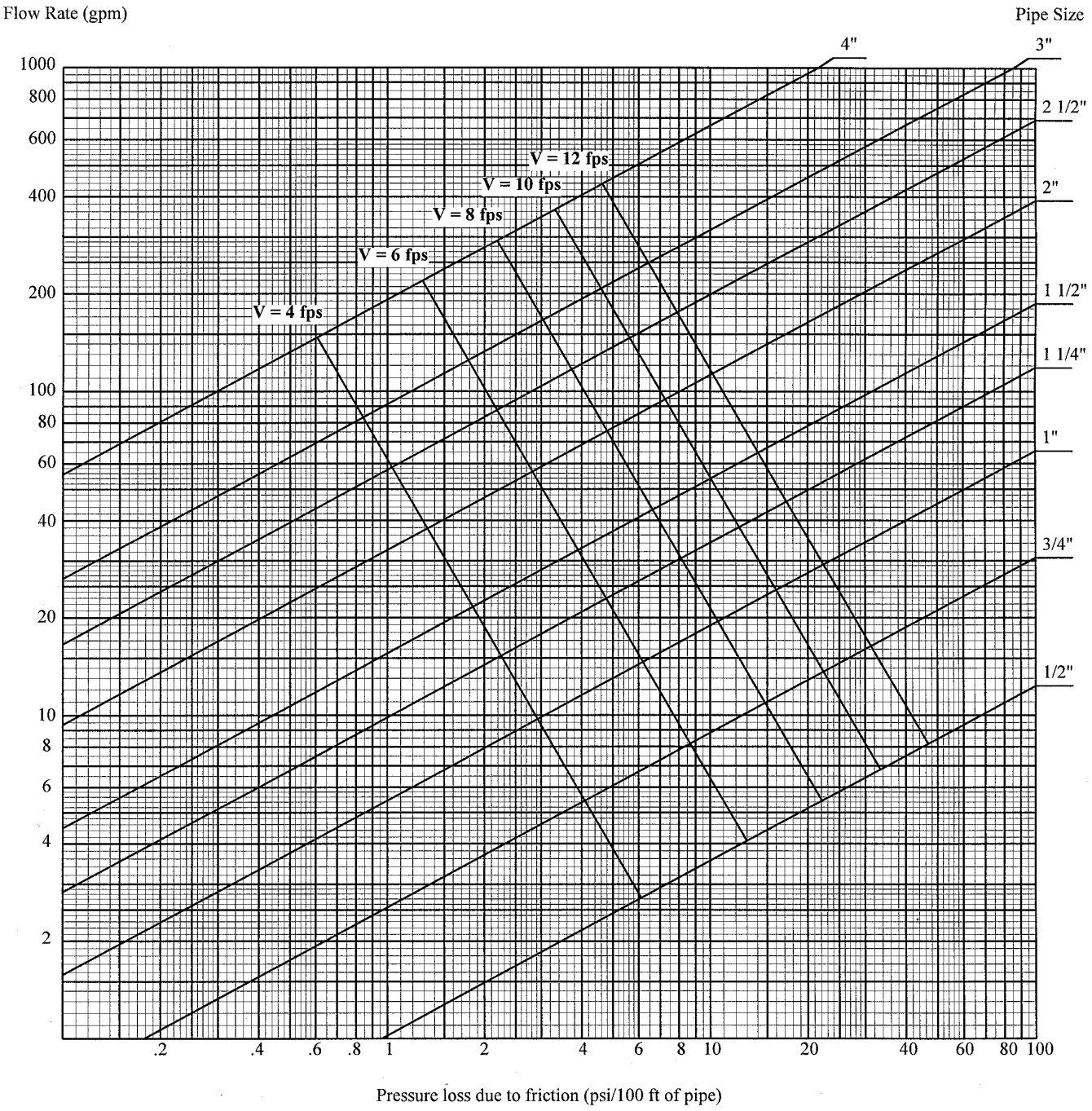
Where a direct fired pressurized tank type water heater is provided in the design, the friction loss for such equipment can be assumed as part of the pressure losses due to flow through piping, fittings, valves and other plumbing appurtenances when the developed length of piping is multiplied by 1.5.

The pressure losses due to flow friction through displacement type cold−water meters may be calculated from Graph A−382.40 (7)−1.

Graph A−382.40 (7)−1
PRESSURE LOSS IN COLD−WATER METERS, DISPLACEMENT TYPE



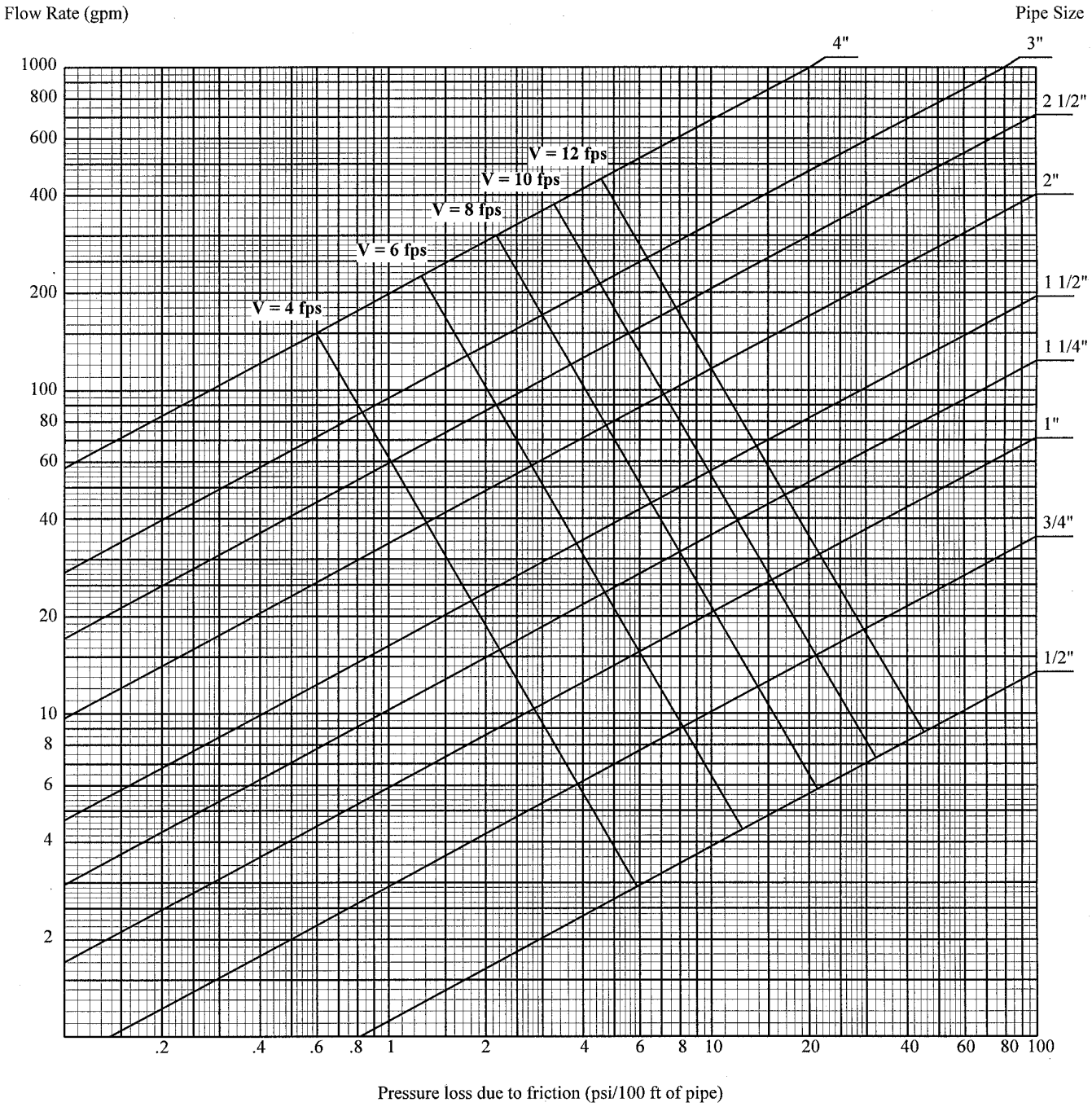
Graph A−382.40 (7)−2
PRESSURE LOSSES DUE TO FLOW FRICTION
Material: Copper Tube−Type K, ASTM B88; (C = 150)



Graph A−382.40 (7)−3

PRESSURE LOSSES DUE TO FLOW FRICTION

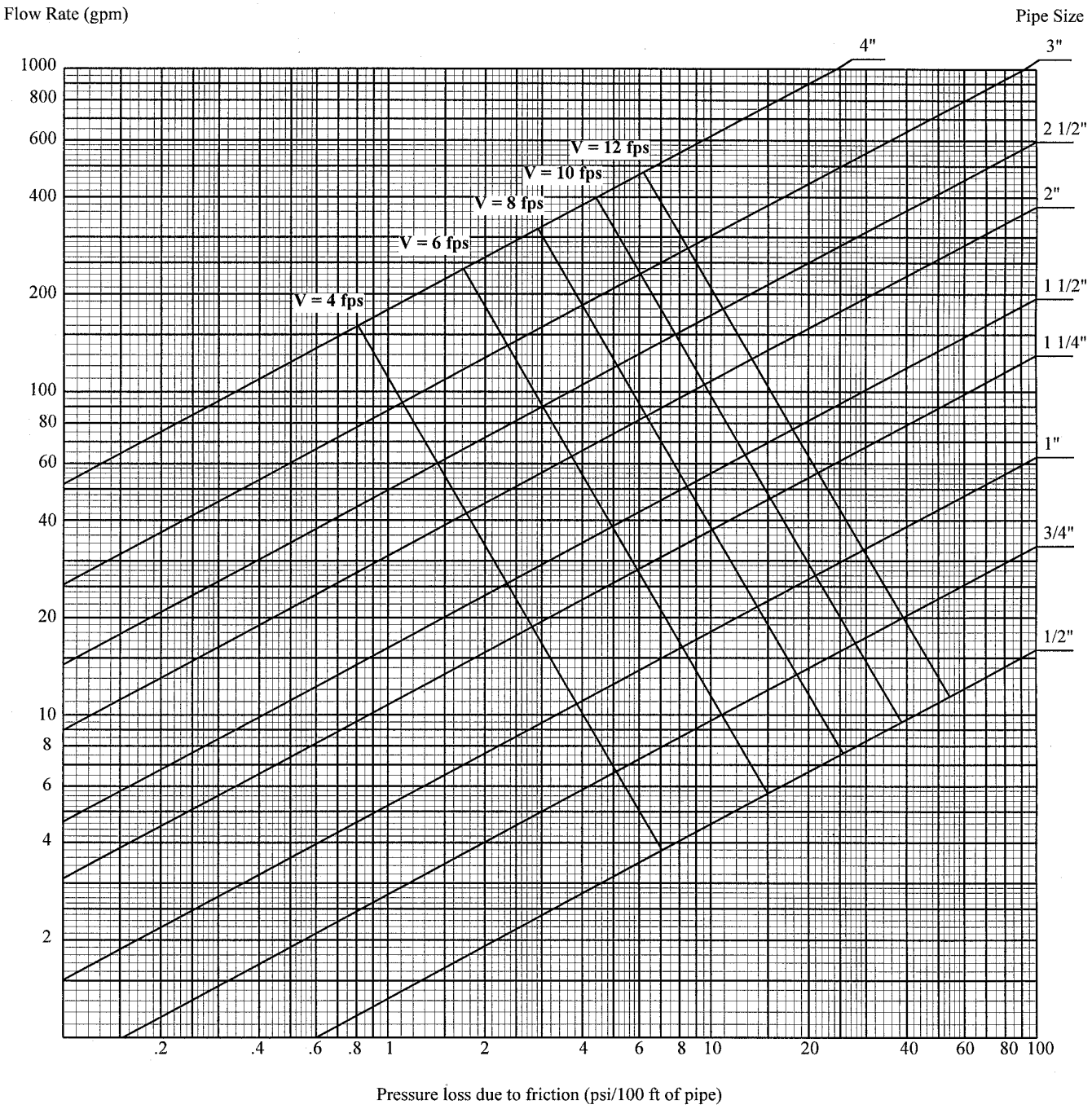
Material: Copper Tube−Type L, ASTM B88; (C = 150)



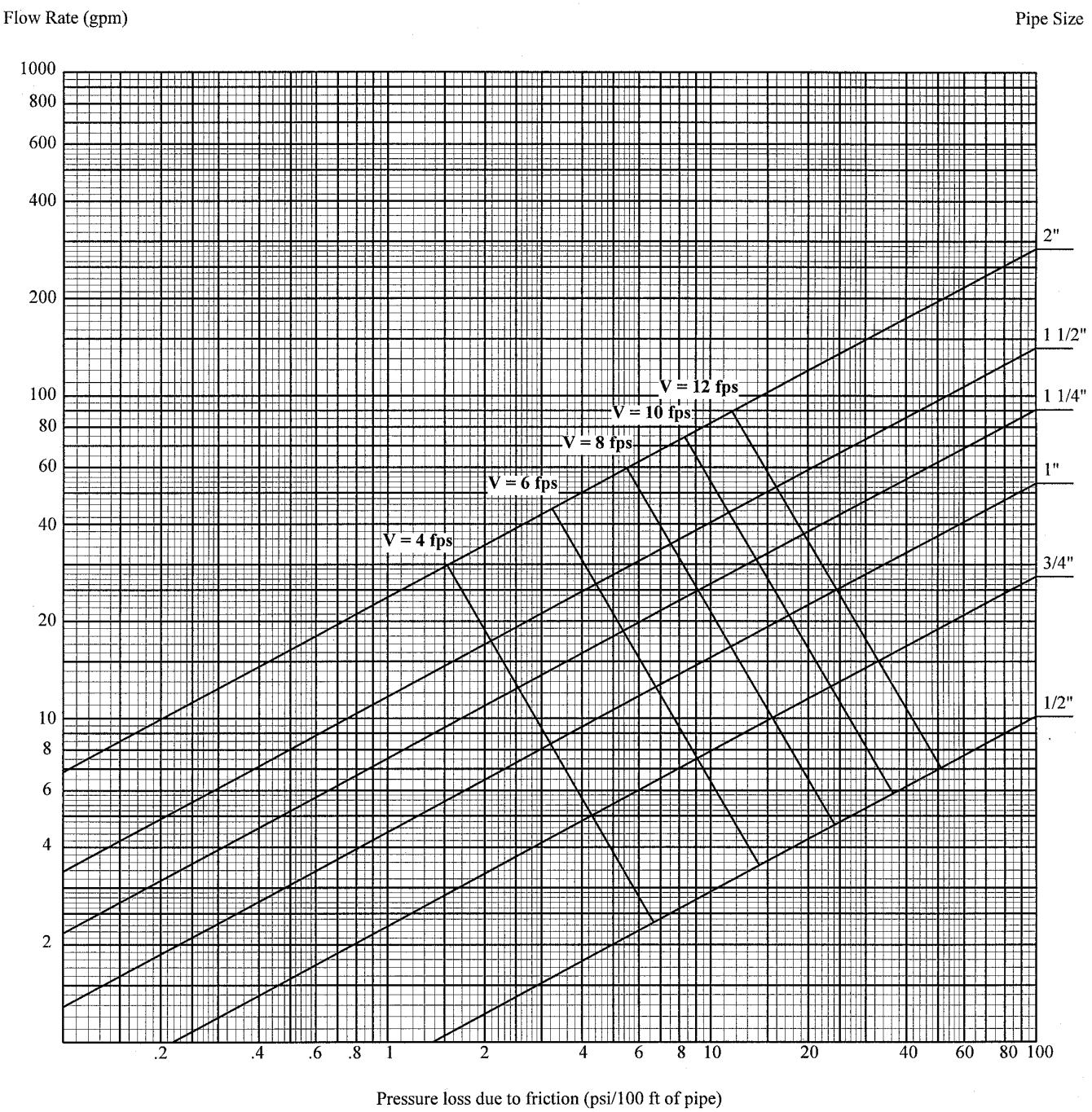
Graph A−382.40 (7)−4

PRESSURE LOSSES DUE TO FLOW FRICTION

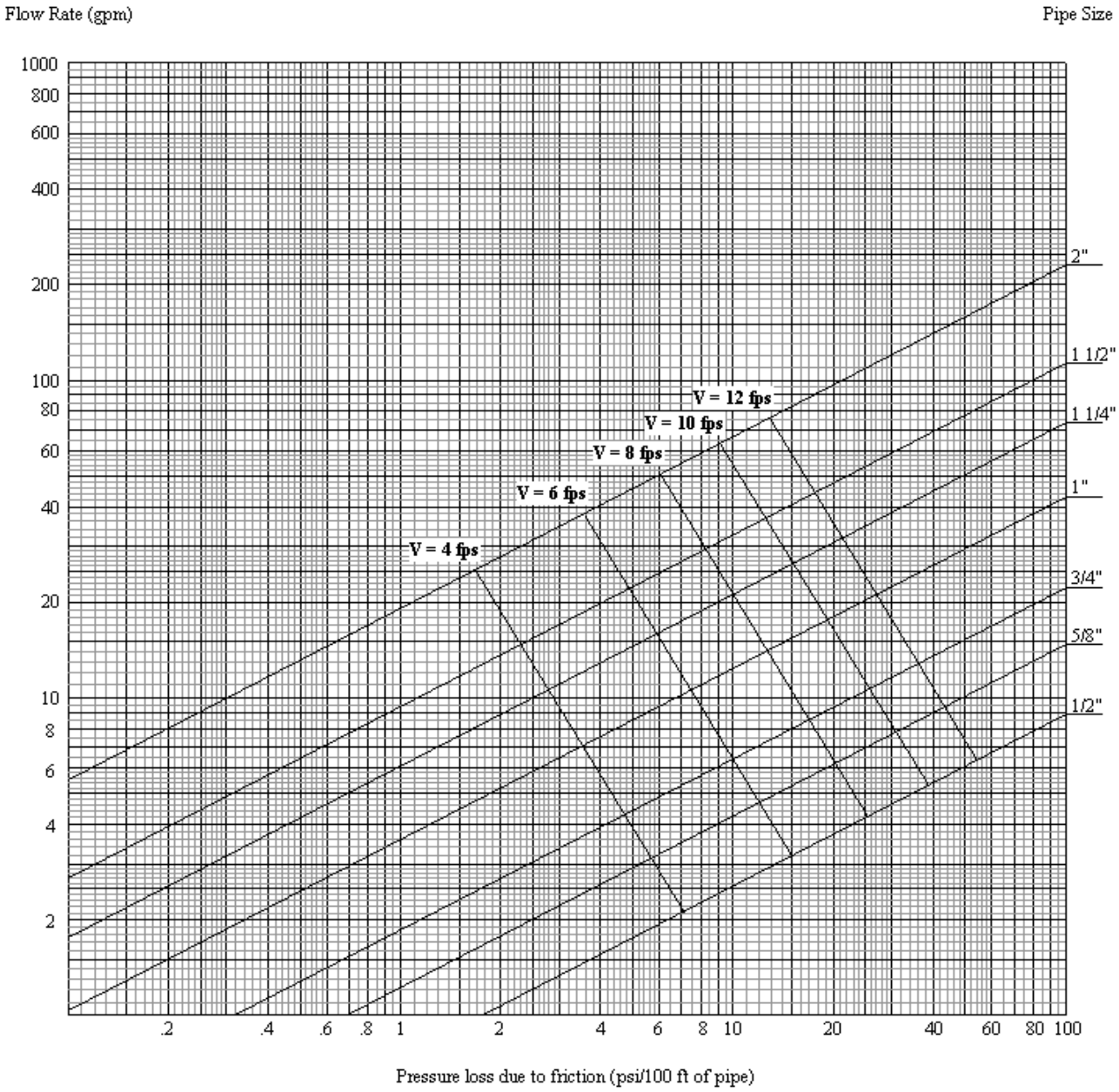
Material: Galvanized Steel Pipe−Schedule 40, ASTM A53, ASTM A120; (C = 125)



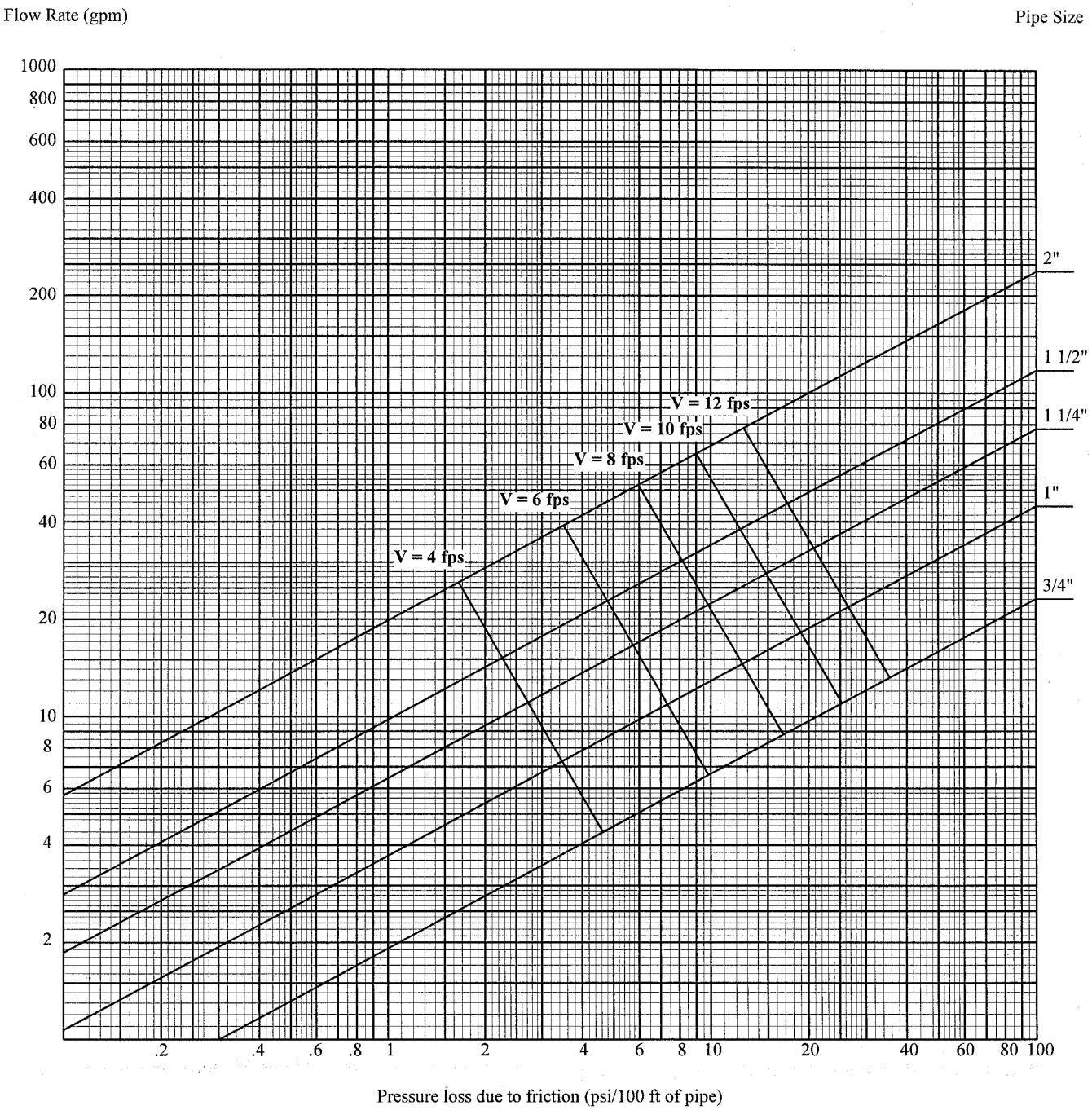
Graph A−382.40 (7)−5
PRESSURE LOSSES DUE TO FLOW FRICTION
Material: Polybutylene Tubing, ASTM D3309; or CPVC Tubing, ASTM D2846; (C = 150)



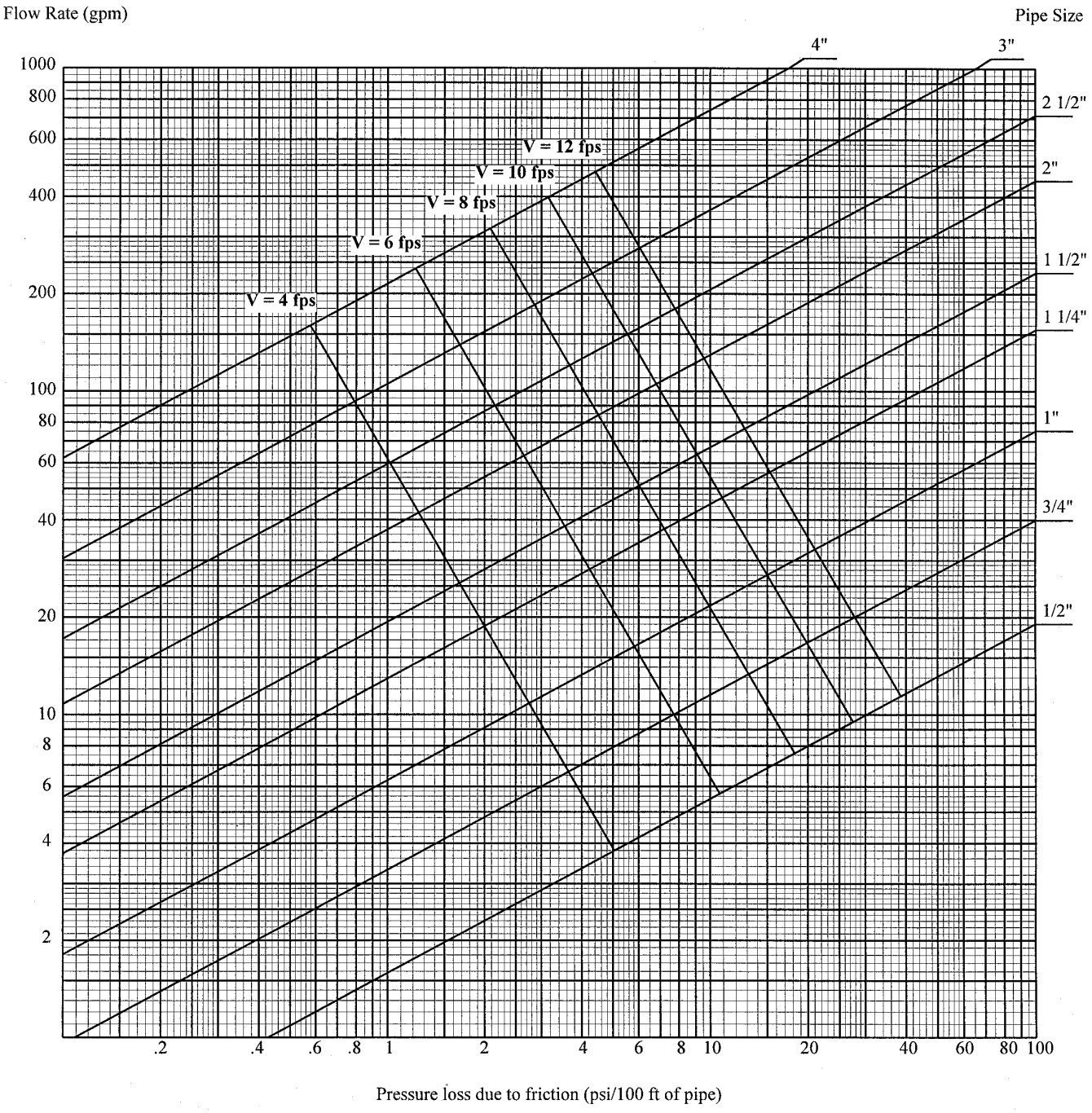
Graph A−382.40 (7)−6
PRESSURE LOSSES DUE TO FLOW FRICTION
Material: Crosslinked Polyethylene (PEX) Tubing, ASTM F876; (C = 150)



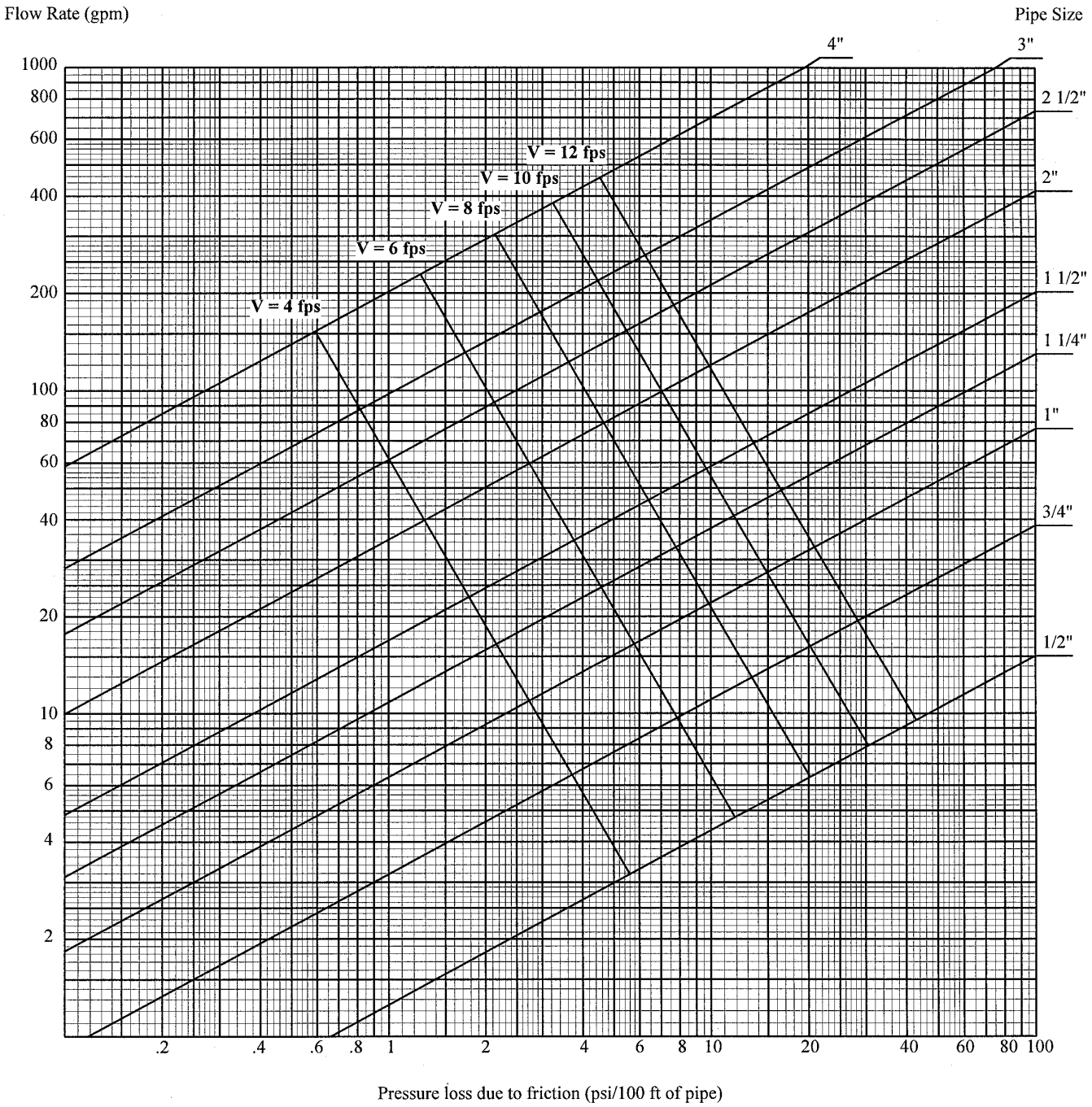
Graph A−382.40 (7)−7
PRESSURE LOSSES DUE TO FLOW FRICTION
Material: Polyethylene Tubing, Copper Tube Size, ASTM D2737; (C = 150)



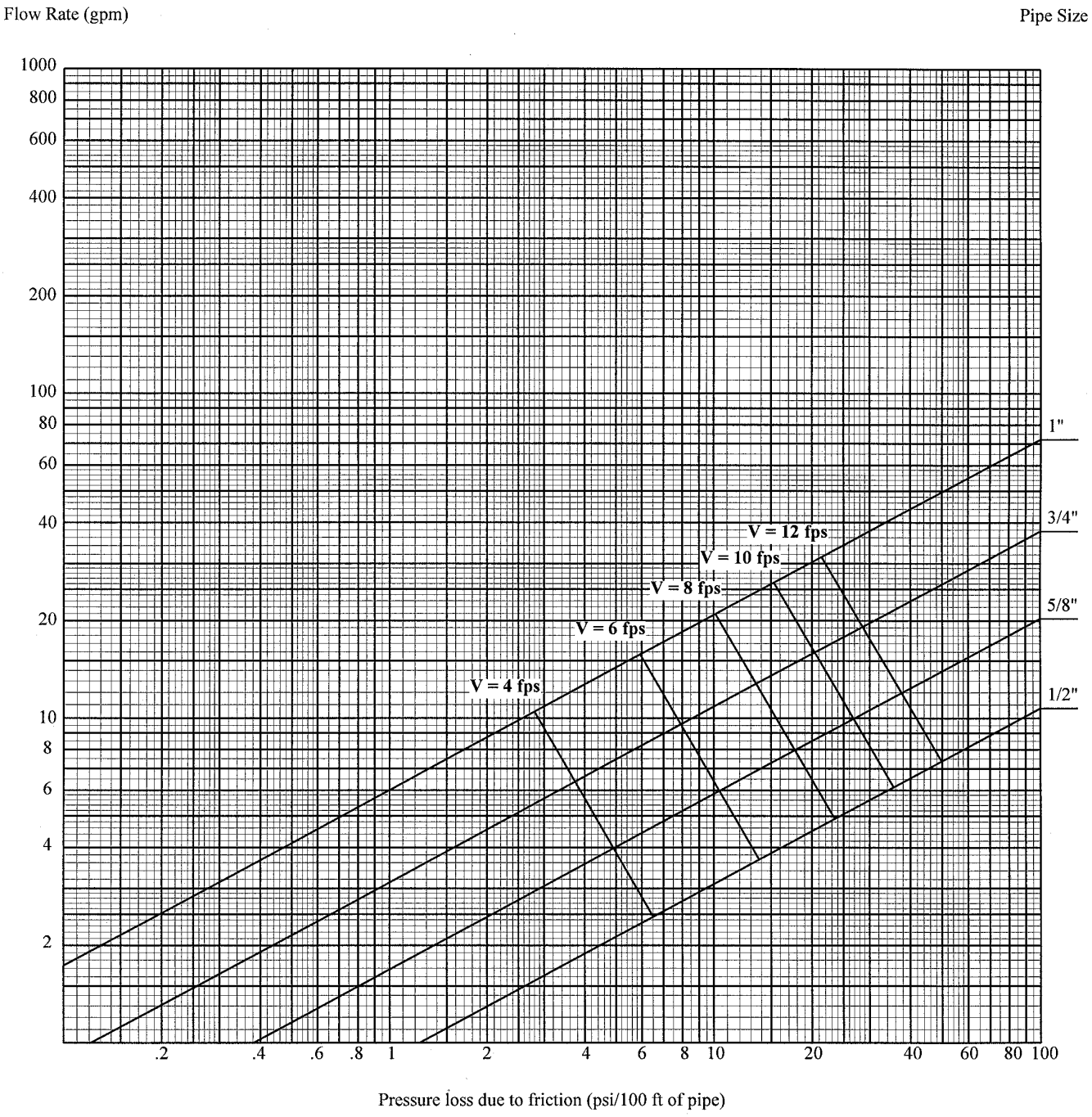
Graph A−382.40 (7)−8
PRESSURE LOSSES DUE TO FLOW FRICTION
Material: ABS Pipe−Schedule 40; ASTM D1527; or
CPVC Pipe−Schedule 40; ASTM F441; or
PE Pipe−Schedule 40; ASTM D2104; ASTM D2447; or
PVC Pipe−Schedule 40; ASTM D1785; ASTM D2672; (C =150)



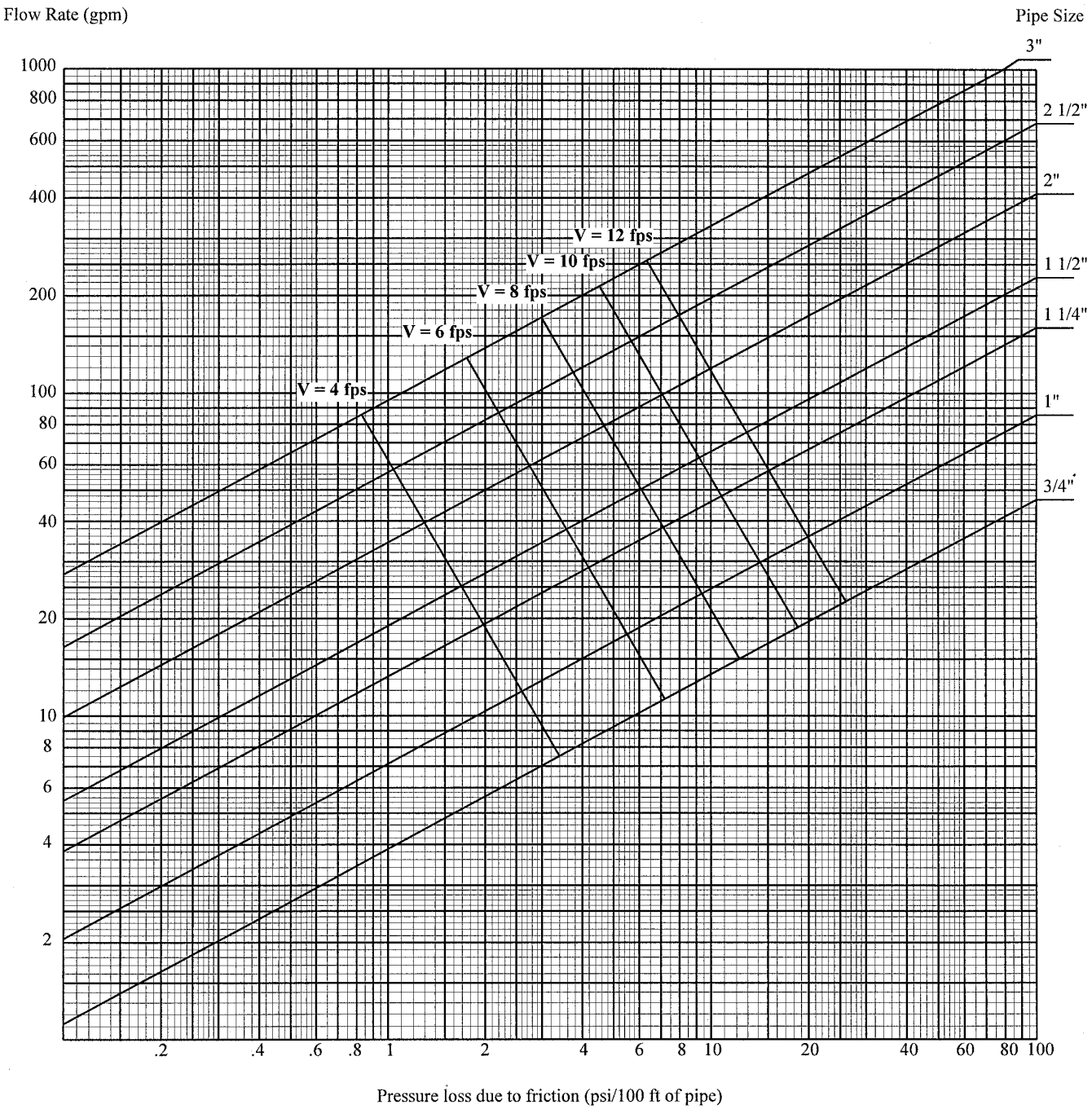
Graph A−382.40 (7)−9
PRESSURE LOSSES DUE TO FLOW FRICTION
Material: Copper Tube−Type M, ASTM B88; (C = 150)



Graph A−382.40 (7)−10
PRESSURE LOSSES DUE TO FLOW FRICTION
Material: Polyethylene Aluminum Polyethylene Tubing (PexAlPex), ASTM F1281; (C = 150)



Graph A−382.40 (7)−11
PRESSURE LOSSES DUE TO FLOW FRICTION
Material: CPVC Tubing, SDR 13.5; ASTM F442; (C = 150)



A−382.41 (3) CROSS CONNECTION CONTROL HISTORY.

CROSS CONNECTION CONTROL HISTORY TABLE

Application	Date	Code or Interpretation
Atmospheric vacuum breaker installation	1954	4 inch elevation above flood level of fixtures
	1979	6 inch elevation above flood level of fixtures
Shampoo Sinks	1977	ASSE 1001 6 inches above the flood level rim ASSE 1013 or ASSE 1012 serving several sinks
	3/1/94	Individual CCC required for each sink ASSE 1001 6 inches above highest point of use (19 inches) ASSE 1013 or ASSE 1056 12 inches above highest use ASSE 1014 approved faucet
Boilers	1977	ASSE 1012 for low pressures: 15 psig steam 30 psig water
	February 1986	ASSE 1012 for boilers: Pressure ≤ 160 psig Rated working temperature ≤ 250 degrees Actual temperature ≤ 160 Pressure relief valve set at 30 psig max. Non−toxic additives Must not be in a hospital (hospital boilers require ASSE 1013)
	3/1/94	ASSE 1012 for low pressure (same) and non−toxic in mixed condition ASSE 1013 for high pressure or toxic
	12/1/04	Chemical pot feeder creates high hazard situation automatically
Laundry trays	1977	Residential – no CCC required on hose threads Commercial – ASSE 1001 required at 7′6″
	1987	Residential without hose threads – no additional device required Residential with hose threads – AS‘SE 1011 Commercial – ASSE 1001 @ 7′6″or ASSE 1011
	3/1/94	Residential without hose threads – no additional device required Residential with hose threads – ASSE 1011, ASSE 1001 @ 7′6″ or ASSE 1052 Commercial – used for building maintenance with or without hose threads, same as residential with hose threads
Hose bibb for maintenance	1987	ASSE 1011 or ASSE 1001 @ 7′6″
	3/1/94	ASSE 1011 or ASSE 1019
Hose reels	1977	ASSE 1001 with stipulations or ASSE 1013
	3/1/94	ASSE 1020 (exterior only) with stipulations ASSE 1056 with stipulations or ASSE 1013
Sink overhead	1987	ASSE 1012 **or** Spring making cross connection impossible
Heat exchangers	1986	Double wall draining to atmosphere with toxic heat transfer fluids Single wall when non−toxic heat transfer fluids
Yard hydrants	July 1987	Sanitary hydrant with ASSE 1011 **or** ASSE 1012 serving only that hydrant and label hydrant as “non−potable” and hose threads protected with ASSE 1011
	9/1/01	Must be sanitary hydrant **without below ground bleed**
ASSE 1012	3/1/94	Limited to low degree of hazard

Application	Date	Code or Interpretation
ASSE 1019	3/1/94	Exterior wall hydrants must be frost proof and self draining The backflow protection must be integral to the hydrant
Dental units	October 1987	ASSE 1012 for each individual dental unit
	3/1/94	ASSE 1013 (high hazard designation)
Existing fire protection	2/1/94	Allow existing CCC to remain unless increase in diameter of H2O dist, or remove or replace CCC

A−382.41 (5) (a) AIR−GAP. An air−gap for cross connection control for water supply systems conforming to ASME 112.1.2.

Section SPS 381.01 (7) reads: "'Air−gap, water supply system,' means the unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank or plumbing fixture and the flood level rim or spill level of the receptacle."

A pipe/spout that terminates with its outlet above the flood level rim of a receptacle/fixture:

1. Shall terminate a minimum of one inch above the flood level rim of the receptacle/fixture, or
2. Shall terminate a minimum distance of two times the diameter of the effective opening from the end of the pipe/spout to the flood level rim of the receptacle/fixture.

Note: In any case, **regardless** if the end of the pipe/spout is cut square or at an angle, the air−gap is the distance between the lowest end of the pipe/spout and the flood level rim of the receptacle/fixture**.**

The following water supply air−gap, although the least desirable, is acceptable to the ASME 112.1.2 standard. A pipe/spout that terminates with its outlet completely below the flood level rim of a receptacle/fixture:

1. Must have an opening in the receptacle/fixture that discharges to the atmosphere through an air−gap.
2. This air−gap must be located as close as possible to the receptacle/fixture.
3. The rate of discharge through this opening as compared to the rate of water entering the receptacle/fixture establishes a "spill level" that is the level at which water entering the receptacle/fixture seeks a balance and does not raise any higher. (A level is established where the flow of water entering equals the flow of water exiting.)
4. The distance then, between this established "spill level" and the end of the lowest water supply pipe/spout, is the air−gap.
5. The minimum air−gap ("Y") is the distance between the supply pipe/spout and the "spill level" established in the receptacle/fixture.
6. The "spill level" shall be a distance no greater that one half of the distance measured as "Y," (½ "Y") above the discharge opening in the receptacle/fixture. Therefore, the air−gap between the supply pipe/spout and the highest portion of the opening that discharges to the atmosphere shall be a distance no greater than one and one half "Y" (1 ½ "Y").

Note: In any case, **regardless** if the end of the pipe/spout is cut square or at an angle, the air−gap is the distance between the lowest end of the pipe/spout and the "spill level" of the receptacle/fixture.

The measurement for this air−gap, however, could be as much as 3 times the diameter of the pipe/spout depending upon the number of near walls. The distance of a near wall is a relationship to the diameter of the pipe/spout and the measurement from the wall to the closest side of the pipe/spout:

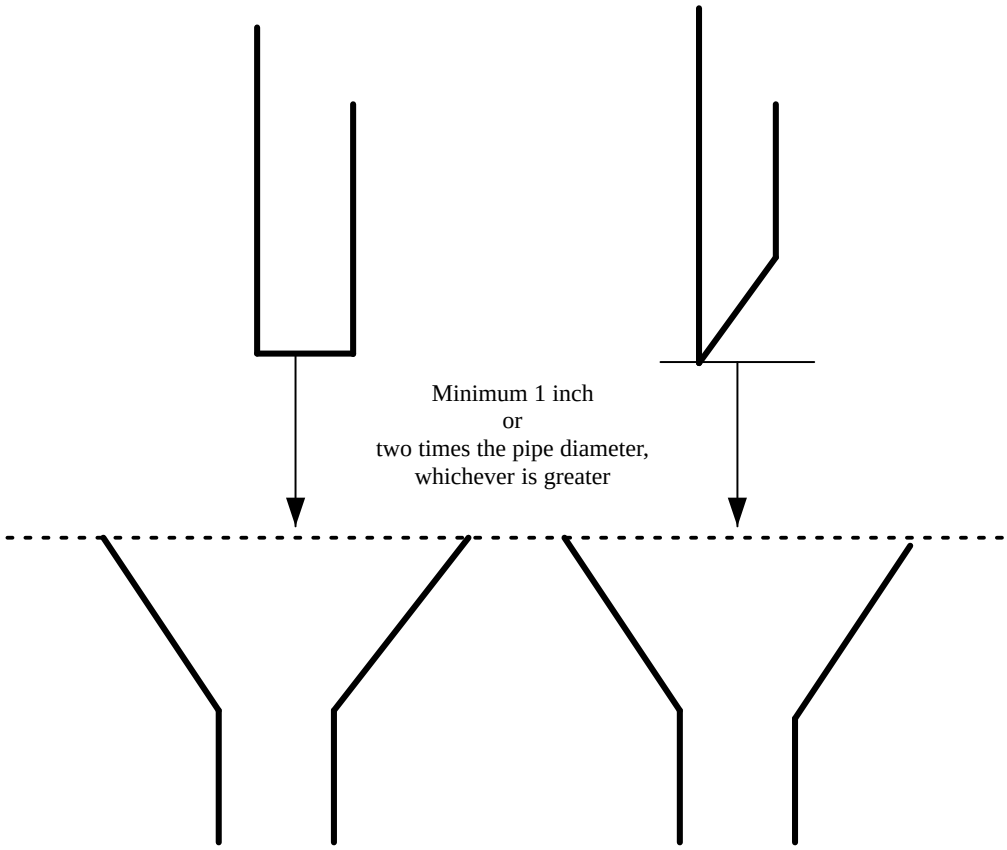
1. If there is one near wall, and the distance between that near wall and the closest edge of the supply pipe/spout is greater than 3 times the diameter of the supply pipe/spout, then the minimum air−gap is 2 times the diameter of the supply pipe/spout.
2. If there is one near wall, and the distance to the closest edge of the supply pipe/spout is less than 3 times the diameter of the pipe/spout, then the minimum air−gap is 3 times the diameter of the supply pipe/spout.

3. If there are 2 near walls, and the distance between the near wall(s) and closest edge of the supply pipe/spout is greater than 4 times the diameter of the supply pipe/spout, then the minimum air−gap is 2 times the diameter of the supply pipe/spout.
4. If there are 2 near walls, and the distance to the closest edge of the supply pipe/spout is less than 4 times the diameter of the supply pipe/spout, then the minimum air−gap is 3 times the diameter of the supply pipe/spout.

It has been determined that 2 or more near walls generally have little effect on the need to increase the air−gap to more than 3 times the diameter of the supply pipe/spout.

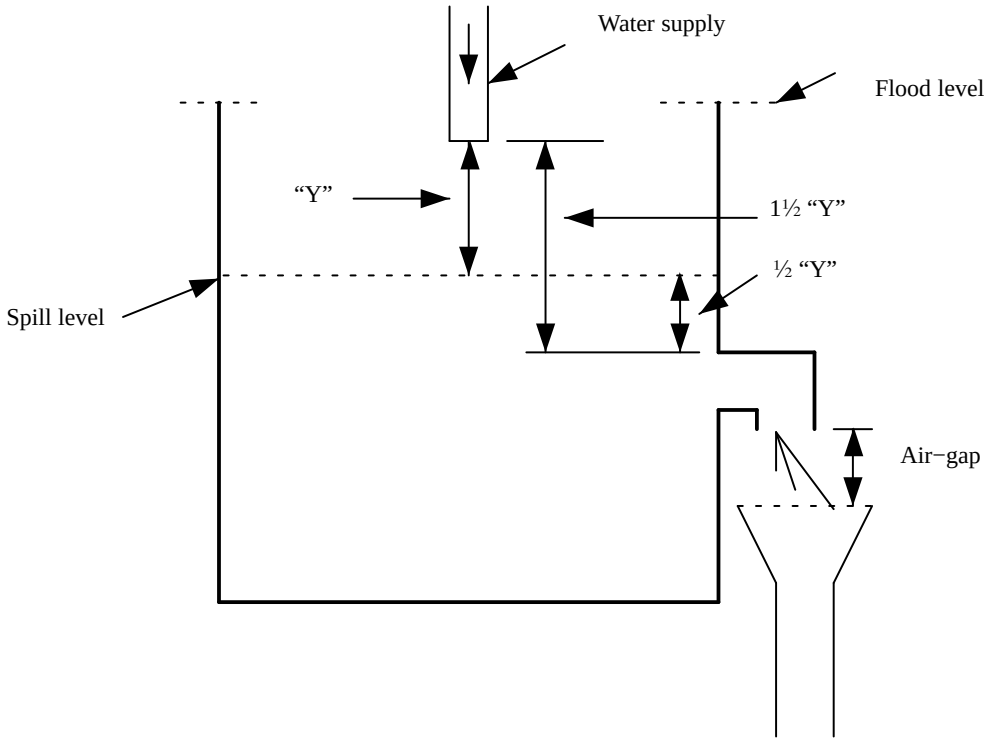
Note: See the following sketches as examples of an air−gap with pipe/spouts terminating above the flood level rim of the receptacle/fixture, of an air−gap with pipe/spouts terminating below the flood level rim of the receptacle/fixture and of an air−gap with pipe/spouts when terminating by one near wall.

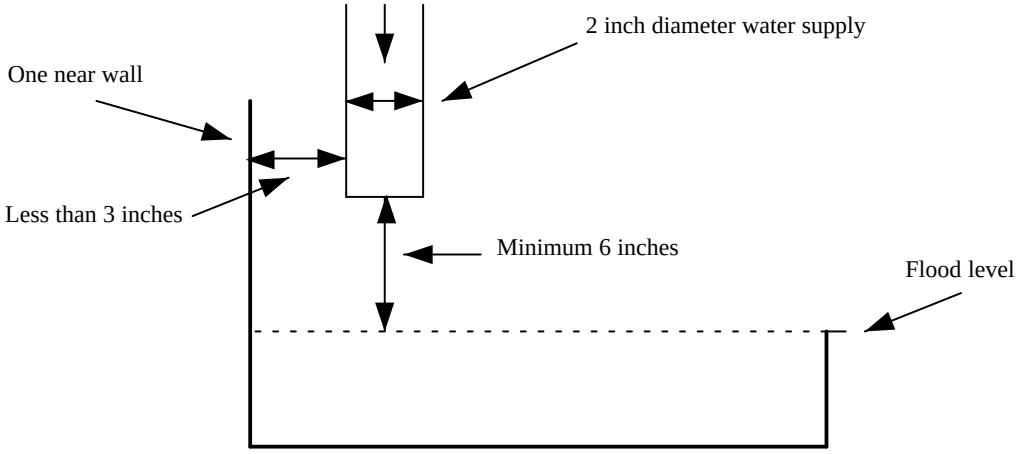
A−382.41 (5)−1. AIR−GAP WITH PIPE/SPOUT(S) ABOVE FLOOD LEVEL RIM OF RECEPTACLE/FIXTURE.



WATER SUPPLY AIR−GAP ASME 112.1.2

A−382.41 (5)−2. AIR−GAP WITH PIPE/SPOUT(S) BELOW FLOOD LEVEL RIM OF RECEPTACLE/FIXTURE.





If distance is 3 times or greater than the diameter of water supply (2 inch), then the air−gap is 2 times the diameter of the water supply, (i.e., 2 X 2 = 4 inches)

If the distance is less than 3 times the diameter of the water supply (2 inch), then the air−gap is 3 times the diameter of the water supply, (i.e., 3 X 2 = 6 inches)

A PARTIAL TABLE FOR THE SELECTION OF BACKFLOW PROTECTION *

Situation	Hazard	Air−gap	ASSE 1001	ASSE 1011	ASSE 1012	ASSE 1013	ASSE 1014	ASSE 1019	ASSE 1020	ASSE 1022	ASSE 1035	ASSE 1052	ASSE 1055	ASSE 1056
Autoclave/sterilizer[1]	Low				X									
Autoclave/sterilizer[2]	High					X								X
Boiler	Low				X									
Boiler	High					X								
Building maintenance sink[3]	High		X	X		X						X		X
Carbonated beverage dispenser	High									X				
Cappuccino machine	Low				X					X				
Chemical dispensing system[4]	High	X	X			X							X	X
Commercial dish-washer	High		X			X								X
Commercial clothes washer	High	X	X			X								X
Commercial overhead hose reel	High					X								
Dental unit/chair[5]	High					X								X
Expresso machine	Low				X					X				
Exterior wall hydrants	High							X						
Food waste grinder	High		X			X								X
Handheld showers	High		X				X							
Hose threaded outlets[6]	High			X								X		
Humidifier	Low	X			X									
Kidney dialysis machine	High					X								X
Laboratory sink faucet[7]	High		X								X	X		
Photo developing machine	High					X								X
Proofing oven	Low				X									
Shampoo/barber sink[8]	High		X			X	X							X
Swimming pools	High	X	X	X		X		X	X			X		X
Therapeutic pools	High	X	X	X		X		X	X					X
Wading pools	High	X	X	X		X		X	X					X
Water cooled compressors	High					X								X
X−ray developing machine	High					X								X
Yard hydrants[9]	High			X								X		

*Any situation may be subject to an alternate approval.

[1] If less than 15 pounds steam or 30 pounds water and nontoxic chemicals.

[2] If greater than 15 pounds steam or 30 pounds water and toxic chemicals.

[3] Requires backflow protection even if there is a plain end spout.

[4] Requires separate water supply terminating without a hose thread, or the manufacturer must provide a bleed device to connect to the janitor sink faucet spout.

[5] Or, provide bottled water conversion unit.

[6] For outlets other than the required ASSE 1019 hydrants.

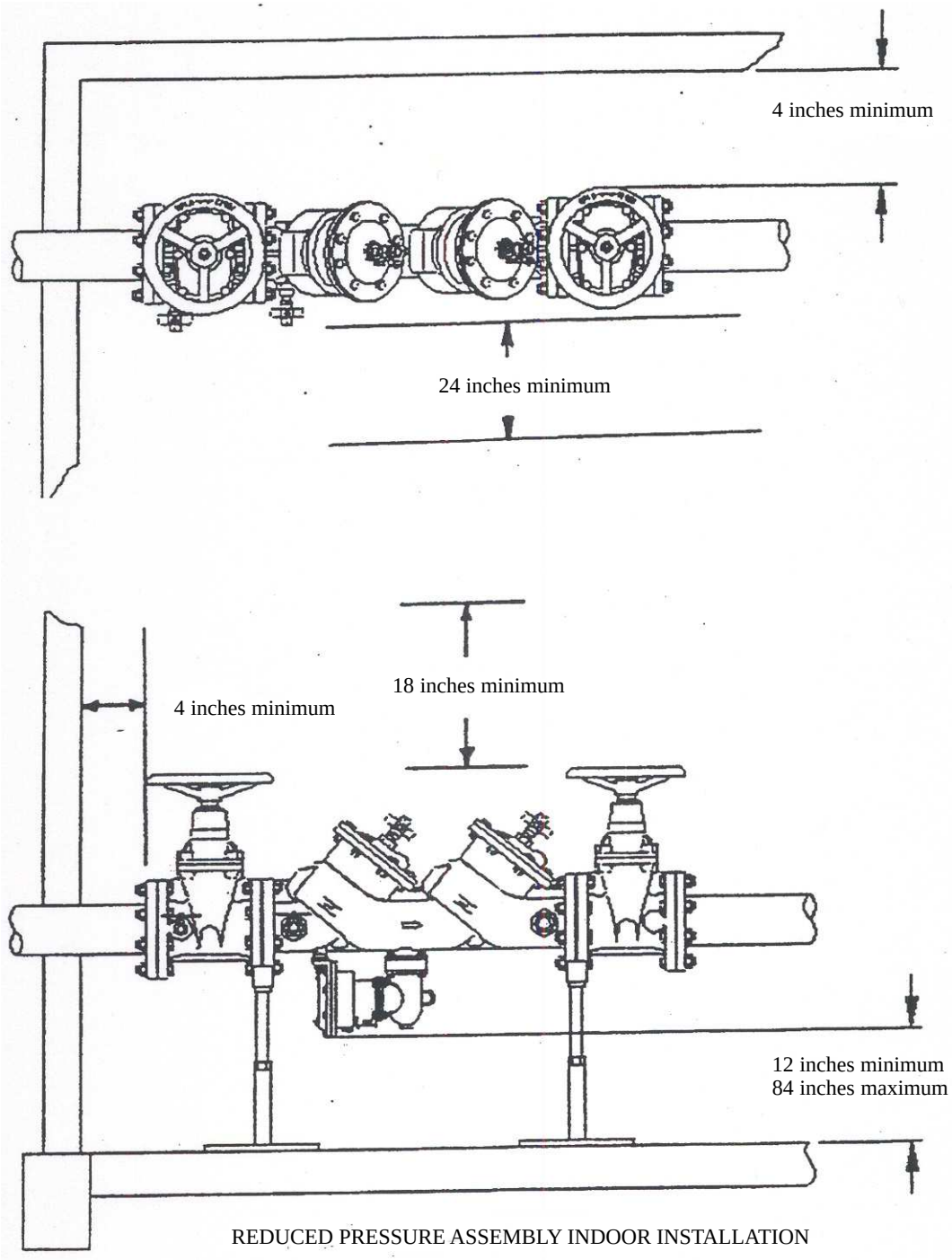
[7] If provided with hose threads or serrated nipple.

[8] Faucet meeting ASME A112.18.1M that includes backflow protection requirements.

[9] Hydrants that bleed into the ground and hydrants that are flush with the grade are prohibited.

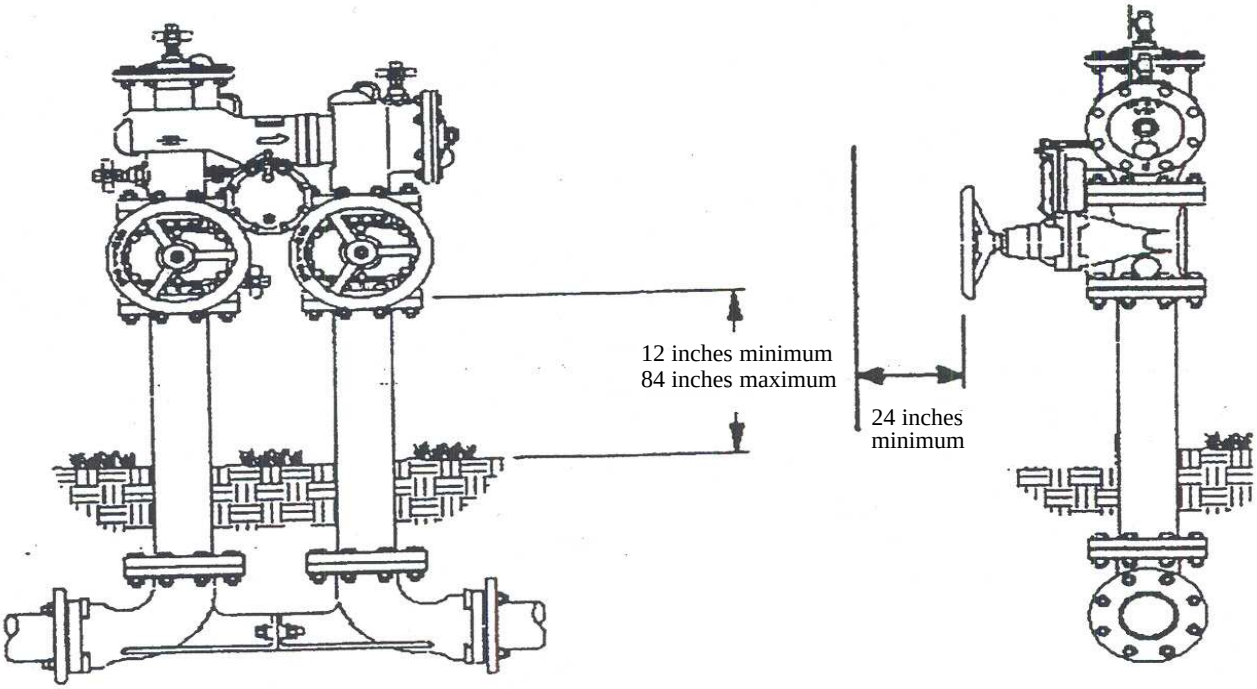
The Wisconsin Administrative Code on this web site is current through the last published Wisconsin Register. See also Are the Codes on this Website Official?

A−382.41 (5) (f)−1. CROSS CONNECTION CONTROL ASSEMBLY INSTALLATION.

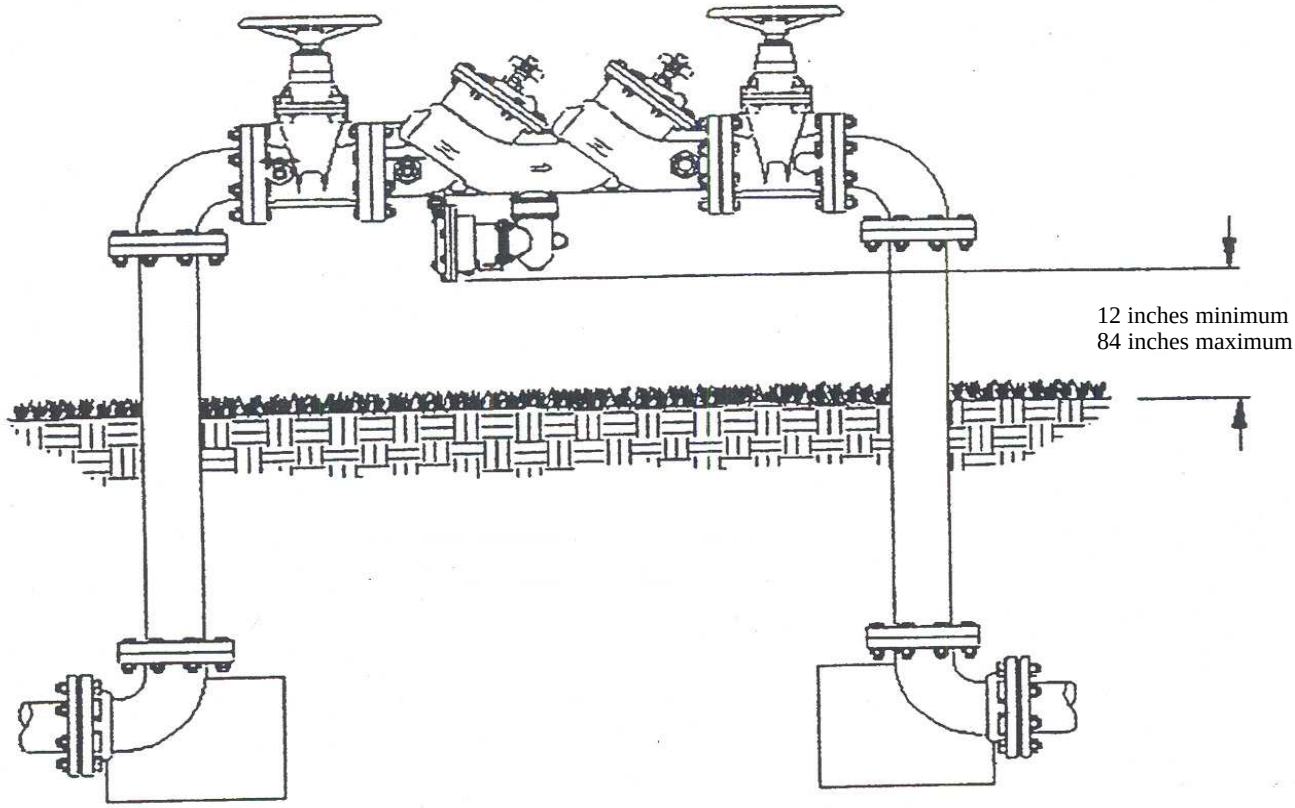


REDUCED PRESSURE ASSEMBLY INDOOR INSTALLATION

A−382.41 (5) (f)−2. CROSS CONNECTION CONTROL ASSEMBLY INSTALLATION.

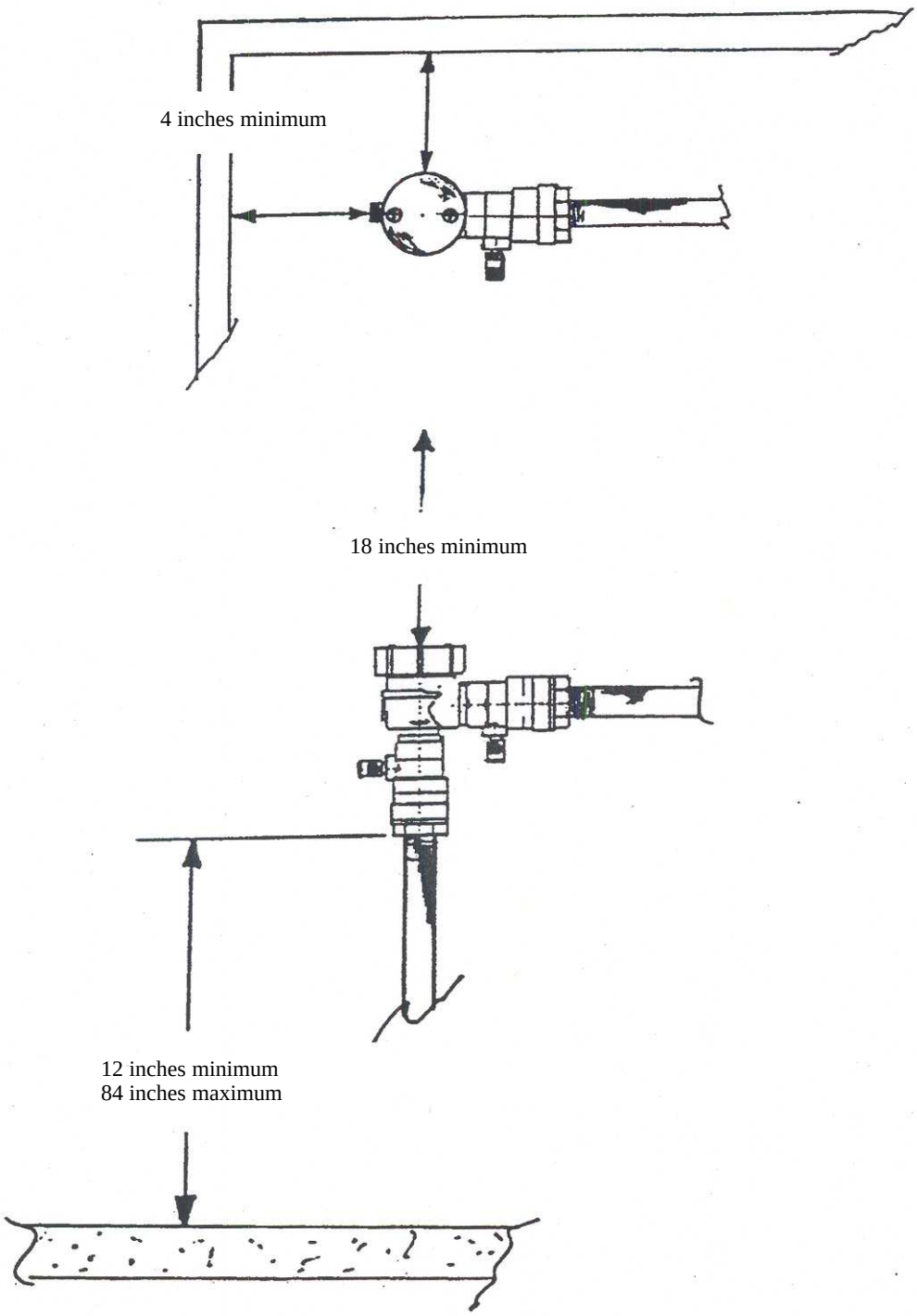


REDUCED PRESSURE ASSEMBLY OUTDOOR INSTALLATION



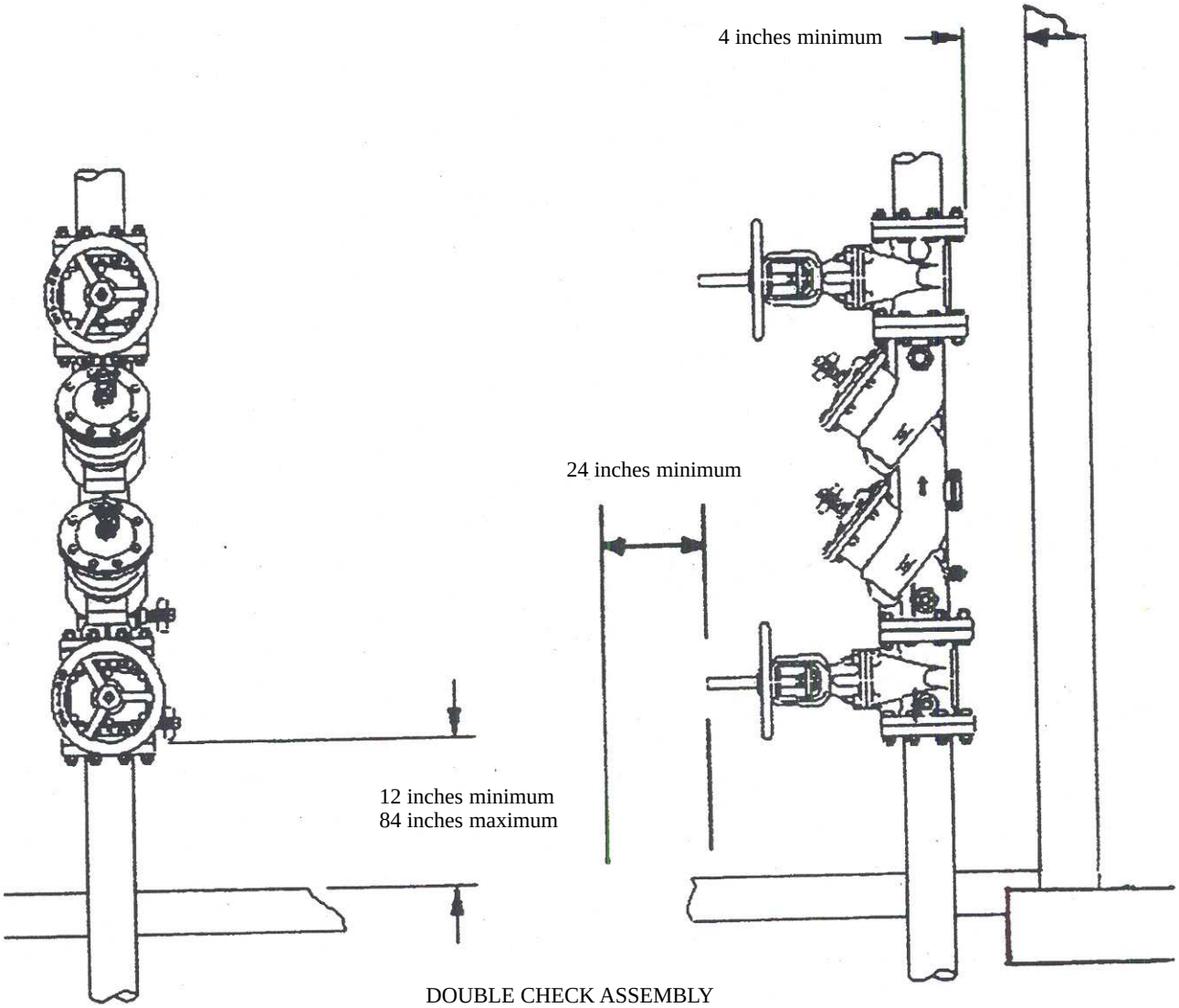
REDUCED PRESSURE ASSEMBLY OUTDOOR INSTALLATION

A−382.41 (5) (f)−3. CROSS CONNECTION CONTROL ASSEMBLY INSTALLATION.



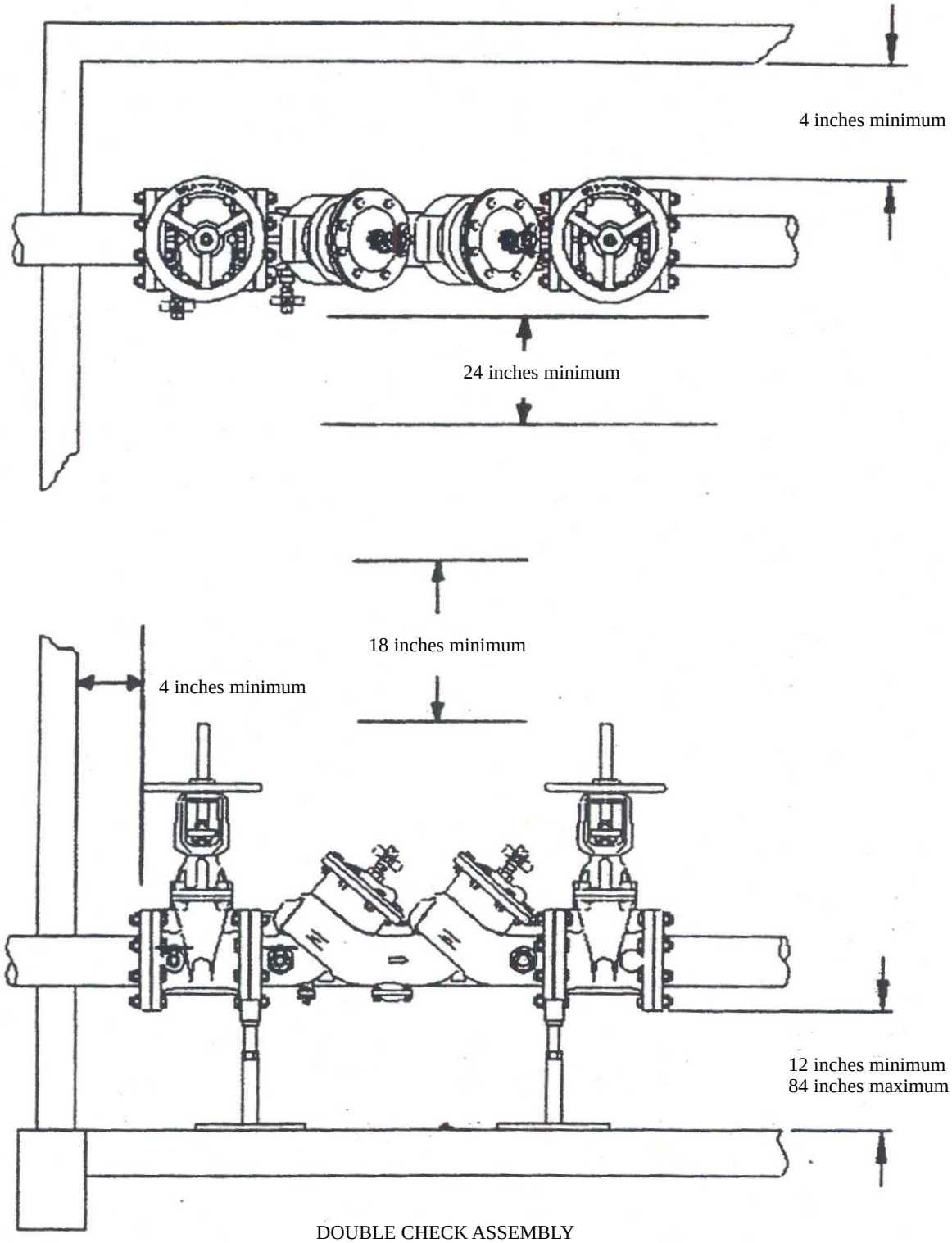
PRESSURE VACUUM BREAKER ASSEMBLY
BACK SIPHONAGE BACKFLOW VACUUM BREAKER

A−382.41 (5) (f)−4. CROSS CONNECTION CONTROL ASSEMBLY INSTALLATION.



DOUBLE CHECK ASSEMBLY
INDOOR VERTICAL INSTALLATION

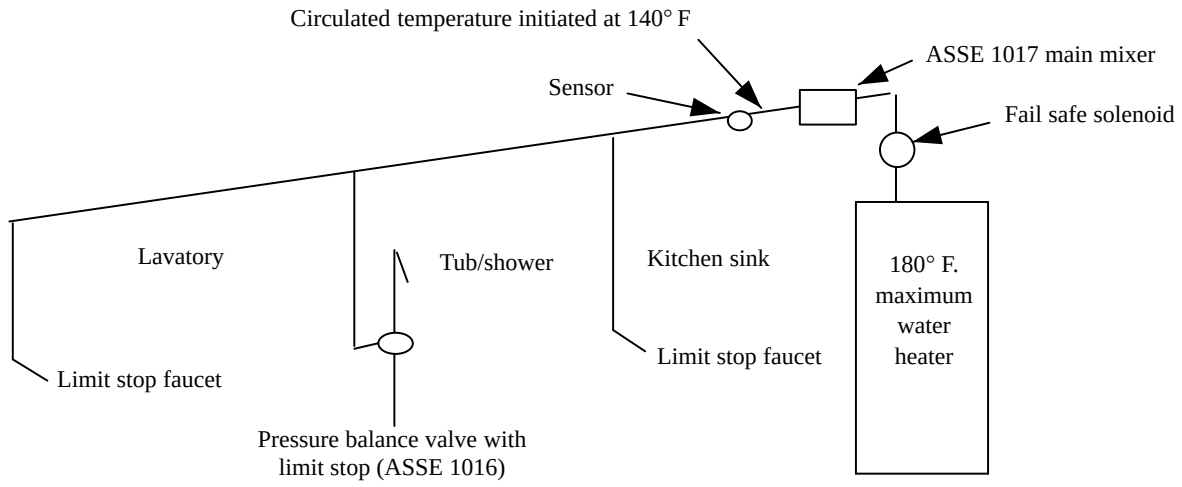
A−382.41 (5) (f)−5. CROSS CONNECTION CONTROL ASSEMBLY INSTALLATION.



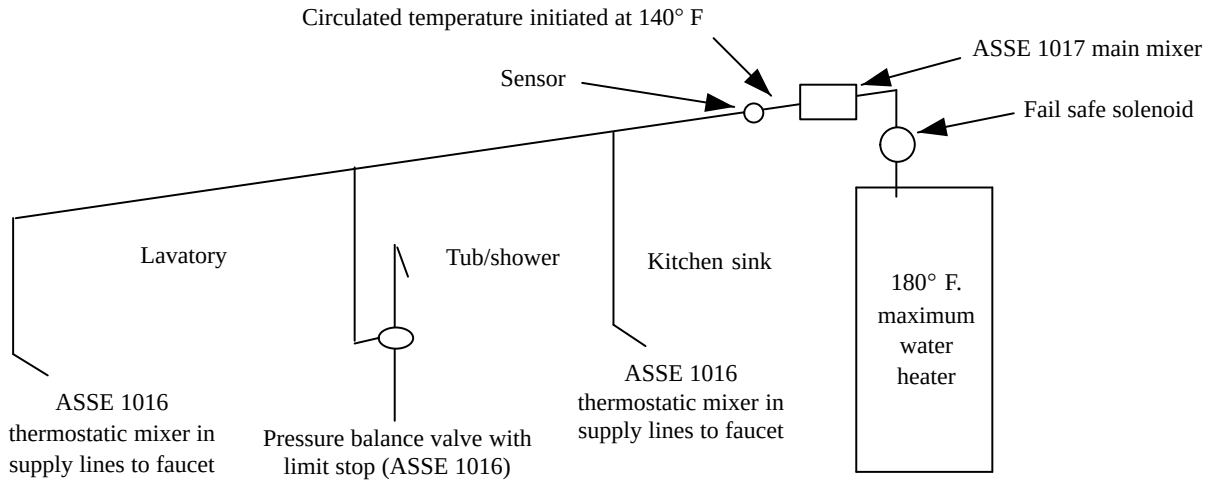
DOUBLE CHECK ASSEMBLY
INDOOR INSTALLATION

A−382.50 (3) (b) 5. OPTIONS FOR TEMPERATURE CONTROL IN HEALTH CARE FACILITIES. The following sketches provide options for fail safe installations at the bathing and shower fixture and temperature control at hand-washing fixtures.

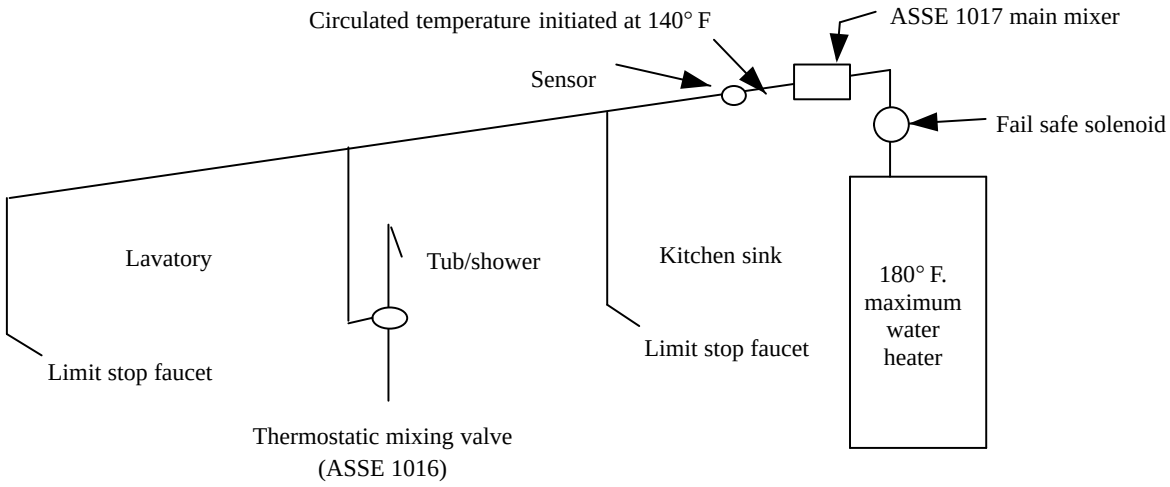
Option 1. Fail safe solenoid provided at main mixer meeting ASSE 1017, pressure balanced tub/shower valve meeting ASSE 1016 and limit stop faucets at lavatory and kitchen sink.



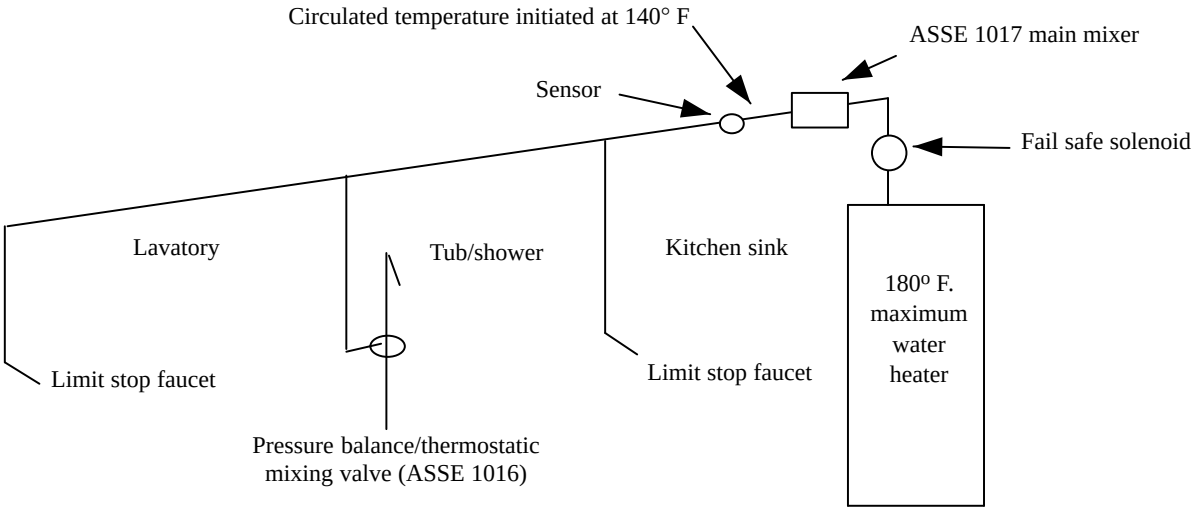
Option 2. Fail safe solenoid provided at main mixer meeting ASSE 1017, pressure balanced tub/shower valve meeting ASSE 1016 and thermostatic mixer meeting ASSE 1016 at lavatory and kitchen sink faucets.



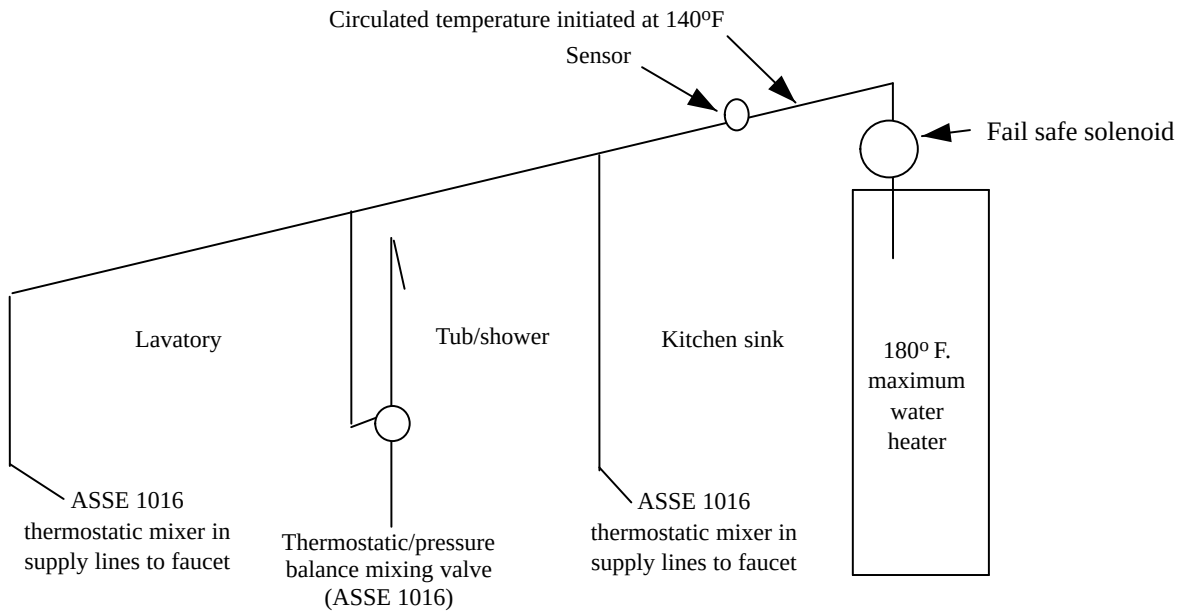
Option 3. Fail safe solenoid provided at main mixer meeting ASSE 1017, thermostatic tub/shower valve meeting ASSE 1016 and limit stop faucets at lavatory and kitchen sink.



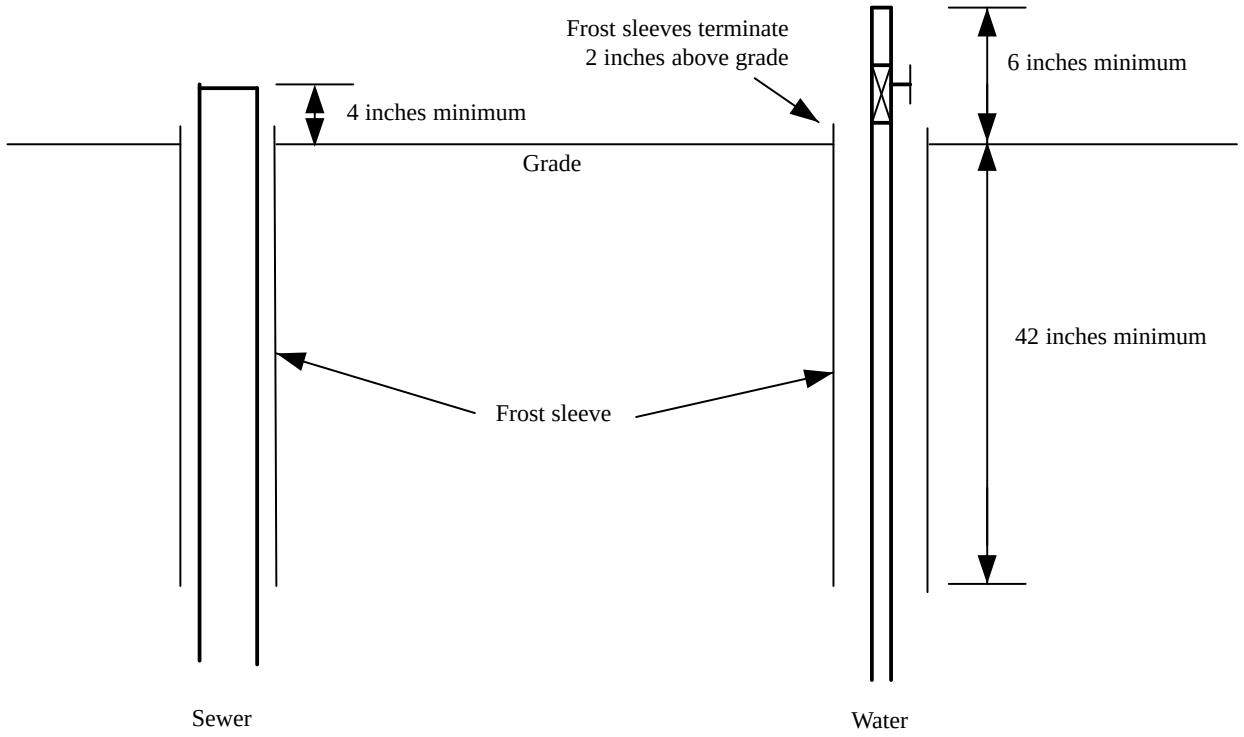
Option 4. Fail safe solenoid provided at main mixer meeting ASSE 1017, combination thermostatic/pressure balance mixing valve meeting ASSE 1016 and limit stop faucets at lavatory and kitchen sink.



Option 5. Fail safe solenoid, combination pressure balanced/thermostatic tub/shower valve meeting ASSE 1016 and thermostatic mixer meeting ASSE 1016 at lavatory and kitchen sink faucets.



A−382.51 (3) MOBILE HOME SITES AND PARKS. Mobile home building sewer and water service connections.



Chapter SPS 383

APPENDIX

The material and information contained in this appendix is for clarification purposes only. Appendix material and information are numbered to correspond to the rule number as it appears in the text of the code. Material and information included in this appendix is subject to change without notice, including names, addresses, phone numbers and forms, and reflects information known at the time of publication.

A−383.21 (3) PROCESSING. The specific format of a sanitary permit application is specified by the department and may change depending on the data tracking needs of the department. The uniform application form issued by the department is to be used by all permit issuing agents. It may consist of a paper or electronic format, or both. The sanitary permit application form will require the applicant to report information pertinent to the ownership, use, location, system type, maintenance schedule, and responsible installer. Additionally, plans and specifications for the project must also be submitted with, and are part of, the permit application. Fees for the sanitary permit are based on a statutory minimum as cited in s. 145.19 (2), Wis. Stats., and any additional costs levied by the issuing agent.

The state sanitary permit is issued when evidence and documentation is presented by the owner of the property that minimum code standards have been or will be met.

_____COUNTY NO._____

STATE SANITARY PERMIT

☐ TRANSFER/RENEWAL PREVIOUS NO._____

OWNER _____

PLUMBER_____LIC.#_____

TOWN OF_____

SEC_____,T_____N, R_____E/W

AND/OR LOT_____BLOCK_____

_____SUBDIVISION

CHAPTER 145.135 (2) WISCONSIN STATUTES

(a) The purpose of the sanitary permit is to allow installation of the private sewage system described in the permit.
(b) The approval of the sanitary permit is based on regulations in force on the date of approval.
(c) The sanitary permit is valid and may be renewed for a specified period.
(d) Changed regulations will not impair the validity of a sanitary permit.
(e) Renewal of the sanitary permit will be based on regulations in force at the time renewal is sought, and that changed regulations may impede renewal.
(f) The sanitary permit is transferable.
History: 1977 c. 168; 1979 c. 34,221; 1981 c. 314

Note: If you wish to renew the permit, or transfer ownership of the permit, please contact the county authority.

_____AUTHORIZED ISSUING OFFICER – DATE_____

THIS PERMIT EXPIRES_____UNLESS RENEWED BEFORE THAT DATE

POST IN PLAIN VIEW

VISIBLE FROM THE ROAD FRONTING THE LOT DURING CONSTRUCTION

SBD-06499 (R. 7/00)

Do Not Reproduce

Chapter 145 Wisconsin Statutes provides some direction as to the issuance of sanitary permits as follows:

145.135 Sanitary permits.

(1) Validity. In this section, "sanitary permit" means a permit issued by the department or any governmental unit responsible for the regulation of private sewage systems for the installation of a private sewage system. No person may install a private sewage system unless the owner of the property on which the private sewage system is to be installed holds a valid sanitary permit. A sanitary permit is valid for 2 years from the date of issue and renewable for similar periods thereafter. A governmental unit responsible for the regulation of private sewage systems may not charge more than one fee for a sanitary permit or the renewal of a sanitary permit in any 12−month period. A sanitary permit shall remain valid to the end of the established period, notwithstanding any change in the state plumbing code or in any private sewage system ordinance during that period. A sanitary permit may be transferred from the holder to a subsequent owner of the land, except that the subsequent owner must obtain a new copy of the sanitary permit from the issuing agent. The results of any percolation test or other test relating to the disposal of liquid domestic wastes into the soil shall be retained by the governmental unit responsible for the regulation of private sewage systems where the property is located. The governmental unit responsible for the regulation of private sewage systems shall make the test results available to an applicant for a sanitary permit and shall accept the test results as the basis for a sanitary permit application unless the soil at the test site is altered to the extent that a new soil test is necessary.

(2) Notice. A sanitary permit shall include a notice displayed conspicuously and separately on the permit form, to inform the permit holder that:

(a) The purpose of the sanitary permit is to allow installation of the private sewage system described in the permit.

(b) The approval of the sanitary permit is based on regulations in force on the date of approval.

(c) The sanitary permit is valid and may be renewed for a specified period.

(d) Changed regulations will not impair the validity of a sanitary permit.

(e) Renewal of the sanitary permit will be based on regulations in force at the time renewal is sought, and that changed regulations may impede renewal.

(f) The sanitary permit is transferable.

145.19 Sanitary permit.

(1) Requirement; information; forms. No septic tank may be purchased and no private sewage system may be installed unless the owner of the property on which the private sewage system is to be installed holds a valid sanitary permit from the governmental unit responsible for the regulation of private sewage systems in which the property is located. The department shall prescribe the information to be included in the sanitary permit and furnish sanitary permit forms to the governmental unit. The applicant shall submit the completed sanitary permit to the governmental unit. The governmental unit shall approve or disapprove the sanitary permit according to the rules promulgated by the department under this chapter. No person may sell at retail, as defined under s. 100.201 (1) (d), a septic tank for installation in this state unless the purchaser holds a valid sanitary permit issued under this section.

(2) Fee. No fee for a sanitary permit may be less than $61, or the amount determined under department rule. The governing body for the governmental unit responsible for the regulation of private sewage systems may establish a fee for a sanitary permit which is more than $61, or the amount determined under department rule.

(3) Copy of permit forwarded to the department. The governmental unit responsible for the regulation of private sewage systems shall forward a copy of each valid sanitary permit and $20, or the amount determined under department rule, of the fee to the department within 90 days after the permit is issued.

(4) Use of fee. The portion of this fee retained by the governmental unit responsible for the regulation of private sewage systems shall be used for the administration of private sewage system programs.

(5) Fee adjustment. The department, by rule promulgated under ch. 227, may adjust the minimum permit fee under sub. (2) and the fee portion forwarded under sub. (3).

(6) Groundwater fee. In addition to the fee under sub. (2), the governmental unit responsible for the regulation of private sewage systems shall collect a groundwater fee of $25 for each sanitary permit. The governmental unit shall forward this fee to the department together with the copy of the sanitary permit and the fee under sub. (3). The moneys collected under this subsection shall be credited to the environmental fund for environmental management.

A−383.22 (3) PLAN REVIEW PROCESS. All proposed POWTS installations require plan review prior to sanitary permit issuance. Projects subject to department review include all projects under Table 383.22−1, and many of the projects under Table 383.22–2. Designated agents may review projects included in Table 383.22−2.

A−383.25 (2) ISSUANCE OF BUILDING PERMITS. A building permit is defined in s. SPS 381.01 (43), Wis. Adm. Code, as any written permission from a municipality that allows construction to commence on a structure. In effect, this means that land use and zoning permits, as well as other similar permits that constitute permission to construct are considered building permits.

Prior to building permit issuance, the issuing agent has a statutory responsibility, under s. 145.195, Wis. Stats., to consider whether or not the proposed structure requires connection to a private onsite wastewater treatment system (POWTS), or if the construction will interfere with the operation of an existing POWTS.

> Section 145.195, Stats. Building on unsewered property. (1) No county, city, town or village may issue a building permit for construction of any structure requiring connection to a private domestic sewage treatment and disposal system unless a system satisfying all applicable regulations already exists to serve the proposed structure or all permits necessary to install such a system have been obtained.
>
> (2) Before issuing a building permit for construction on any structure on property not served by a municipal sewage treatment plant, the county, city, town or village shall determine that the proposed construction does not interfere with a functioning private domestic sewage treatment and disposal system. The county, city, town or village may require building permit applicants to submit a detailed plan of the owner's existing private domestic sewage treatment and disposal system.

A−383.25 (2) (f) Setbacks. Horizontal setbacks from encumbrance for new POWTS installations are in conformance with Table 383.43−1 or the rules in effect at the time the system was installed, which ever is less. For setback distances associated with previous administrative codes refer to the previous code issue or the following table.

10/01/08	Code Comparison - POWTS Code Setback Encumbrances (ft)																
	Vertical Separation SAS		Horizontal Separation Soil Absorption System (SAS)								Horizontal Separation Treatment Tank[a]						
Effective Date	Ground-water	Bedrock	Well	Lake[b]	Cistern	Building	Lot Line	Swimming Pool	Water Service	Public W Main	Well	Lake[c]	Cistern	Building	Lot Line	Swimming Pool	Water Service
2/1/04	2/3/5	2/3/5	50[l]	50[m]		10	5	15	10	25[n]	25[l]	10[m]		5	2	0	10
7/1/00	2/3/5/10	2/3/5/10	50[l]	50[m]		10	5	15	10	25[n]	25[l]	10[m]		5	2	0	10
3/1/97	3/6[k]	3/6[k]	50	50	25	25/15/10[h]	5	15	10	25	25	25	10	5	2	5	10
3/1/94	3/6[k]	3/6[k]	50	50	25	25/15/10[h]	5	15	10	25	25	25	10	5	2	5	10
3/1/92	3/6[k]	3/6[k]	50	50	25	25/15/10[h]	5	15	10	25	25	25	10	5	2	5	10
7/1/91	3/6[k]	3/6[k]	50	50	25	25/15/10[h]	5	15	10	25	25	25	10	5	2	5	10
10/1/85	3	3	50	50	25	25/15/10[h]	5	15	10	25	25	25	10	5	2	15	10
7/1/83	3	3	50	50	25	25/15/10[h]	5	15	10	25	25	25	10	5	2	15	10
1/1/81	3	3	50	50	25	25/15/10[h]	5	15	10	25	25	25	10	5	2	15	10
6/21/80	3	3	50	50	25	25/15/10[h]	5	15	10	25	25	25	10	5	2	15	10
2/1/79	3	3	50	50	25	25/10[i]	5	25/15[j]	10	25	25	25	10	5	2	25	10
8/1/77	3[d]	3[d]	50	50	25	25/10[i]	5	25/15[j]	10	25	25	25	10	5	2	25	?
8/1/76	3[d]	3[d]	50	50	25	25/10[i]	5	25/15[j]	10	25	25	25	10	5	2	25	?
12/1/72	3	3	50	50	25	25	5	50	25		25	25	10	5	2	25	?
11/1/71	3	3	50	50	25	25	5	50	25		25	25	10	5	2	25	?
12/1/69	3	3	50	50	25	25	5	50	25		25	25	10	5	2	25	?
3/1/63		0[e]	50	25	25	25[g]	5				25		10		2		
5/1/62		0[e]	50	25	25	25[g]	5				25		10		2		
3/1/57		0[e]	50	25	25	25[g]	5				25		10		2		
9/1/54		0[e]	50	25	50	50[g]	5				25		10		2		
1948			50	25	50	50[g]					25		10		2		
1941			150[f]		50	50[g]					25		10		2		
1937			150[f]		50	50[g]					25		10		2		
1932			150[f]		50	50[g]					25		10		2		
1925			150[f]		50	50[g]					25		10		2		
1917			150[f]		50	50[g]					25		10		2		
1916			150[f]		50	50[g]					25		10		2		
1914			150[f]		50	50[g]					25		10	10	2		
Effective Date	Ground-water	Bedrock	Well	Lake[b]	Cistern	Building	Lot Line	Swimming Pool	Water Service	Public W Main	Well	Lake[c]	Cistern	Building	Lot Line	Swimming Pool	Water Service

Footnotes:
a. Includes water−tight cesspools, sewage tanks, septic tanks, dosing chambers.
b. Lake category includes lakes, streams or other watercourses.
c. Lake category includes lakes, streams, rivers, ponds, flowages and reservoirs.
d. The code required 5 feet of soil over GW or BR. It is assumed that a 3 foot separation was maintained.
e. Seepage pits shall not extend into creviced rock formations.
f. May be reduced to 50 feet if well is drilled and cased to 100 ft.
g. Means a dwelling.
h. Refers to habitable or occupied bldg with below grade foundation/habitable bldg on slab/uninhabited bldg on slab.
I. Refers to habitable buildings/uninhabited buildings.
j. Refers to below ground/above ground swimming pools.
k. Refers to normal soil/very coarse textured soil.
l. Distance listed is an example typical for residential application. Code references NR 811 and NR 812.
m. Code references Ordinary High Water Mark (OHWM) of navigable waters
n. Distance listed is an example of a typical setback. Code references NR 811.

A−383.43 (6) COMMERCIAL FACILITIES. Table A−383.43−1 may be used to estimate wastewater flows from a commercial building.

Table A−383.43−1
Public Facility Wastewater Flows

Source	Unit	Estimated Wastewater Flow (gpd)
Apartment or Condominium	Bedroom	100
Assembly hall (no kitchen)	Person (10 sq. ft./person)	1.3
Bar or cocktail lounge (no meals served)	Patron (10 sq. ft./patron)	4
Bar or cocktail lounge* (w/meals – all paper service)	Patron (10 sq. ft./patron)	8
Beauty salon	Station	90
Bowling alley	Bowling lane	80
Bowling alley (with bar)	Bowling lane	150
Camp, day and night	Person	25
Camp, day use only (no meals served)	Person	10
Campground or Camping Resort	Space, with sewer connection and/or service building	30
Campground sanitary dump station	Camping unit or RV served	25
Catch basin	Basin	65
Church (no kitchen)	Person	2
Church* (with kitchen)	Person	5
Dance hall	Person (10 sq. ft./person)	2
Day care facility (no meals prepared)	Child	12
Day care facility* (with meal preparation)	Child	16
Dining hall* (kitchen waste only without dishwasher and/or food waste grinder)	Meal served	2
Dining hall* (toilet and kitchen waste without dishwasher and/or food waste grinder)	Meal served	5
Dining hall* (toilet and kitchen waste with dishwasher and/or food waste grinder)	Meal served	7
Drive−in restaurant* (all paper service with inside seating)	Patron seating space	10
Drive−in restaurant* (all paper service without inside seating)	Vehicle space	10
Drive−in theater	Vehicle space	3
Employees (total all shifts)	Employee	13
Floor drain (not discharging to catch basin)	Drain	25
Gas station / convenience store	Patron	3
Gas station (with service bay) Patron Service bay	 Patron Service bay	 3 50
Hospital*	Bed space	135
Hotel, motel or tourist rooming house	Room	65
Medical office building Doctors, nurses, medical staff Office personnel Patients	 Person Person Person	 50 13 6.5
Migrant labor camp (central bathhouse)	Employee	20
Mobile Home (Manufactured home) (served by its own POWTS)	Bedroom	100
Mobile home park	Mobile home site	200

Table A−383.43−1 (Continued)
Public Facility Wastewater Flows

Source	Unit	Estimated Wastewater Flow (gpd)
Nursing, Rest Home, Community Based Residential Facility	Bed space	65
Outdoor sport facilities (toilet waste only)	Patron	3.5
Parks (toilets waste only)	Patron (75 patrons/acre)	3.5
Parks (toilets and showers)	Patron (75 patrons/acre)	6.5
Public shower facility	Shower taken	10
Restaurant*, 24−hr. (dishwasher and/or food waste grinder only)	Patron seating space	4
Restaurant*, 24−hr. (kitchen waste only without dishwasher and/or food waste grinder)	Patron seating space	12
Restaurant, 24−hr. (toilet waste)	Patron seating space	28
Restaurant*, 24−hr. (toilet and kitchen waste without dishwasher and/or food waste grinder)	Patron seating space	40
Restaurant*, 24−hr. (toilet and kitchen waste with dishwasher and/or food waste grinder)	Patron seating space	44
Restaurant* (dishwasher and/or food waste grinder only)	Patron seating space	2
Restaurant* (kitchen waste only without dishwasher and/or food waste grinder)	Patron seating space	6
Restaurant (toilet waste)	Patron seating space	14
Restaurant* (toilet and kitchen waste without dishwasher and/or food waste grinder)	Patron seating space	20
Restaurant* (toilet and kitchen waste with dishwasher and/or food waste grinder)	Patron seating space	22
Retail store	Patron (70% of total retail area ÷ 30 sq. ft. per patron)	1
School* (with meals and showers)	Classroom (25 students/ classroom)	500
School* (with meals or showers)	Classroom (25 students/ classroom)	400
School (without meals or showers)	Classroom (25 students/ classroom)	300
Self−service laundry (toilet waste only)	Clothes washer	33
Self−service laundry (with only residential clothes washers)	Clothes washer	200
Swimming pool bathhouse	Patron	6.5

* = May be high strength waste

A−383.43 (6) (a) Actual meter readings may be used to calculate the combined estimated design wastewater flow from a dwelling. To calculate the estimated design wastewater flow use the following formula and compare the answer to the peak metered flow. Choose the larger of the two estimated design flows.

(total meter flow/number of readings)(1.5) = estimated design wastewater flow

The frequency of meter readings should be daily for commercial.

A−383.43 (6) (b) A detailed per capita and per function flow may be established for commercial facilities. The per function flow ratings shall be substantiated by manufactures data of the per function flow and detailed use data from the facility in question or a similar facility under similar conditions of use. Estimated design wastewater flow shall be at least 1.5 times the total estimated daily flow calculated from the per capita and per function flow information.

A−383.43 (7) ESTIMATING CONTAMINANT LOADS.

Pathogenic contaminant load may be estimated based on data collected by a reputable testing or research facility.

Typical Data on the Unit Loading Factors and Expected Wastewater Contaminant Loads from Individual Residences

Contaminant	Unit Loading Factor lb/capita per day	Value		
		Unit	Range	Typical
BOD_5	0.180	mg/L	216−540	392
SS	0.200	mg/L	240−600	436
NH3 as N	0.007	mg/L	7−20	14
Org. N as N	0.020	mg/L	24−60	43
TKN as N	0.027	mg/L	31−80	57
Org P as P	0.003	mg/L	4−10	7
Inorg. P as P	0.006	mg/L	6−17	12
Grease		mg/L	45−100	70
Total Coliform		cfu/100mL	10^7−10^{10}	10^8

A−383.43 (8) (g) ANCHORING SYSTEM COMPONENTS.

The anchoring of components to counter buoyant forces due to saturated soil conditions can be determined using the following formula:

Weight of the component plus the weight of the anchor = 1.5 times (volume of water the component displaces) times [the weight of water (62.4 pounds/cubic foot at 39°F)]

Chapter SPS 383

PRIVATE ONSITE WASTEWATER TREATMENT SYSTEMS

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Note: Chapter H 63 was created as an emergency rule effective 6−21−80; section H 62.20 as it existed on June 30, 1983 was renumbered to chapter ILHR 83. Chapter ILHR 83 was renumbered chapter Comm 83 under s. 13.93 (2m) (b) 1., Stats., and corrections made under s. 13.93 (2m) (b) 6. and 7., Stats., Register, February, 1997, No. 494. Chapter Comm 83 as it existed on June 30, 2000 was repealed and a new chapter Comm 83 was created, Register, April, 2000, No. 532, eff. 7−1−00. Chapter Comm 83 was renumbered chapter SPS 383 under s. 13.92 (4) (b) 1., Stats., Register December 2011 No. 672.

Subchapter I — Scope and Application

SPS 383.01 Purpose. The purpose of this chapter is to establish uniform standards and criteria for the design, installation, inspection and management of a private onsite wastewater treatment system, POWTS, so that the system is safe and will protect public health and the waters of the state.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: am. Register January 2004 No. 577, eff. 2−1−04.

SPS 383.02 Scope. (1) WASTEWATER GENERATION. Except as delineated in sub. (2), this chapter applies to all of the following:

(a) A situation where domestic wastewater is collected and conducted by means of plumbing drain systems and is not conveyed to a wastewater treatment facility regulated by the department of natural resources.

(b) A POWTS where domestic wastewater is treated and dispersed to the subsurface.

(c) A holding tank that is utilized as a POWTS or as part of a POWTS to collect and hold domestic wastewater for transport and treatment elsewhere.

Note: Section SPS 382.10 (2) (d) states that where plumbing fixtures exist in a building that is not connected to a public sewer system, suitable provision shall be made for treating, recycling, dispersing or holding the wastewater.

Note: The department of natural resources is responsible for establishing, administering and enforcing standards relative to domestic wastewater treatment systems which either disperse to the surface or to surface waters. The department of natural resources also establishes effluent limitations and monitoring requirements where the design daily influent wastewater flow to a POWTS exceeds 12,000 gallons per day for the purpose of fulfilling WPDES permit requirements under ch. 283, Stats.

Note: Pursuant to s. 281.17 (5), Stats., the department of natural resources may also restrict or specify the type of wastewater treatment necessary. Section 281.17 (5) reads:

> The department [department of natural resources] may prohibit the installation or use of septic tanks in any area of the state where the department finds that the use of septic tanks would impair water quality. The department shall prescribe alternate methods for waste treatment and disposal in such prohibited areas.

(2) EXEMPTIONS. This chapter does not apply to:

(a) A POWTS owned by the federal government and located on federal lands; and

(b) A POWTS located or to be located on land held in trust by the federal government for Native Americans.

(3) SUBDIVISION STANDARDS. This chapter does not establish minimum lot sizes or lot elevations under s. 145.23, Stats., for the purpose of the department reviewing proposed subdivisions which will not be served by public sewers under s. 236.12, Stats.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00.

SPS 383.03 Application. (1) INSTALLATIONS. (a) *New POWTS installations.* The design, installation and management of a new POWTS shall conform with this chapter.

Note: Pursuant to s. 145.135 (2) (b), Stats., the approval of a sanitary permit is based on the rules in effect on the date of the permit approval.

(b) *Modifications to existing POWTS.* A modification to an existing POWTS, including the replacement, alteration or addition of materials, appurtenances or POWTS components, shall require that the modification conform to this chapter.

Note: The modification of one part of a POWTS may affect the performance or the operation of other parts of the POWTS thereby necessitating further modifications for the 'other parts' to be or remain compliant with the appropriate edition of the state plumbing code; see sub. (2) (b) 1.

(c) *Modifications to existing structures served by existing POWTS.* When an addition or alteration is proposed to an existing building, structure or facility that is served by an existing POWTS and the proposed addition or alteration will result in a change that affects the wastewater flow or wastewater contaminant load beyond the minimum or maximum capabilities of the existing POWTS, the POWTS shall be modified to conform to the rules of this chapter.

Note: See s. SPS 383.25 (2) relating to the issuance of building permits.

(2) RETROACTIVITY. (a) This chapter does not apply retroactively to an existing POWTS installed prior to July 1, 2000, or for which a sanitary permit has been issued prior to July 1, 2000, except as provided in ss. SPS 383.32 (1) (a) and (c) to (g), 383.54 (4) and 383.55 (1) (b).

(b) 1. Except as provided in subd. 2. and ss. SPS 383.32 (1) (a) and (c) to (g), 383.54 (4) and 383.55 (1) (b), an existing POWTS installed prior to July 1, 2000, shall conform to the siting, design, construction and maintenance rules in effect at the time the

sanitary permit was obtained or at the time of installation, if no permit was issued.

2. a. An existing POWTS installed prior to December 1, 1969 with an infiltrative surface of a treatment and dispersal component that is located 2 feet or more above groundwater or bedrock shall be considered to discharge final effluent that is not sewage, unless proven otherwise.

b. An existing POWTS installed prior to December 1, 1969 with an infiltrative surface of a treatment and dispersal component that is located less than 2 feet above groundwater or bedrock shall be considered to discharge final effluent that is sewage, unless proven otherwise.

(c) An existing POWTS which conforms with this chapter shall be permitted to remain as installed.

(3) PLAT RESTRICTIONS. The department shall consider a restriction or a prohibition placed on a lot or an outlot prior to July 1, 2000, as a result of its plat review authority under s. 236.12, Stats., waived, if a POWTS proposed for the lot complies with this chapter.

Note: The waiving of a restriction or prohibition placed on a lot or outlot by the department is a review action. Pursuant to s. SPS 302.635, a fee is needed to initiate the review action.

Note: Under the provisions of ch. 236, Stats., the department of administration and local municipalities have review authority over lots in subdivisions not served by public sewers. A written release of a restriction or prohibition may be required by the department of administration and local municipality. A Correction Instrument may be required under the provisions of s. 236.295, Stats.

(4) GROUNDWATER STANDARDS. (a) Pursuant to s. 160.255, Stats., the design, installation, use or maintenance of a POWTS is not required to comply with the nitrate standard specified in ch. NR 140 Table 1, except as provided under sub. (5).

(b) Pursuant to s. 160.19 (2) (a), Stats., the department has determined that it is not technically or economically feasible to require that a POWTS treat wastewater to comply with the preventative action limit for chloride specified in ch. NR 140 Table 2 as existed on June 1, 1998.

Note: The prevention action limit for chloride as a performance standard relative to the design and management of a POWTS has been determined to be unfeasible because anion exchange is the only chemical process capable of removing chloride from water. The physical processes of removing chloride, such as through evaporation and reverse osmosis, would separate feedwater into two streams, one with a reduced chloride content and the other with an increased chloride content, and result in still having to treat and dispose of chloride contaminated wastewater. The design and management practice to address the enforcement standard for chloride as it relates to a POWTS is addressed under s. SPS 382.40 (8) (j).

(5) LOCAL ORDINANCES. (a) Pursuant to ss. 59.70 (5) (a), 145.02 (2) and 145.13, Stats., this chapter is uniform in application and a governmental unit may not enact an ordinance for the design, installation, inspection and management of a POWTS which is more or less stringent than this chapter, except as specifically permitted by rule.

(b) Except as provided in s. SPS 383.25 (1) (b), a governmental unit shall submit to the department any proposed ordinance or proposed ordinance revision relating to POWTS. The proposed ordinance or revision shall be submitted for review a minimum of 30 calendar days prior to the first scheduled public hearing date regarding the ordinance.

Note: Pursuant to ss. 59.69, 60.62, 61.35 and 62.23, Stats., this chapter does not affect municipal authority for zoning, including establishing nitrate standards as part of a zoning ordinance to encourage the protection of groundwater resources.

(6) DEPARTMENT AUTHORITY. A department interpretation of the requirements in this chapter shall supersede any differing interpretation by a lower level jurisdiction. A department decision on the application of the requirements in this chapter shall supersede any differing decision by a lower level jurisdiction.

Note: A decision of the department may be appealed. Section 101.02 (6) (e), Stats., outlines the procedure for submitting requests to the department for appeal hearings and the department procedures for hearing appeals.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: am. (2) (b) 1., r. and recr. (5) Register January 2004 No. 577, eff. 2−1−04; CR 07−100: renum. (5) to be (5) (a), cr. (5) (b) and (6) Register September 2008 No. 633, eff. 10−1−08; correction in (2) (a), (b), (5) (b) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.04 Implementation. (1) For the purpose of facilitating inspection responsibilities and services, a governmental unit may not issue a sanitary permit for the construction or use of a POWTS that utilizes any of the technologies, designs or methods delineated in Table 383.04−1 and that has been recognized under s. SPS 384.10 (3) or 383.22, unless the governmental unit utilizes one or more individuals, who have obtained approved training under s. SPS 383.05 for the POWTS technology, design or method, to provide the inspections under s. SPS 383.26 (2) to (4), except as provided in sub. (2).

(2) A governmental unit may issue a sanitary permit for the construction or use of a POWTS that utilizes any of the technologies, designs or methods delineated in Table 383.04−1 and that has not been recognized under s. SPS 384.10 (3), but has been approved by the department under s. SPS 383.22, provided that governmental unit has arranged with the department to provide the inspections under s. SPS 383.26 (2) to (4).

Table 383.04−1
Restricted Technologies

	Technology
1.	Pressurized distribution component with less than 1/8 inch orifice diameter.[a]
2.	Mechanical POWTS treatment component.[b]
3.	Disinfection unit.[c]
4.	Sand, gravel or peat filter as a POWTS treatment component.[d]

[a] Includes drip distribution.
[b] Includes an aerobic treatment tank or a complete treatment unit within a tank.
[c] Includes a chlorinator, ozonation unit, and ultraviolet light unit.
[d] Does not include a mound system.

Note: The provisions of this section relating to a governmental unit's ability to limit the issuance of sanitary permits for new development does not dictate a specific strategy as to the scope of the limitation. Therefore, limitation options include, but are not limited to, a prohibition for all new development or in certain geographical areas, a quota system for new development, a requirement for a permit to operate for a specific POWTS method or technology, or a service/performance bond for a specific POWTS method or technology.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: am. Table 83.04−1 footnote [a], r. (2) and Table 83.04−2, renum. (3) to be (2) Register January 2004 No. 577, eff. 2−1−04; CR 07−100: renum. (1) (a) and (b) to be (1) and (2), r. (2) Register September 2008 No. 633, eff. 10−1−08; correction in (1) made under s. 13.92 (4) (b) 7., Stats., Register September 2008 No. 633; correction in (1), (2) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.05 Installation and inspection training. (1) PROGRAM SPECIFICATIONS. Only courses, programs and seminars approved in writing by the department shall be used to fulfill the required training for the POWTS technologies and methods under ss. SPS 383.04 (1) and 383.21 (2) (c) 4.

(2) EVIDENCE OF COMPLIANCE. An individual who has completed the installation and inspection training shall be responsible for retaining evidence of achieving the training in order to fulfill the obligations under ss. SPS 383.04 (1) and 383.21 (2) (c) 4.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 07−100: renum. (1) (a) to be (1) and am., r. (1) (b) to (e) Register September 2008 No. 633, eff. 10−1−08; correction in (1), (2) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

Subchapter II — Administration and Enforcement

SPS 383.20 Purpose. (1) This subchapter establishes the following:

(a) Regulatory processes and procedures which are to be followed when designing, installing or maintaining a POWTS; and

(b) Responsibilities and actions of the various governmental agencies involved with the administration and enforcement of this chapter

Note: Section 145.20 (1) (a), Stats., states that the governing body of the governmental unit responsible for the regulation of private sewage systems may assign the duties of administering the private sewage system program to any office, department, committee, board, commission, position or employee of that governmental unit.

(2) Except as provided in this chapter nothing shall limit the authority and power of a governmental unit in exercising administration and enforcement responsibilities regarding a POWTS, including requiring and issuing other types of permits for activities not covered under this subchapter relating to sanitary permits.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 07−100: am. (2) Register September 2008 No. 633, eff. 10−1−08.

SPS 383.21 Sanitary permits. (1) GENERAL. (a) Pursuant to ss. 145.135 and 145.19, Stats., the installation or construction of a POWTS may not commence or continue unless all of the following have been fulfilled:

1. The owner of the property on which the POWTS is to be installed possesses a valid sanitary permit.

2. Plan approval for the POWTS has been obtained in accordance with s. SPS 383.22.

(b) The modification of an existing POWTS may not commence or continue unless the owner of the property on which the POWTS is located possesses a valid sanitary permit and has obtained plan approval for the modification under s. SPS 383.22, if the modification involves the addition or replacement of any of the following:

1. A POWTS holding component.

2. A POWTS treatment component.

3. A POWTS dispersal component.

(2) APPLICATION. (a) The application for a sanitary permit shall be made in a format prescribed by the department.

Note: Department forms required in this chapter are available for a nominal fee at telephone 800−DOC−SALE or Contact Through Relay or at docsales@doa.state.wi.us, or at no charge at the Department's Web site http://dsps.wi.gov through links to Safety and Buildings Division forms.

(b) 1. Except as provided in subd. 2., the application for a sanitary permit shall be submitted to the appropriate governmental unit where the POWTS is located or will be located.

2. The application for a sanitary permit shall be submitted to the department for a POWTS that is located or will be located on property owned by the state.

Note: Section 145.20 (2) (b), Stats., states that the governmental unit responsible for regulation of private sewage systems shall approve or disapprove applications for sanitary permits and assist applicants in preparing an approvable application.

(c) The application for a sanitary permit to the governmental unit shall be accompanied by all of the following:

1. At least one set of clear and legible plans and specifications delineating the information under s. SPS 383.22 (2) (a) 3. and (c).

2. A set of plans bearing the department's conditional approval and the approval letter issued by the department, if required to be reviewed by the department under s. SPS 383.22 (1).

3. Sufficient supporting information to determine whether the proposed design, installation and management of the POWTS or the proposed modification to an existing POWTS conforms with this chapter.

4. Documentation that the master plumber or the master plumber−restricted service who is to be responsible for the installation or modification of the POWTS has completed approved training or has documentation that approved training will be provided during the installation of the POWTS, if the application for the sanitary permit involves one or more of the technologies or methods specified in s. SPS 383.04 (1).

5. Documentation that maintenance requirements for the proposed POWTS technology or method have been recorded with the deed for the property, if the management plan for the installation or modification under s. SPS 383.54 (1) involves one or more of the following:

a. Evaluating or monitoring any part of the system at an interval of 12 months or less.

b. Servicing or maintaining any part of the system at an interval of 12 months or less.

6. Any other information as specified by local ordinance relating to POWTS installations.

7. A fee as specified by the governmental unit.

Note: Section 145.19 (2) to (6) reads:

"(2) FEE. No fee for a sanitary permit may be less than $61, or the amount determined under department rule. The governing body for the governmental unit responsible for the regulation of private sewage systems may establish a fee for a sanitary permit which is more than $61, or the amount determined under department rule. [Pursuant to s. SPS 302.67 (1), the minimum sanitary permit fee is $116.]

(3) COPY OF PERMIT FORWARDED TO THE DEPARTMENT. The governmental unit responsible for the regulation of private sewage systems shall forward a copy of each valid sanitary permit and $20, or the amount determined under department rule, of the fee to the department within 90 days after the permit is issued. [Pursuant to s. SPS 302.67 (2), $50 of the sanitary permit fee is to be forwarded to the department.]

(4) USE OF FEE. The portion of this fee retained by the governmental unit responsible for the regulation of private sewage systems shall be used for the administration of private sewage system programs.

(5) FEE ADJUSTMENT. The department, by rule promulgated under ch. 227, may adjust the minimum permit fee under sub. (2) and the fee portion forwarded under sub. (3).

(6) GROUNDWATER FEE. In addition to the fee under sub. (2), the governmental unit responsible for the regulation of private sewage systems shall collect a groundwater fee of $25 for each sanitary permit. The governmental unit shall forward this fee to the department together with the copy of the sanitary permit and the fee under sub. (3). The moneys collected under this subsection shall be credited to the environmental fund for environmental management."

(3) PROCESSING. (a) A sanitary permit may not be issued until the plans and specifications have been approved by the department or governmental unit having jurisdiction.

(b) A governmental unit may not issue a sanitary permit for the installation or modification of the POWTS that involves one or more of the technologies or methods specified in s. SPS 383.04 (1) unless the master plumber or the master plumber−restricted who is to be responsible for the installation or modification has completed approved training or has documentation that approved training will be provided during the installation of the POWTS.

(c) A governmental unit shall review and make a determination on the submission of an application for a sanitary permit within 30 days after receiving all the required information and fees under sub. (2) (c).

(d) 1. If upon review of the application and the supporting information, the governmental unit or the department determines that the proposed design, installation and management of the POWTS or the proposed modification of an existing POWTS conforms with this chapter, a sanitary permit shall be issued.

2. a. If upon review of the application and the supporting information, the governmental unit or the department determines that the proposed design, installation and management of the POWTS or the proposed modification of an existing POWTS does not conform with this chapter, a sanitary permit may not be issued.

b. When the issuance of a sanitary permit is denied, the governmental unit or department reviewing the application shall provide in writing to the applicant the reasons for denial, a notice for the right to appeal and the procedures for appeal.

c. An applicant denied a sanitary permit by a governmental unit may appeal the decision in accordance with ch. 68, Stats.

d. The appeal of the denial by the department for a sanitary permit shall be made in writing within 30 days from the date of the decision.

(e) A sanitary permit shall be issued by the appropriate governmental unit or the department in a format prescribed by the department.

Note: See appendix for further information relative to the permit format.

(f) A governmental unit may deny the issuance of a sanitary permit only if the application does not comply with the requirements of chs. SPS 383, 384 or 385.

(4) TRANSFERS. A sanitary permit may be transferred from an owner to a subsequent owner, pursuant to s. 145.135 (1), Stats.

Note: Section 145.135 (1), Stats., reads in part:

"A sanitary permit may be transferred from the holder to a subsequent owner of the land, except that the subsequent owner must obtain a new copy of the sanitary permit from the issuing agent."

(5) EXPIRATION. Pursuant to s. 145.135 (1), Stats., a sanitary permit shall expire 2 years from the date of issuance unless renewed in accordance with sub. (6).

(6) RENEWALS. (a) 1. The application for renewal of a sanitary permit shall be made in a format prescribed by the department.

2. The application for renewal of a sanitary permit shall be submitted to the department or the appropriate governmental unit in accordance with sub. (2) (b).

(b) The renewal of a sanitary permit shall be contingent upon the proposed POWTS or the proposed modification of an existing POWTS conforming with the rules of this chapter in effect at the time the sanitary permit is renewed.

(6m) SUSPENSION. (a) A governmental unit may temporarily suspend a sanitary permit issued under this section if it is determined prior to construction that a POWTS cannot be installed based on the information that was available when the permit was issued.

(b) The suspension of the sanitary permit shall terminate no later than the date the sanitary permit expires.

(7) REVOCATION. (a) The department may revoke a sanitary permit issued under this section for any false statements or misrepresentation of facts on which the sanitary permit was issued.

(b) A governmental unit may revoke a sanitary permit that the governmental unit has issued under this section for any false statements or misrepresentation of facts on which the sanitary permit was issued.

(c) The revocation of a sanitary permit and the reasons for revocation shall be conveyed in writing to the individual to whom the sanitary permit was issued or transferred.

(d) If a sanitary permit is revoked, the installation or modification of a POWTS may not commence or continue until another sanitary permit is obtained.

(8) POSTING. When a sanitary permit is obtained under sub. (2), the sanitary permit shall:

(a) Be posted in such a location and manner on the proposed site where the POWTS is to be installed or modified so that the information on the permit is visible for inspection; and

(b) Remain posted until:

1. The POWTS installation or modification is completed; and

2. An opportunity for a final inspection occurs in accordance with s. SPS 383.26.

(9) PERMIT STORAGE. A governmental unit shall maintain a permanent record of each sanitary permit and permit application supporting information listed in s. SPS 383.21 (2) (c) until the property is no longer served by a POWTS.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: am. (2) (c) 4., (3) (b) and (c) Register January 2004 No. 577, eff. 2−1−04; CR 07−100: am. (2) (c) 4., cr. (3) (f), (6m) and (9) Register September 2008 No. 633, eff. 10−1−08; correction in (1) (a) 2., (b) (intro.), (2) (c) 1., 2., 4., 5., (3) (b), (f), (8) (b) 2., (9) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.22 Plan review and approval. (1) SUBMISSION OF PLANS. (a) Plans shall be submitted to the department, a designated agent or the governmental unit in accordance with this section for all of the following types of installations or modifications:

1. The installation or construction of a POWTS.

2. The replacement or addition of a POWTS treatment component.

3. The replacement or addition of a POWTS holding component.

4. The replacement or addition of a POWTS dispersal component.

(b) Plans for the types of POWTS delineated in Table 383.22−1 shall be submitted to the department for review.

(c) Plans for the types of POWTS delineated in Table 383.22−2 shall be submitted for review to the department or a designated agent.

Note: See s. SPS 383.23 for more information relative to designated agents.

(d) Plans for the types of POWTS delineated in Table 383.22−3 shall be submitted for review to the appropriate governmental unit where the POWTS is located or will be located.

Table 383.22−1
Plan Submissions to Department

	Type of Installation
1.	POWTS owned by the state.
2.	Facilities owned by the state and served by POWTS.
3.	POWTS that will not completely utilize treatment and dispersal technologies or methods either approved under s. SPS 384.10 (2) or (3) or recognized under s. SPS 383.60 (1).
4.	POWTS treating domestic wastewater combined with industrial wastes.[a]
5.	Experiments under s. SPS 383.27.

[a] See s. SPS 383.32 (3) (a).

Table 383.22−2
Plan Submissions to Department or Designated Agent

	Type of Installation
1.	POWTS that will completely utilize treatment and dispersal technologies or methods either approved under s. SPS 384.10 (2) or (3) or recognized under s. SPS 383.60 (1).
2.	POWTS that collect and hold all wastewater of the facilities served and utilize holding components designed based on ≥3,000 gpd estimated flow either recognized under s. SPS 384.10 (2) or (3) or recognized under s. SPS 383.60 (1).

Note: Pursuant to s. 145.19 (2), Stats., governmental units may require separate plan examination fees or include these fees in the cost of the sanitary permit.

Table 383.22−3
Plan Submissions to Governmental Unit

	Type of Installation
1.	POWTS that will serve not more than two one− or 2−family dwellings and their accessory buildings utilizing technologies or methods either recognized under s. SPS 384.10 (2) or (3) or recognized under s. SPS 383.60 (1), and using gravity distribution of the effluent to an in−ground distribution cell.
2.	POWTS that collect and hold all wastewater of the facilities served and utilize holding components designed based on <3,000 gpd estimated flow either recognized under s. SPS 384.10 (2) or (3) or recognized under s. SPS 383.60 (1).

Note: Pursuant to s. 145.19 (2), Stats., governmental units may require separate plan examination fees or include these fees in the cost of the sanitary permit.

(2) PLANS AND SPECIFICATIONS. (a) 1. When plans are submitted to the department for review, at least 3 sets of plans and one set of specifications shall be provided.

Note: Specifications for a project do not have to be a separate document but may be delineated on the plans.

2. When plans are submitted to a designated agent or governmental unit for review, at least 2 sets of plans and one set of specifications shall be provided.

3. Plans and specifications submitted for review shall be clear, legible and permanent copies.

4. Plans submitted for review shall include all of the following:

a. Details and configuration layouts depicting how the design is to be constructed and how the design is to accomplish the treatment in accordance with ss. SPS 383.43 and 383.44 and dispersal that is claimed or the holding of wastewater.

b. Specifications, including a description of the materials for the project and the installation or construction practices and methods to be employed.

c. A site plan with a bench mark either scaled or dimensioned, delineating all treatment and dispersal components and their relationship to any items listed in Table 383.43−1.

(b) 1. All plans submitted for review shall be accompanied by sufficient data and information to determine if the proposed POWTS or modification of an existing POWTS and their performance will conform with chs. SPS 382 to 384 including, but not limited to all of the following:

a. A plan review application form specified by the department.

Note: Department forms required in this chapter are available for a nominal fee at telephone 800−DOC−SALE or Contact Through Relay or at docsales@doa.state.wi.us, or at no charge at the Department's Web site http://dsps.wi.gov through links to Safety and Buildings Division forms.

b. The minimum and maximum wastewater flow and load of the proposed project and the method or rationale for determining the flow and load.

c. Documentation to support treatment and dispersal claims.

d. A management plan for the proposed design reflecting conformance to subch. V.

e. A soil and site evaluation report in accordance with s. SPS 385.40 for those POWTS components that consist in part of in situ soil.

f. A description of a contingency plan in the event the proposed POWTS fails and cannot be repaired.

2. In addition to the information required under subd. 1., plans for one or more holding tanks serving a large commercial, industrial, recreational or residential development with an estimated daily wastewater flow of 3,000 gallons or more shall include information pursuant to s. NR 113.07 (1) (e).

Note: Section NR 113.07 (1) (e) reads as follows:

Large commercial, industrial, recreational or residential development holding tank systems that singly or when added together or increased by successive additions generate 3000 gallons of septage per day or greater shall contract with a wastewater treatment facility for treatment of the septage. The contract terms shall provide assurance that the septage from the system will continually be conveyed to, and accepted, at the wastewater treatment facility. If a service area designation exists, the wastewater treatment facility shall amend the service area to include the commercial, industrial, recreational or residential development. The department may not indicate sufficient disposal capacity to the department of safety and professional services, until the service area adjustments have been completed and approved.

3. In addition to the information required under subd. 1., plans for a POWTS that is to serve a dwelling where the design of the POWTS is not based upon the number of bedrooms within the dwelling shall be accompanied by information documenting that design condition on the deed for the property.

4. In addition to the information required under subd. 1., plans for an experimental POWTS shall be accompanied by information required under s. SPS 383.27 (3).

5. In addition to the information required under subd. 1., plans for a POWTS which is to serve more than one structure or building, other than two one− or 2−family dwellings and their accessory buildings located on a single parcel of land, shall be accompanied by information that does all of the following:

a. Describes the legal entity, public or private, that has responsibility for the operation and maintenance of the POWTS.

b. Includes a copy of a recorded legal document that identifies all the parties that have ownership rights and are responsible for the operation and maintenance of the POWTS.

6. a. In addition to the information required under subd. 1., plans for a POWTS with a design wastewater flow exceeding 12,000 gallons per day shall not be approved until documentation has been submitted to the department indicating that the department of natural resources has concurred with the design of the POWTS.

Note: The Wisconsin department of natural resources requires that a Wisconsin Pollutant Discharge Elimination System (WPDES) permit must be obtained prior to the start of operation for a POWTS with a design flow exceeding 12,000 gallons per day pursuant to ch. 283, Stats.

b. Solely for the purpose of determining the applicability of subd. 6. a., the design wastewater flow of 12,000 gpd shall be deemed equivalent to 85 bedrooms for residential dwellings, including one− and 2−family dwellings, multi−family dwellings and mobile homes.

c. Solely for the purpose of determining the applicability of subd. 6. a., the design wastewater flow of 12,000 gpd for commercial facilities shall be calculated using the estimated wastewater flows specified in A−383.43 (6) of the appendix.

d. Solely for the purpose of determining the applicability of subd. 6. a., for residential dwellings combined with commercial facilities the design wastewater flow of 12,000 gpd shall be calculated by prorating the number of bedrooms on the basis of 85 bedrooms equaling 12,000 gpd for the residential dwellings and using the estimated flow under s. SPS 383.43 (3) (a) and A−383.43 (6) of the appendix to calculate the design flow for the commercial facilities.

e. For the purpose of determining the applicability of subd. 6. a., the design wastewater flow of 12,000 gpd shall include the design wastewater flow of all POWTS that are located on the same property or on properties under the same ownership and where the perimeter of a distribution cell of a POWTS dispersal component for one POWTS is less than 1,500 feet from the perimeter of a distribution cell of a POWTS dispersal component of any other POWTS under the same ownership.

f. For the purpose of determining the applicability of subd. 6. a., the combined design wastewater flow shall include that of any existing POWTS which falls within the parameters of subd. 6. e.

g. Under subd. 6. a., the same ownership is defined to be a person, group of persons or a corporation which owns a majority interest in the properties where majority ownership is based upon a majority of the issued voting stock, a majority of the members if no voting stock is issued, a majority of the board of the directors or comparable governing body or participation of each general partner in the profits of a partnership.

(c) Plans and specifications which are required to be submitted for review under sub. (1) shall be one of the following:

1. Signed and sealed in accordance with s. A−E 2.02 by an individual who is registered by the department as an architect, engineer, designer of plumbing systems or designer of private sewage systems.

2. Signed, including license number, and dated by an individual who is responsible for the installation of the POWTS and who is licensed by the department as a master plumber or master plumber−restricted service.

(d) Plans submitted to the department for review shall be accompanied by a fee in accordance with ss. SPS 302.61 and 302.65.

(3) PLAN REVIEW PROCESS. (a) *Time limits.* Pursuant to s. SPS 302.07 (3), the department shall review and make a determination on an application for plan review within 15 business days.

(b) *Conditional approval.* 1. If, upon review, the applicable reviewing agency determines that the plans conform to this chapter and chs. SPS 382 and 384, a conditional approval shall be granted in writing.

2. All conditions indicating nonconformance to this chapter and chs. SPS 382 and 384 shall be corrected before or during installation.

(c) *Denial of approval.* If, upon review, the applicable reviewing agency determines that the plans do not conform to this chapter or chs. SPS 382 and 384, the request for conditional approval shall be denied in writing.

(4) REVISIONS. (a) A modification to the design of a POWTS for which a plan has been previously granted approval under sub. (3) (b) shall be submitted to the applicable reviewing agency for

review in accordance with this section, if the proposed modification involves any of the following:

1. A change in wastewater flow or contaminant load.

2. The replacement or addition of a POWTS component listed in Table 383.04−1.

3. The addition of a POWTS dispersal component.

4. A change to one or more dispersal components involving any of the following:

a. Location outside suitable evaluated areas or proposed depths or elevations.

b. Dimensions of any distribution cell or basal area.

c. Type of dispersal component.

d. Design of a pressure distribution component, except for changes to pumps, forcemain lengths, total dynamic head, (TDH), or pump control settings.

(b) A modification to the design of a POWTS for which a plan has been previously granted approval under sub. (3) (b) may be submitted to the governmental unit which issued the sanitary permit, if the proposed modification involves a change which is not listed in par. (a) and if the governmental unit agrees to review the proposed minor revision.

(c) The installer of a POWTS may not implement or undertake the proposed revisions under par. (a) or (b) until written approval is obtained from the applicable reviewing agency.

(d) Revisions to previously approved plans shall be reviewed in accordance with sub. (3).

(e) If revisions under par. (a) are submitted to and approved by the department, the owner of the site for the POWTS or the owner's agent shall file the revisions with the governmental unit which issued the sanitary permit.

(5) LIMITATION OF RESPONSIBILITY. A conditional approval of a plan by the department may not be construed as an assumption by the department of any responsibility for the design of the POWTS or any component of the system. The department does not hold itself liable for any defects in construction, or for any damages that may result from a specific installation.

(6) REVOCATION OF APPROVAL. (a) The department may revoke any plan approval issued under this section for any false statements or misrepresentation of facts on which the approval was based.

(b) The designated agent or governmental unit may revoke any plan approval issued by the designated agent or governmental units for any false statements or misrepresentation of facts on which the approval was based.

(c) The revocation of a plan approval and the reasons for revocation shall be conveyed in writing to the submitter of the plans as noted on the application.

(d) If a plan approval is revoked, the installation or alteration of a POWTS may not continue until another plan approval is obtained.

(7) EVIDENCE OF APPROVAL. (a) When plans are required to be approved by the department, designated agent or governmental unit under sub. (1), the plumber responsible for the installation of a POWTS or the modification of an existing POWTS shall keep at the construction site at least one set of plans bearing evidence of approval by the department, designated agent or governmental unit and at least one copy of specifications.

(b) The plans and specifications shall be maintained at the construction site until the POWTS installation or modification is completed and an opportunity for a final inspection occurs in accordance with s. SPS 383.26.

(c) The plans and specifications shall be made available to the department or the governmental unit upon request.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: am. (2) (b) 6. a. and e. and (4) (a) (intro.), r. (4) (a) 4. c., renum. and am. (4) (a) 4. d. to be (4) (a) 4. c., cr. (4) (e) Register January 2004 No. 577, eff. 2−1−04; CR 06−119: am. (3) (a) Register July 2007 No. 619, eff. 8−1−07; CR 07−100: am. Tables 83.22−1 to 3, (2) (a) 1., (b) 5. (intro.), (4) (a) and (7) (a), renum. (2) (a) 2. and 3. and (4) (b) to (d) to be (2) (a) 3. and 4. and (4) (c) to (e) and am. (4) (c) and (e), cr. (2) (a) 2. and (4) (b), r. (4) (e) Register September 2008 No. 633, eff. 10−1−08; correction in (1) (b), (c), (d), (2) (a) 4. a., c., (b) 1. (intro.), e., 4., 6. c., d., (c) 1., (d), (3) (a), (b) 1., 2., (c), (4) (a) 2., (7) (b), Table 383.22−1, Table 383.22−2, Table 383.22−3 made under s. 13.92 (4) (b) 6., 7., Stats., Register December 2011 No. 672.

SPS 383.23 Review agent status. (1) Upon request from a governmental unit, the department may delegate to the governmental unit the responsibility to review plans for one or more of the types of POWTS delineated in Table 383.22−2 which are to be or are located within the jurisdiction of that governmental unit.

(2) A request by a governmental unit to review plans for the types of POWTS delineated in Table 383.22−2 shall be made in writing. The request shall include all of the following:

(a) The types of POWTS for which delegation is desired.

(b) Information delineating how the plans are to be processed and reviewed.

(c) Information on how plan review decisions are to be recorded and maintained.

(3) The delegation of plan review by the department shall be contingent upon a governmental unit's request demonstrating sufficient capabilities to complete the reviews, including all of the following:

(a) The utilization of one or more individuals who are certified by the department as a POWTS inspector to perform the plan review.

(b) The utilization of one or more individuals, who are certified soil testers, to provide assistance in the plan review process.

Note: The requirements of this subsection do not require the utilization of 2 individuals to perform plan review. A single individual who holds a certification as a certified POWTS inspector and as a certified soil tester may fulfill the requirements under pars. (a) and (b).

(4) (a) The department shall provide the governmental unit with a written decision of delegation or denial of delegation relative to a request under this section concerning plan review.

(b) The department may deny a request for plan review delegation, if the governmental unit has not completed a POWTS inventory or is not operating a maintenance program required under s. SPS 383.255.

(c) The delegation for plan review shall be contingent upon the governmental unit acknowledging that the submission and review of plans under s. SPS 383.22 (1) may, at the discretion of the submitter, be made to the department or the designated agent.

(5) The department shall include as part of governmental unit audits conducted under s. 145.20 (3) (b), Stats., an evaluation of the plan review functions which are delegated to a governmental unit under this section.

(6) A governmental unit that wishes to discontinue the delegated plan review function under this section shall notify the department in writing at least 30 days prior to the discontinuance.

(7) (a) The recognition as a review agent may be revoked by the department in accordance with s. 145.20 (3) (a) 2., Stats.

(b) The department may revoke the delegation as a plan review agent, if the governmental unit has not completed a POWTS inventory or is not operating a maintenance program required under s. SPS 383.255.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: am. (3) (a) and (b) Register January 2004 No. 577, eff. 2−1−04; CR 07−100: renum. (4) (b) and (7) to be (4) (c) and (7) (a), cr. (4) (b) and (7) (b) Register September 2008 No. 633, eff. 10−1−08; correction in (1), (2) (intro.), (4) (b), (c), (7) (b) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.24 Petitions for variance. (1) The department shall consider and may grant a variance to a provision of this chapter in accordance with ch. SPS 303.

Note: The petition for variance process is to allow the owner of a proposed or existing POWTS to ask the department's recognition of an alternative method or means for complying with the intent of a specific rule.

(2) (a) Pursuant to s. 145.24, Stats., the department may not approve a petition for variance for an existing POWTS which is

determined to be a failing private onsite wastewater treatment system.

(b) For the purposes of this subsection, the department shall consider a petition for variance if the existing POWTS is not considered a failing private onsite wastewater treatment system.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; correction in (1) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.25 Governmental programs. (1) DELEGATION OF RESPONSIBILITIES. (a) Pursuant to s. 145.20 (1) (am), Stats., the delegation by a governmental unit of the administration and enforcement of this chapter to a town sanitary district or public inland lake protection and rehabilitation district shall be by ordinance.

(b) A copy of an ordinance delegating administration and enforcement of this chapter to a town sanitary district or public inland lake protection and rehabilitation district shall be forwarded to the department at least 30 days prior to the effective date of the ordinance.

(2) ISSUANCE OF BUILDING PERMITS. (a) *General.* Pursuant to s. 145.195, Stats., the issuance of building permits by a municipality for unsewered properties shall be in accordance with this subsection.

Note: See appendix for a reprint of s. 145.195, Stats.

(b) *New construction.* A municipality may not issue a building permit to commence construction or installation of a structure that necessitates the use of a POWTS to serve the structure, unless:

1. The owner of the property possesses a sanitary permit for the installation of a POWTS in accordance with s. SPS 383.21; or

Note: Section SPS 383.21 outlines the procedures for the issuance of sanitary permits. Sections 145.135 and 145.19, Stats., mandate that no private sewage system may be installed unless the owner of the property holds a valid sanitary permit.

2. A POWTS of adequate capability and capacity to accommodate the wastewater flow and contaminant load already exists to serve the structure.

Note: See ss. SPS 383.02 and 383.03 concerning the application of current code requirements to existing POWTS.

(c) *Construction affecting wastewater flow or contaminant load.* 1. A municipality may not issue a building permit to commence construction of any addition or alteration to an existing structure when the proposed construction will modify the design wastewater flow or contaminant load, or both, to an existing POWTS, unless the owner of the property:

a. Possesses a sanitary permit to either modify the existing POWTS or construct a POWTS to accommodate the modification in wastewater flow or contaminant load, or both; or

b. Provides documentation to verify that the existing POWTS is sufficient to accommodate the modification in wastewater flow or contaminant load, or both.

2. For the purpose of this paragraph, a modification in wastewater flow or contaminant load shall be considered to occur:

a. For commercial facilities, public buildings, and places of employment, when there is a proposed change in occupancy of the structure; or the proposed modification affects either the type or number of plumbing appliances, fixtures or devices discharging to the system; and

b. For dwellings, when there is an increase or decrease in the number of bedrooms.

(d) *Documentation of existing capabilities.* Documentation to verify whether an existing POWTS can accommodate a modification in wastewater flow or contaminant load, or both, shall include at least one of the following:

1. A copy of the plan for the existing POWTS that delineates minimum and maximum performance capabilities and which has been previously approved by the department or the governmental unit.

2. Information on the performance capabilities for the existing POWTS that has been recognized through a product approval under ch. SPS 384.

3. A written investigative report prepared by an architect, engineer, designer of plumbing systems, designer of private sewage systems, master plumber, master plumber−restricted service or certified POWTS inspector analyzing the proposed modification and the performance capabilities of the existing POWTS.

(e) Where the performance capability of the existing POWTS serving a dwelling is not based on the number of bedrooms within the dwelling, information documenting that design condition shall be recorded as a covenant running with the deed for the property.

(f) *Setbacks.* 1. A municipality may not issue a building permit for construction of any structure or addition to a structure on a site where there exists a POWTS, unless the proposed construction conforms to the applicable setback limitations under s. SPS 383.43 (8) (i).

2. The applicant for a building permit shall provide documentation to the municipality issuing the building permit showing the location and setback distances for the proposed construction relative to all of the following:

a. Existing POWTS treatment components.

b. Existing POWTS holding components.

c. Existing POWTS dispersal components.

Note: A municipality that issues building permits may delegate to the governmental unit responsible for issuing sanitary permits the determination of whether the proposed construction will affect or interfere with an existing POWTS relating to capability or location of the existing POWTS.

Note: See appendix for further information regarding setbacks.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: am. (2) (a) Register January 2004 No. 577, eff. 2−1−04; CR 07−100: renum. (2) (e) to be (2) (f), cr. (2) (e) Register September 2008 No. 633, eff. 10−1−08; correction in (2) (b) 1., (d) 2., (f) 1. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.255 Governmental inventory and maintenance program. (1) (a) 1. A governmental unit shall conduct, complete and maintain an inventory of all POWTS located in their jurisdictional area within 3 years after October 1, 2008.

2. The inventory shall be updated as existing POWTS are identified and new POWTS are installed or constructed.

(b) At a minimum, a POWTS inventory shall consist of all of the following elements:

1. Legal description of all properties including tax parcel number where a POWTS is located within the governmental unit jurisdictional area.

2. Name and address of the owner of each POWTS located within the governmental unit jurisdictional area.

Note: The inventory does not require site visits, identification of the type of POWTS or an evaluation of the POWTS.

(2) (a) A governmental unit shall develop and implement a comprehensive POWTS maintenance program within 5 years after October 1, 2008.

(b) At a minimum, a POWTS maintenance program shall consist of all of the following elements:

1. An inventory of all POWTS located within the governmental unit jurisdictional area.

2. A process that accepts and records inspection, evaluation, maintenance and servicing reports submitted by the POWTS owner or the owner's agent for POWTS listed in the governmental unit inventory.

3. A process that accepts and creates a record for each inspection, evaluation, maintenance and servicing report for a POWTS within the governmental unit jurisdictional area but not listed in the governmental unit inventory that is submitted by the POWTS owner or the owner's agent.

4. A process that notifies POWTS owners that are delinquent in submitting reports for inspection, evaluation, maintenance and servicing activities listed in ss. SPS 383.54 (3) and (4) and 383.55.

5. A process that includes measures meant to ensure that required inspection, evaluation, maintenance and servicing is performed and the results are reported to the governmental unit.

6. Reports summarizing the results of the maintenance program on an annual basis in a format requested by the department.

Note: Pursuant to s. 145.245 (9) (a), Stats., a governmental unit must comply with the maintenance provisions of this section as a condition for obtaining Wisconsin Fund grants.

(3) A governmental unit shall make available to the department, upon request, any and all records necessary to ascertain compliance with this chapter and the provisions as specified in s. 145.20 (2) (i), Stats.

History: CR 07−100: cr. Register September 2008 No. 633, eff. 10−1−08; correction in (2) (b) 4. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.26 Inspections and testing. (1) (a) Pursuant to s. 145.02 (3) (c), Stats., the department or governmental unit may inspect the construction, installation, operation or maintenance of a POWTS to ascertain whether the POWTS conforms to plans approved by the department or governmental unit, the conditions of approval and this chapter.

(b) The department may issue an order directing an immediate cessation of the installation of a POWTS or the modification to an existing POWTS for failure to comply with a corrective order.

(c) Pursuant to ss. 145.02 (3) (f) and 145.20 (1) (a) and (2) (f), Stats., an individual authorized by the department or a governmental unit to administer and enforce this chapter may issue orders to abate human health hazards relating to this chapter.

Note: Section SPS 305.66 delineates qualifications and responsibilities for POWTS inspectors.

(d) Pursuant to s. 145.20 (2) (e) and (g), Stats., nothing in this chapter shall limit a governmental unit's authority and power to inspect or require an evaluation of a POWTS, including an existing POWTS at times or for activities not covered under this section.

(2) (a) When a sanitary permit is required under s. SPS 383.21 (1), no part of a POWTS component may be covered nor any POWTS component put into service until the governmental unit or the department has had an opportunity to inspect the system in accordance with this subsection.

Note: Pursuant to s. 145.20 (2), Stats., an individual authorized by a governmental unit to administer and enforce the provisions of chs. SPS 382 to 387 relative to POWTS is required to be a certified POWTS inspector under s. SPS 305.66.

(b) The master plumber or the master plumber−restricted service responsible for the installation of a POWTS or the modification to an existing POWTS shall notify the governmental unit when the work will be or is ready for inspection. The notification shall be in person, in writing or by telephone or other electronic communication in a format acceptable to the governmental unit performing the inspection.

(c) The master plumber or the master plumber−restricted service responsible for the installation of a POWTS or the modification shall maintain records of the inspection notifications. The records shall include the date and time of notification and the name of the person contacted.

(d) The master plumber or master plumber−restricted service responsible for the POWTS installation or modification shall provide the necessary equipment and properly licensed personnel required for the inspection as requested by the governmental unit or department.

(e) If an inspection is not made by the end of the next workday, excluding Saturdays, Sundays and holidays, after the requested inspection day, the master plumber or the master plumber−restricted service may proceed with the installation of the POWTS, including backfilling and covering.

(3) Pursuant to s. 145.20 (2) (g), Stats., a governmental unit by ordinance may require other inspections in addition to that specified under this section.

(4) A governmental unit shall maintain a written record of each inspection conducted for a POWTS. The record shall include information relative to all of the following:

(a) The location of the POWTS.

(b) The date of the inspection.

(c) The nature and findings of the inspection.

(5) Before being put into service, components of a POWTS shall be tested in accordance with the manufacturer's specifications or as specified as a condition of approval under ss. SPS 383.22 and 384.10.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; correction in (2) (a), (5) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.27 Experiments. (1) The provisions of this chapter or ch. SPS 384 are not intended to prevent the design and use of an innovative method or concept for the treatment or dispersal of domestic wastewater which is not specifically addressed by this chapter, provided the experiment has been first approved by the department in accordance with s. SPS 384.50 (3).

(2) The department shall review a submittal of an experiment under this section with input from the technical advisory committee assembled under s. SPS 384.10 (3) (d).

(3) The protocol for a proposed experiment submitted to the department for consideration shall include all of the following:

(a) The experiment shall be supervised by a professional who has experience in small−scale wastewater treatment.

(b) The professional shall submit a vita of training and experience relative to small−scale wastewater treatment along with the application for the experiment.

(c) A proposal shall be submitted for the experiment that includes at least all of the following:

1. The purpose of the experiment.

2. The theory and science behind the proposed experiment including a description of the systems or processes to be used as part of the experiment.

3. The number of systems or components to be installed or modified as part of the experiment.

4. The identification of the initial sites, if known, that will take part in the experiment.

5. A letter of comment from the governmental unit or units where the experiment is to be conducted.

6. The data to be collected and the method to be employed to collect the data.

7. The duration of the proposed experiment.

(d) The experiment may not involve less than 5, and not more than 50 individual installations.

(e) An experiment shall be designed to provide definitive results within 5 years from the start of the experiment.

(f) An experiment on a site not previously developed shall include a contingency plan that provides for a code complying replacement POWTS, if the experiment fails to meet the required performance standards of this chapter.

(g) If the experiment is approved, the experimenter shall execute a signed agreement with the department setting forth the obligations of the parties.

(h) Within 6 months of the completion of the experiment, the results or conclusions shall be forwarded to the department.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; correction in (1), (2) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.28 Penalties. Penalties for violations of this chapter shall be assessed in accordance with s. 145.12, Stats.

Note: Section 145.12 (4), Stats., indicates that any person who violates any order under s. 145.02 (3) (f) or 145.20 (2) (f) or any rule or standard adopted under s. 145.13 shall forfeit not less than $10 nor more than $1,000 for each violation. Each violation

of an order under s. 145.02 (3) (f) or 145.20 (2) (f) or any rule or standard adopted under s. 145.13 constitutes a separate offense and each day of continued violation is a separate offense.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00.

SPS 383.29 Range of responses. (1) (a) Pursuant to s. 160.21, Stats., the department shall respond with any one or more of the actions delineated under Table 383.29 if the preventive action limits or enforcement standards enumerated in ch. NR 140 Tables 1 and 2 are exceeded at a point of standards application as a result of the performance of a POWTS, including a POWTS existing prior to July 1, 2000, except as provided in par. (b).

(b) Pursuant to s. 160.255, Stats., the design, installation, use or maintenance of a POWTS is not required to comply with the nitrate standard specified in ch. NR 140 Table 1, except as provided under s. SPS 383.03 (5).

Table 383.29
Department Range of Responses

- Gather more data relative to the cause and significance of the exceedance.
- Determine whether the situation is a human health hazard.
- Issue orders to change or comply with the management or maintenance plan of a specific POWTS or type of onsite wastewater system.
- Issue orders to conform with this chapter, including the prohibition of an activity or practice.
- Determine whether the exceedance is an isolated problem, or is likely to recur.
- Revise or revoke a product approval issued under ch. SPS 384 for a treatment or dispersal component.
- Revise the rules of this chapter or ch. SPS 381, 382, 384 or 385.

(2) Pursuant to s. 160.21 (2), Stats., the point of standards application relative to the performance of POWTS shall be:

(a) Any point of present groundwater use for potable water supply; and

(b) Any point beyond the boundary of the property on which the facility, practice or activity is located.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: am. (1) (a) Register January 2004 No. 577, eff. 2−1−04; correction in (1) (a), (b), Table 383.29 made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

Subchapter III — General Requirements

SPS 383.30 Purpose. This subchapter establishes parameters for the types of POWTS that may be used and how a POWTS may be used.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00.

SPS 383.31 Principles. A POWTS shall be operated and used in such a manner so as not to render the POWTS inoperative or beyond its capabilities, and thereby, create a human health hazard.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00.

SPS 383.32 Prohibitions and limitations. (1) PROHIBITIONS. (a) Except as provided in s. SPS 383.03 (4), the introduction of wastewater or substances in such quantities or concentrations to a POWTS, including a POWTS existing prior to July 1, 2000, that results in exceeding the enforcement standards and preventive action limits specified in ch. NR 140 Tables 1 and 2 at a point of standards application shall be prohibited.

Note: Section SPS 383.03 (4) reads:

(4) GROUNDWATER STANDARDS. (a) Pursuant to s. 160.255, Stats., the design, installation, use or maintenance of a POWTS is not required to comply with the nitrate standard specified in ch. NR 140 Table 1, except as provided under sub. (5).

(b) Pursuant to s. 160.19 (2) (a), Stats., the department has determined that it is not technically or economically feasible to require that a POWTS treat wastewater to comply with the preventive action limit for chloride specified in ch. NR 140, Table 2, as existed on June 1, 1998.

(c) Substances deleterious to a POWTS shall be intercepted, diluted or treated in accordance with s. SPS 382.34 prior to the substance discharging into a POWTS.

(d) The use of a cesspool as a POWTS is prohibited, including any cesspool existing prior to July 1, 2000.

(e) The final discharge of domestic wastewater or POWTS effluent to open bodies of water is prohibited, including by means of plumbing outfall pipes existing prior to July 1, 2000.

(f) The final discharge of domestic wastewater or POWTS effluent to the ground surface is prohibited, including by means of plumbing outfall pipes existing prior to July 1, 2000.

(g) The infiltrative surface of a treatment or dispersal component of a POWTS existing prior to December 1, 1969, which consists in part of soil may not be located in bedrock or groundwater.

(h) The use of camping unit transfer containers as a POWTS holding component shall be restricted to any of the following sites:

1. Campgrounds permitted by the department of health services under ch. DHS 178.

2. Properties where the use of the camping unit transfer container is permitted by an adopted governmental unit ordinance and monitored by the governmental unit.

(2) LOCAL PROHIBITIONS. (a) A municipality may by ordinance prohibit or limit the installation and use of the following technologies, designs or methods as POWTS components:

1. A holding tank.

2. A constructed wetland as a POWTS treatment component.

3. An evapotranspiration bed as a POWTS treatment component.

(b) A municipality may enact ordinances that are more restrictive than the applicable state minimum standards for those POWTS existing prior to December 1, 1972, except as provided in s. SPS 383.03 (2) (b) 2.

Note: The date, December 1, 1972, reflects the point in time at which the state plumbing code became a state−wide uniformly applied code rather than just a minimum standard. Since December 1, 1969 to July 1, 2000, the state plumbing code required 36 inches of soil between the infiltrative surface of a POWTS and high groundwater or bedrock.

(c) A municipality may by ordinance restrict the ownership of a POWTS to a governmental entity or agency when the POWTS is to serve 2 or more structures or buildings that are located on more than one property.

(3) LIMITATIONS. (a) Industrial wastes and wastewater may not, unless approved by the department of natural resources, be introduced into a POWTS.

Note: The department of natural resources regulates the discharge of industrial wastes to land treatment systems under ch. NR 214. Section NR 214.02 reads in part:

"This chapter applies to those discharges of industrial wastes to land treatment systems not regulated under ch. NR 518. This includes but is not limited to liquid wastes, by−product solids and sludges generated by: fruit and vegetable processing, dairy products processing, meat, fish and poultry products processing, mink raising operations, aquaculture, commercial laundromat and motor vehicle cleaning operations and any other industrial, commercial or agricultural operation which results in a point source discharge that has no detrimental effects on the soils, vegetation or groundwater of a land treatment system."

(b) Storm and clear water may be introduced into a POWTS, if the POWTS is designed to accept that wastewater. A POWTS may accept wastewater permitted under s. SPS 382.36 (3).

Note: Section SPS 382.36 (3) (a) permits the discharge of a maximum of 50 gallons per day of clear water wastes to a sanitary drain system connected to a publicly owned treatment works.

(c) Except as provided in ss. NR 116.12 (1) (e) and 116.15 (2) (b), no part of a POWTS may be installed in a floodway.

Note: See s. SPS 383.45 (6) for installations in a floodfringe.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: am. (1) (e) and (f), (3) (a) and (b) Register January 2004 No. 577, eff. 2−1−04; CR 07−100: renum. (1) (h) to be (1) (h) (intro.) and am., cr. (1) (h) 1. and 2., am. (3) (c) Register September 2008 No. 633, eff. 10−1−08; correction in (1) (h) 1. made under s. 13.92 (4) (b) 6., Stats., Register September 2008 No. 633; correction in (1) (h) 1. made under

s. 13.92 (4) (b) 7., Stats., Register December 2010 No. 660; correction in (1) (a), (c), (2) (b), (3) (b) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.33 Abandonment. A subsurface tank or pit that is no longer used as a POWTS component shall be abandoned by complying with all of the following:

(1) Disconnecting all piping to the tanks and pits.

(2) Sealing all disconnected piping to the tanks and pits in accordance with s. SPS 382.21 (2) (h).

(3) Pumping and disposing of the contents from all tanks and pits.

Note: The disposal of the contents from treatment tanks, distribution tanks, seepage pits and holding components is addressed in ch. NR 113 which is administered by the department of natural resources.

(4) Removing all tanks or removing the covers of the tanks or pits and filling the tanks and pits with soil, gravel or an inert solid material.

Note: Pursuant to s. 281.45, Stats., municipalities and sanitary districts may determine the availability of, and require connection to, public sewers. Section 281.45, Stats., reads in part:

"HOUSE CONNECTIONS. To assure preservation of public health, comfort and safety, any city, village or town or town sanitary district having a system of waterworks or sewerage, or both, may by ordinance require buildings used for human habitation and located adjacent to a sewer or water main, or in a block through which one or both of these systems extend, to be connected with either or both in the manner prescribed. If any person fails to comply for more than 10 days after notice in writing the municipality may impose a penalty or may cause connection to be made, and the expense thereof shall be assessed as a special tax against the property."

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; correction in (2) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

Subchapter IV — Design and Installation

SPS 383.40 Purpose. This subchapter establishes minimum parameters for the design and installation of a POWTS for the purpose of:

(1) Safeguarding public health;

(2) Minimizing the level of substances which have a reasonable probability of entering waters of the state; and

(3) Delineating measures, conditions and performance standards by which to evaluate designs.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00.

SPS 383.41 Principles. (1) A POWTS shall be designed to hold wastewater or reduce the contaminant load and disperse the flow of wastewater as specified in this subchapter.

Note: See s. SPS 382.34 (15) for requirements relating to special wastewater or mixed wastewater treatment or containment devices.

(2) A POWTS shall be designed to have sufficient capacity to accommodate the anticipated quantities of wastewater that will be discharged into the system.

(3) A POWTS intended to treat and disperse wastewater shall be designed to have sufficient ability to treat or separate out the anticipated types, quantities and concentrations of wastewater contaminants to be discharged into the system so that the dispersed wastewater will not create a human health hazard.

(4) A POWTS shall be designed to disperse wastewater below the surface of the ground at a rate that promotes long term assimilation into the soil and limits the possibility of surfacing.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00.

SPS 383.42 Application. (1) DESIGN BASIS. The design of a POWTS shall be based on the methods and limitations outlined in this subchapter or on other documented data acceptable to the department.

(2) DESIGN RELATION TO ACTUAL FLOWS AND CONTAMINANT LOADS. For any situation where it is known that the wastewater flow or contaminant load exceeds the parameters of this subchapter, the POWTS shall be designed in relation to the known flow or load.

(3) DESIGN CONSIDERATIONS. The evidence to support assertions relative to contaminant reduction and hydraulic dispersal shall include at least all of the following:

(a) The flow and contaminant load of the influent wastewater.

(b) The ability of all treatment and dispersal components to reduce contaminant load and disperse hydraulic flow into the environment.

(c) The flow velocities and friction losses throughout the system based upon accepted engineering practice.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00.

SPS 383.43 General requirements. (1) MATERIALS. The components of a POWTS shall be constructed of materials and products that are of a type recognized under this chapter or ch. SPS 384.

(2) DESIGN FLOW. In order to accommodate peak wastewater flow, the design wastewater flow of a POWTS shall equal at least 150% of the estimated daily flow generated from the source or sources, unless otherwise approved by the department.

(3) ESTIMATED DAILY COMBINED FLOW FOR A POWTS SERVING A DWELLING. The estimated daily wastewater flow of combined graywater, clear water and blackwater from a dwelling shall be based on one or more of the following:

(a) The following equation:

$$100 \text{ gallons} \times B = F$$

Where: B = number of bedrooms, based on 2 persons per bedroom, unless otherwise approved by the department.

F = Estimated daily wastewater flow per dwelling per day (in gallons), excluding storm water discharges.

(b) A detailed estimate of wastewater flow based upon per capita occupancy or usage of the dwelling or per function occurrence within the dwelling.

(4) ESTIMATED DAILY SEGREGATED GRAYWATER FLOW FOR A POWTS SERVING A DWELLING. The estimated daily wastewater flow of graywater and clear water from a dwelling shall be based on one or more of the following:

(a) The following equation:

$$60 \text{ gallons} \times B = F$$

Where: B = number of bedrooms, based on 2 persons per bedroom, unless otherwise approved by the department.

F = Estimated daily graywater flow per dwelling per day (in gallons), excluding storm water discharges.

(b) A detailed estimate of graywater flow based upon per capita occupancy or usage of the dwelling or per function occurrence within the dwelling.

(5) ESTIMATING SEGREGATED BLACKWATER FLOW FOR A POWTS SERVING A DWELLING. The estimated daily wastewater flow of blackwater from a dwelling shall be based on one or more of the following:

(a) The following equation:

$$40 \text{ gallons} \times B = F$$

Where: B = number of bedrooms, based on 2 persons per bedroom, unless otherwise approved by the department.

F = Estimated daily blackwater flow per dwelling per day (in gallons).

(b) A detailed estimate of blackwater flow based upon per capita occupancy or usage of the dwelling or per function occurrence within the dwelling.

(6) ESTIMATING WASTEWATER FLOW FOR COMMERCIAL FACILITIES. The estimated daily wastewater flow of clear water, graywater, blackwater, or combined graywater−blackwater flow from

public buildings and places of employment shall be based on one or more of the following:

(a) Measured daily wastewater flow over a period of time representative of the facility's use or occupancy.

(b) A detailed estimate of wastewater flow based upon per capita occupancy or usage of the facility or per function occurrence within the facility.

Note: See appendix for further information.

(7) ESTIMATING CONTAMINANT LOADS. Estimates of contaminant loads from dwellings and public facilities shall be based on a detailed analysis including all contaminants listed in s. SPS 383.44 (2) (a).

Note: See appendix for further information.

Note: See Note under s. SPS 383.32 (3) for information relative to industrial wastes.

(8) GENERAL DESIGN REQUIREMENTS. (a) *Flow velocity.* 1. Piping within a POWTS shall be designed and installed to supply wastewater to POWTS treatment and dispersal components while maintaining the velocity required to ensure operation of the POWTS.

2. Gravity flow piping between POWTS components shall be installed at a pitch that produces a computed flow velocity of at least one foot per second when flowing half full.

3. Pressurization equipment or devices and piping to be utilized upstream of a POWTS treatment or dispersal component consisting in part of in situ soil shall be designed and installed to produce a computed velocity of at least 2 feet per second.

4. Gravity piping within a POWTS treatment or dispersal component consisting in part of in situ soil shall be installed level or pitched downstream a maximum 4 inches per 100 feet.

(b) *Distribution and drain pipe sizing.* The piping within a POWTS shall be of a diameter to permit the operation of the POWTS.

(c) *Frost protection.* All POWTS components shall be protected from freezing temperatures that could detrimentally affect component operation to provide wastewater conveyance, treatment or dispersal.

(d) *Component placement.* The orientation of a POWTS treatment or dispersal component consisting in part of in situ soil shall take into account landscape variations in elevation, slope orientation, and other conditions that could affect component performance relative to dispersal or aeration.

(e) *Alarms or warning systems.* 1. a. A POWTS component utilizing a mechanical device to treat wastewater or to distribute effluent shall be provided with an automatic visual or audible means of notifying the user of the POWTS of the failure of the mechanical device.

Note: In accordance with s. SPS 316.300 (1) (a), an alarm that is electrically powered is to be on a separate circuit from the circuit supplying power to the mechanical device.

b. An alarm indicating the failure of a pump shall remain audible or visible until manually turned off.

c. Where duplex pumping equipment is employed to provide continuous component operation in the event that one pump fails, the pumps shall be installed in such a manner so as to provide the continuous operation automatically.

2. A POWTS holding tank shall be provided with an automatic visual or audible means of notifying the user of the POWTS of the necessity for servicing.

(f) *Accessibility.* The design of a POWTS shall include provisions to provide access to all components that require maintenance or observation.

(g) *Anchoring system components.* An exterior subsurface POWTS treatment tank or POWTS holding component to be installed in an area subject to saturated conditions shall be installed so as to prevent flotation of the tank or component.

Note: See appendix for further information.

(h) *Treatment byproducts.* 1. All treatment byproducts discharged from or as a result of operating a POWTS shall be disposed of so as not to create a human health hazard.

Note: The disposal of the contents of holding tanks and the sludge, scum, and contaminated liquids from treatment tanks and components is regulated by the department of natural resources under chs. NR 113 and NR 204.

2. Deleterious or hazardous materials segregated out from effluent flows shall be disposed of in a manner conforming with the rules of the state agency having jurisdiction.

3. Effluent from a POWTS shall be dispersed so as not to create a human health hazard.

4. All POWTS components within a building or structure shall be gas tight unless provisions are made assuring the safety of individuals entering the building or structure.

(i) *Site parameters and limitations.* POWTS treatment, holding and dispersal components shall be located so as to provide the minimum horizontal setback distances as outlined in Table 383.43−1 as safety factors for public health, waters of the state and structures in the event of component failure.

Note: Chapter NR 812 establishes upslope location criteria for wells relative to contamination sources.

Table 383.43−1

Horizontal Setback Parameters

Physical Feature	POWTS Treatment Component Consisting in Part of In Situ Soil or Dispersal Component	Exterior Subsurface Treatment Tank or Holding Tank Component	Servicing, Suction Lines and Pump Discharge Lines
Building	10 feet	5 feet[a]	none[b]
Property Line[c]	5 feet	2 feet	2 feet
Swimming Pool	15 feet	none[b]	none[b]
OHWM of Navigable Waters	50 feet	10 feet	10 feet
Water Service and Private Water Main	10 feet	10 feet	10 feet
Public Water Main	ch. NR 811	ch. NR 811	ch. NR 811
Well	chs. NR 811 & 812	chs. NR 811 & 812	chs. NR 811 & 812

OHWM = Ordinary High−Water Mark

[a] Except camping unit transfer containers.

[b] See s. SPS 383.43 (8) (f) relative to accessibility.

[c] Road−right−of−way lines may be more restrictive than property lines.

Note: See s. SPS 382.365, Table 382.365−4 relative to horizontal setback distances to subsurface infiltrative systems.

Note: The department of transportation under s. Trans 233.08 establishes setback limits from the centerline of state trunk highways or connecting highways to structures and improvements which include septic systems.

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(j) *Service suction and discharge lines.* 1. A suction line or discharge line serving a holding tank for servicing purposes shall comply with all of the following:

a. A pipe serving as the suction or discharge line shall be of an acceptable type in accordance with ch. SPS 384.

b. A suction or discharge line shall terminate with a service port consisting of a quick disconnect fitting with a removable plug.

c. The service port of a suction or discharge line shall terminate at least 2 feet above final grade.

d. The service port of a suction or discharge line shall be identified as such with a permanent sign with lettering at least ½ inch in height.

e. The service port of a suction or discharge line shall be secured to a permanent support that is capable of withstanding the loads and forces placed on the port.

f. A suction or discharge line shall be at least 3 inches in diameter.

2. A suction line serving a holding tank may not be installed in such a manner or arrangement that the tank can be drained by gravity or siphonic action.

3. Where a lift station is employed for servicing a holding tank, the pump discharge line shall conform with subd. 1., except as provided in subd. 3. a. and b.

a. A discharge line from the lift station shall be at least 2 inches in diameter.

b. The lift station pump shall be activated by means of a keyed−switch at the service port.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: am. (2), (6) (intro.), and Table 83.43−1 Register January 2004 No. 577, eff. 2−1−04; CR 07−100: am. Table 83.43−1 Register September 2008 No. 633, eff. 10−1−08; correction in (1), (7), (8) (i), (j) 1. a., Table 383.43−1 made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.44 Parameters for POWTS components consisting of in situ soil. (1) EVALUATION. POWTS treatment and dispersal components consisting in part of in situ soil shall be evaluated in accordance with ch. SPS 385.

(2) INFLUENT QUALITY. (a) The quality of influent discharged into a POWTS treatment or dispersal component consisting in part of in situ soil shall be equal to or less than all of the following:

1. A monthly average of 30 mg/L fats, oil and grease.

2. A monthly average of 220 mg/L BOD_5.

3. A monthly average of 150 mg/L TSS.

(b) The monthly average under par. (a) shall be calculated as the sum of all measurements taken over 30 consecutive days, with at least 6 measurements occurring on 6 separate days, and divided by the number of measurements taken during that period.

(c) Influent discharged to a POWTS treatment or dispersal component that consists in part of unsaturated soil may not contain any solid or suspended solid exceeding 1/8 inch in diameter.

Note: Under s. SPS 383.03 (1) (b), the replacement of a POWTS anaerobic treatment tank (septic tank) in conjunction with this rule would limit any solids within the effluent leaving the tank to a maximum of 1/8−inch diameter.

(3) INFILTRATIVE SURFACE. (a) The infiltrative surface of unsaturated soil to which influent is discharged shall be located at least 24 inches above the estimated highest groundwater elevation and bedrock.

(b) 1. A POWTS designed utilizing a component manual recognized under s. SPS 383.60 (1) shall have at least 6 inches of the soil separation required under par. (a) consisting of an in situ soil type for which soil treatment capability has been credited under Table 383.44−3.

2. The purpose of the 6 inches of in situ soil under subd. 1. shall be to assure that the influent will be assimilated into the original subsurface soils without ponding on the ground surface.

(c) The infiltrative surface of unsaturated soil to which influent is discharged shall be located at least one inch below the finished grade.

(4) CAPABILITIES. (a) 1. a. Except as provided under subd. 2., the dispersal capability of a POWTS treatment or dispersal component consisting in part of unsaturated soil shall be limited to that specified in Table 383.44−1 or Table 383.44−2 based upon the influent quality concentrations being applied.

b. Under subd. 1. a., the influent quality parameter with the highest concentration shall determine the maximum application rate.

c. Except as provided in par. (c), the soil conditions at the infiltrative surface of unsaturated soil to which influent is to be discharged shall be used to establish the maximum application rate for a POWTS dispersal design.

d. The moist soil consistence of the soil horizon in which the infiltrative surface of a POWTS treatment or dispersal component will be located may not be stronger than firm or any cemented classification.

e. The maximum soil application for soil with moderate to strong platy structure shall not exceed 0.2 gals./sq. ft./day for effluent concentrations of ≤30 mg/L BOD_5 and TSS and shall be 0.0 gals./sq. ft./day for effluent concentrations of > 30 mg/L BOD_5 and TSS.

f. The application rates specified under Table 383.44−1 shall only be recognized where the percolation results have been filed with the governmental unit before July 2, 1994.

2. Maximum soil application rates other than those specified in Tables 383.44−1 or 383.44−2 may be employed for the design of a POWTS treatment or dispersal component consisting in part of in situ soil if documentation is submitted and approved under s. SPS 383.22 and is based on soil permeability and evapotranspiration estimates correlated to specific soil characteristics described in a detailed morphological soil evaluation.

(b) The treatment capability of a POWTS treatment component consisting of unsaturated soil shall be limited to that specified in Table 383.44−3, unless otherwise approved by the department.

(c) The design of a treatment or dispersal component consisting in part of in situ soil shall reflect restrictive soil horizons that affect treatment or dispersal.

(5) EFFLUENT DISTRIBUTION. (a) 1. Except as provided in subd. 2., the distribution of effluent to a treatment or dispersal component shall be by means of pressure distribution as specified in Tables 383.44−2 and 383.44−3.

2. Pressure distribution is not required when rehabilitating an existing non−pressurized in situ soil treatment or dispersal component that is persistently ponded and that has at least 24 inches of unsaturated soil beneath the infiltrative surface of the component.

(b) Each dose of effluent by means of pressurized distribution into a treatment or dispersal component consisting in part of in situ soil may not be less than 5 times the void volume of the POWTS distribution laterals.

Table 383.44−1
Maximum Soil Application Rates Based Upon Percolation Rates

Percolation Rate (minutes per inch)	Maximum Monthly Average: BOD_5 > 30mg/L ≤ 220 mg/L TSS > 30 mg/L ≤ 150 mg/L (gals/sq ft/day)	Maximum Monthly Average: BOD_5 ≤ 30 mg/L TSS ≤ 30 mg/L (gals/sq ft/day)
0 to less than 10	0.7	1.2
10 to less than 30	0.6	0.9
30 to less than 45	0.5	0.7
45 to less than 60	0.3	0.5
60 to 120	0.2	0.3
greater than 120	0.0	0.0

Note: > means greater than
≤ means less than or equal to

Table 383.44−2
Maximum Soil Application Rates Based Upon Morphological Soil Evaluation (in gals./sq. ft./day)

Soil Characteristics			Maximum Monthly Average			
Texture[d]	Structure[e]		BOD_5 >30 ≤220mg/L TSS >30 ≤150mg/L		BOD_5 ≤30 mg/L[c] TSS ≤30 mg/L[c]	
	Shape	Grade				
COS, S, LCOS, LS	−−−	0	0.7[a]	0.5[b,c]	1.6[a]	0.5[b]
FS, LFS	−−−	0	0.5		1.0	
VFS, LVFS	−−−	0	0.4		0.6	
COSL, SL	−−−	0M	0.2		0.6	
	PL	1	0.4		0.6	
		2, 3	0.0		0.2	
	PR, BK, GR	1	0.4		0.7	
		2, 3	0.6		1.0	
FSL, VFSL	−−−	0M	0.2		0.5	
	PL	2, 3	0.0		0.2	
	PL, PR, BK, GR	1	0.2		0.6	
	PR, BK, GR	2, 3	0.4		0.8	
L	−−−	0M	0.2		0.5	
	PL	2, 3	0.0		0.2	
	PL, PR, BK, GR	1	0.4		0.6	
	PR, BK, GR	2, 3	0.6		0.8	
SIL	−−−	0M	0.0		0.2	
	PL	2, 3	0.0		0.2	
	PL, PR, BK, GR	1	0.4[c]		0.6	
	PR, BK, GR	2, 3	0.6		0.8	
SI	−−−	−−−	0.0		0.0	
SCL, CL, SICL	−−−	0M	0.0		0.0	
	PL	1, 2, 3	0.0		0.2	
	PR, BK, GR	1	0.2		0.3	
		2, 3	0.4		0.6	
SC, C, SIC	−−−	0M	0.0		0.0	
	PL	1, 2, 3	0.0		0.0	
	PR, BK, GR	1	0.0		0.0	
		2, 3	0.2		0.3	

Note a: With ≤60% rock fragments
Note b: With >60 to <90% rock fragments
Note c: Requires pressure distribution under sub. (5) (a)

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Note d: COS − Coarse Sand
S−Sand
LCOS − Loamy Coarse Sand
LS − Loamy Sand
FS − Fine Sand
LFS − Loamy Fine Sand
VFS − Very Fine Sand
LVFS − Loamy Very Fine Sand
COSL − Coarse Sandy Loam
SL − Sandy Loam
FSL − Fine Sandy Loam
VFSL − Very Fine Sandy Loam
L − Loam
SIL − Silt Loam
SI − Silt
SCL − Sandy Clay Loam
CL − Clay Loam
SICL − Silty Clay Loam
SC − Sandy Clay
C − Clay
SIC − Silty Clay

Note e: PL − Platy
PR − Prismatic
BK − Blocky
GR − Granular
M − Massive
0 − Structureless
1 − Weak
2 − Moderate
3 − Strong

Table 383.44−3

Minimum Depth of Unsaturated Soil for Treatment Purposes[a] (in inches)

Soil Characteristics	Influent Quality[e] and Percent Coarse Fragments					
Texture[d]	Fecal Coliform >10^4 cfu/100mL			Fecal Coliform ≤10^4 cfu/100mL[b]		
	≤35%	>35 to ≤60%	>60 to ≤90%[b,c]	≤35%	>35 to ≤60%	>60 to ≤90%[c]
COS, S, LCOS, LS	36	60	60	24	36	60
FS, VFS, LFS, LVFS	36			24		
COSL, SL	36			24		
FSL, VFSL	36			24		
L	36			24		
SIL	36			24		
SI	36			24		
SCL, CL, SICL	36			24		
SC, C, SIC	36			24		

Note a: Influent quality as per s. SPS 383.44 (2)

Note b: Requires pressure distribution under sub. (5) (a)

Note c: All coarse fragment voids must be filled with fine earth

Note d: COS − Coarse Sand
S−Sand
LCOS − Loamy Coarse Sand
LS − Loamy Sand
FS − Fine Sand
LFS − Loamy Fine Sand
VFS − Very Fine Sand
LVFS − Loamy Very Fine Sand
COSL − Coarse Sandy Loam
SL − Sandy Loam
FSL − Fine Sandy Loam
VFSL − Very Fine Sandy Loam
L − Loam
SIL − Silt Loam
SI − Silt
SCL − Sandy Clay Loam
CL − Clay Loam
SICL − Silty Clay Loam
SC − Sandy Clay
C − Clay
SIC − Silty Clay

Note e: The values for fecal coliform are reported as a monthly geometric mean. The geometric mean shall be determined on the basis of measurements taken over 30 consecutive days, with at least 6 measurements occurring on 6 separate days.

(6) ORIENTATION. (a) 1. The infiltrative surface of a distribution cell within a POWTS treatment or dispersal component consisting in part of in situ soil and located in fill material above original grade shall be level.

2. The longest dimension of a POWTS treatment or dispersal component consisting in part of in situ soil shall be oriented along the surface contour of the component site location unless otherwise approved by the department.

(b) The infiltrative surface of a distribution cell within a POWTS treatment or dispersal component consisting in part of in situ soil and located below the surface of the original grade shall be level.

(c) POWTS treatment or dispersal components consisting in part of in situ soil shall be so located as to minimize the infiltration of storm water into the component.

(7) GEOMETRY. The geometry of a subsurface treatment or dispersal component consisting in part of the in situ soil shall take into account linear loading rates that are based on soil texture, structure, consistence and distance to seasonal soil saturation and restrictive soil horizons.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: (3) (b) and (4) (c), r. and recr. (5) (a) and Tables 83.44−2 and 83.44−3 Register January 2004 No. 577, eff. 2−1−04; CR 07−100: am. (3) (b) 1. and Tables 83.44−2 and 3, r. (5) (b), renum. (5) (c) to be (5) (b) Register September 2008 No. 633, eff. 10−1−08; correction in (1), (3) (b) 1., (4) (a) 1. a., f., 2., (b), (5) (a) 1., Table 383.44−3 made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.45 Installation. (1) GENERAL. A POWTS shall be constructed and installed in such a manner to hold wastewater or reduce the contaminant load and disperse the flow of wastewater in accordance with this subchapter and the plan approval under s. SPS 383.22.

(2) FROZEN SOIL. POWTS treatment and dispersal components consisting in part of in situ soil may not be installed if the soil is frozen at the infiltrative surface of the component.

(3) SNOW COVER. Snow cover shall be removed before excavating or installing POWTS treatment and dispersal components consisting in part of in situ soil.

(4) MOISTURE. The soil moisture content for a POWTS treatment or dispersal component consisting in part of in situ soil shall be evaluated immediately prior to installation of the component. If the soil at the infiltrative surface can be rolled into a ¼−inch wire, the installation may not proceed.

(5) BEDDING. All vessels and pipes of a POWTS shall be bedded in accordance with a product approval under s. SPS 384.10 or a plan approval under s. SPS 383.22.

(6) FLOODPLAIN. (a) All POWTS treatment tanks, holding and dispersal tanks that are located in floodplain areas shall be made and maintained watertight to prevent infiltration.

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(b) Vent pipes and observation pipes serving POWTS components that are located in floodplain areas shall terminate at least 2 feet above regional flood levels.

Note: See s. SPS 383.43 (8) (g) relative to anchoring provisions.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 07−100: am. (6) Register September 2008 No. 633, eff. 10−1−08; correction in (1), (5) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

Subchapter V — Management

SPS 383.50 Purpose. The purpose of this subchapter is to accomplish all of the following:

(1) Establish monitoring, inspection, evaluation, maintenance and servicing requirements for all POWTS, in order to ensure that the POWTS will operate as designed and thereby protect the public health and waters of the state.

(2) Establish maintenance programs operated by governmental units to ensure that all POWTS will be inspected, evaluated, maintained and serviced so that the POWTS will operate as designed and thereby protect the public health and waters of the state.

(3) Provide the department with data by which to make regulatory decisions.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 07−100: r. and recr. Register September 2008 No. 633, eff. 10−1−08.

SPS 383.51 Principles. (1) A POWTS, including a POWTS existing prior to July 1, 2000, shall be maintained at all times so as not to create a human health hazard.

(2) When upon inspection of a POWTS, including a POWTS existing prior to July 1, 2000, any part of the system that is found to be defective in conformance with the applicable provisions of this chapter, the installation or modification plan, or the approvals, the part shall be repaired, renovated, replaced or removed.

Note: Section SPS 387.04 (2) (a) to (e) also establishes management and maintenance requirements for a POWTS that is located in a governmental unit which participates in the replacement and rehabilitation program under s. 145.245, Stats.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00.

SPS 383.52 Responsibilities. (1) (a) 1. The owner of a POWTS shall be responsible for ensuring that the operation and maintenance of the POWTS occurs in accordance with this chapter and the approved management plan under s. SPS 383.54 (1).

2. The owner of a POWTS shall be responsible for ensuring that access opening covers remain locked or secured except for inspection, evaluation, maintenance or servicing purposes.

(b) The owner of a POWTS existing prior to July 1, 2000, shall be responsible for ensuring that the maintenance of the POWTS occurs in accordance with s. SPS 383.54 (4).

(c) 1. The owner of a POWTS, including a POWTS existing prior to July 1, 2000, shall maintain a maintenance contract with a POWTS maintainer or a business utilizing a POWTS maintainer for the POWTS as long as the POWTS is utilized and, if the management plan for the POWTS under s. SPS 383.54 (1) involves one or more of the following:

a. Evaluating or monitoring any part of the system at an interval of 12 months or less.

b. Maintaining any part of the system at an interval of 12 months or less.

2. The owner of a POWTS, including a POWTS existing prior to July 1, 2000, shall maintain a maintenance or service contract with a certified septage servicing operator under ch. NR 114 for the POWTS as long as the POWTS is utilized and, if the management plan for the POWTS under s. SPS 383.54 (1) involves the servicing of any holding, treatment or dispersal component at an interval of 12 months or less.

(2) A POWTS, including a POWTS existing prior to July 1, 2000, that is not maintained in accordance with the approved management plan or as required under s. SPS 383.54 (4) shall be considered a human health hazard.

(3) The activities relating to evaluating, monitoring and maintaining POWTS components after the initial installation of the POWTS in accordance with an approved management plan or as required by s. SPS 383.54 (4) (c) shall be conducted by a person who holds registration issued by the department as a registered POWTS maintainer.

Note: See s. SPS 305.36 concerning the application and qualification requirements to become a registered POWTS maintainer.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: am. (3) Register January 2004 No. 577, eff. 2−1−04; CR 07−100: renum. (1) (a) to be (1) (a) 1., cr. (1) (a) 2., am (1) (b), (c) 1. (intro.) and (3) Register September 2008 No. 633, eff. 10−1−08; correction in (1) (a) 1., (b), (c) 1. (intro.), 2., (2), (3) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.53 General. (1) No product for chemical or physical restoration or chemical or physical procedures for POWTS, including a POWTS existing prior to July 1, 2000, may be used unless approved by the department in accordance with ss. SPS 384.10 and 384.14.

(2) Nothing in this subchapter shall limit a governmental unit's authority and power in establishing a mandatory POWTS maintenance program that is more restrictive than what is specified in this subchapter, including management or maintenance undertaken by the governmental unit.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 07−100: am. Register September 2008 No. 633, eff. 10−1−08; correction in (1) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.54 Management requirements. (1) MANAGEMENT PLAN. (a) The management plan for each POWTS shall include information and procedures for maintaining the POWTS to operate and function within the standards of this chapter and as designed and approved.

(b) The management plan for a POWTS shall be a part of the plan submittal under s. SPS 383.22 or 384.10.

(c) The management plan for POWTS shall specify all necessary maintenance and servicing information which may include, but is not limited to all of the following:

1. Accumulated solids or byproduct removal requirements.

2. Influent quantities and qualities and effluent quantities and qualities.

3. Metering, sampling and monitoring schedules and requirements.

4. Load and rest schedules.

5. Servicing frequency requirements.

6. Installation and inspection checklists.

7. Evaluation, monitoring and maintenance schedules for mechanical POWTS components.

8. Start up and shutdown procedures.

9. Procedure for abandonment.

(d) If the owner of the POWTS wishes to operate or maintain a POWTS differently than that specified in the approved management plan, a written request for approval to amend the management plan shall be submitted to the agency that initially reviewed the installation plan under s. SPS 383.22.

(e) The management plan for a POWTS shall specifically address the servicing mechanics of an aerobic or anaerobic treatment tank or a holding tank where either of the following conditions exist:

1. The bottom of the tank is located more than 15 feet below the elevation where the servicing pad is located.

2. The bottom of the tank is located more than 150 feet horizontally from where the servicing pad is located.

(2) METERING AND MONITORING. (a) *General.* The management plan specified in sub. (1) shall include the metering or monitoring of POWTS influent or effluent as specified in this subsection.

(b) *Department option.* The department may require the metering or monitoring of any POWTS to evaluate the operation of the POWTS.

(c) *Governmental unit option.* A governmental unit may require the metering or monitoring of a POWTS holding component as part of a maintenance and monitoring tracking program.

(d) *Metering influent flows.* 1. When and where the metering of a POWTS is required, influent flows to POWTS shall be metered by one of the following methods:

a. Installing event counters and elapsed time meters.

b. Installing water meters to meter the water distribution system flow to the POWTS.

c. Metering wastewater flow from all parts of the plumbing system discharging to the POWTS.

d. Metering the water distribution system and metering exterior hydrant use, except as provided in subd. 2.

2. Where meters are installed on water distribution systems existing prior to July 1, 2000, the entire water distribution system may be metered and the exterior hydrant usage estimated and subtracted from the total flow to meet the requirements of this paragraph.

(e) *Monitoring influent and effluent loads.* 1. When and where the monitoring of groundwater is required, groundwater monitoring wells constructed in accordance with ch. NR 141 shall be utilized.

2. When influent or effluent contaminants are to be monitored, samples shall be collected in accordance with the requirements of the approved management plan or, where no procedures are specified, in accordance with published sampling procedures accepted by the department.

Note: Acceptable sampling procedures include those contained in the following sources:

"Procedures Manual for Ground Water Monitoring at Solid Waste Disposal Sites," EPA SW−611, Office of Water and Waste Management, U. S. Environmental Protection Agency, December 1980, Washington, D. C.

"Techniques of Water Resources Investigations of the United States Geological Survey, Guidelines for Collection and Field Analysis of Ground Water Samples for Selected Unstable Constituents," Book I, Chapter D2, U.S. Geological Survey, Washington, D. C.

"Procedures for the Collection of Representative Water Quality Data from Monitoring Wells," Cooperative Groundwater Report 7, Illinois State Water Survey, 1981, Champaign, Illinois.

"Manual of Ground Water Sampling Procedures," NWWA/EPA Series, Robert S. Kerr Environmental Research Laboratory, 1981, Ada, Oklahoma.

"Groundwater Sampling Procedures Guidelines," Wisconsin DNR, PUBL−WR−153, February 1987.

"Groundwater Sampling Procedures Field Manual," Wisconsin DNR, PUBL−WR−168, September 1987.

3. All groundwater samples collected to evaluate influent or effluent quality, except samples collected for total coliform bacteria analysis and the field analyses for pH, specific conductance and temperature, shall be analyzed by a laboratory certified under s. 299.11, Stats., and rules adopted under that section.

4. The results of the analysis required under subd. 2. shall be maintained and reported as required in the approved management plan and in accordance with s. SPS 383.55 (1) (a).

(3) SERVICING REQUIREMENTS. (a) The management plan specified in sub. (1) shall reflect the servicing schedules of POWTS components as specified in this subsection

(b) The servicing frequency of an anaerobic treatment tank for a POWTS shall occur at least when the combined sludge and scum volume equals 1/3 of the tank volume.

(c) The servicing frequency of a holding tank for a POWTS, except for camping unit transfer containers, shall occur at least when the wastewater of the tank reaches a level of one foot below the inlet invert of the tank.

Note: The servicing of POWTS holding and treatment components, including septic tanks and holding tanks, is required to be performed by licensed pumpers under chs. NR 113 and NR 114.

(4) EXISTING POWTS. (a) The servicing frequency of an anaerobic treatment tank for a POWTS existing prior to July 1, 2000, shall occur at least when the combined sludge and scum volume equals 1/3 of the tank volume.

(b) The servicing of a holding tank for a POWTS existing prior to July 1, 2000, except for camping unit transfer containers, shall occur at least when the wastewater of the tank reaches a level of one foot below the inlet invert of the tank.

(c) The inspection, evaluation, or maintenance or servicing of POWTS treatment components other than those under pars. (a) and (b) existing prior to July 1, 2000, shall be provided in accordance with the requirements specified by the manufacturer or designer of the component.

(d) 1. Except as provided in subd. 3., a POWTS that exists prior to July 1, 2000, and that utilizes a treatment or dispersal component consisting in part of in situ soil shall be visually inspected at least once every 3 years to determine whether wastewater or effluent from the POWTS is ponding on the surface of the ground.

2. The inspection required by subd. 1. shall be performed by one of the following:

a. A licensed master plumber.

b. A licensed master plumber−restricted service.

c. A certified POWTS inspector.

d. A certified septage servicing operator under ch. NR 114.

e. A registered POWTS maintainer.

3. A governmental unit that has completed the inventory required under s. SPS 383.255 (1) (a) may, by ordinance, extend the visual inspection interval required under subd. 1., to a maximum period of 5−years for a POWTS serving an occasionally occupied structure or facility.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: cr. (1) (e) and (4) (d) 2. e., r. and recr. (2) (c), am. (2) (d) 1. (intro.) Register January 2004 No. 577, eff. 2−1−04; CR 07−100: am. (4) (c) and (d) 1., cr. (4) (d) 3. Register September 2008 No. 633, eff. 10−1−08; correction in (1) (b), (d), (2) (e) 4., (4) (d) 3. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.55 Reporting requirements. (1) (a) The owner of a POWTS or the owner's agent shall report to the governmental unit or designated agent at the completion of each inspection, evaluation, maintenance or servicing event specified in the approved management plan, except for camping unit transfer containers.

(b) The owner of a POWTS existing prior to July 1, 2000 or the owner's agent shall report to the governmental unit or designated agent at the completion of each inspection, evaluation, maintenance or servicing event required under s. SPS 383.54 (4), except for camping unit transfer containers.

(c) The owner of a POWTS is responsible for fulfillment of the reporting requirements under this section.

(2) The inspection, evaluation, maintenance and servicing reports required under sub. (1) shall be submitted to the governmental unit or designated agent in accordance with all of the following:

(a) In a manner specified by the governmental unit or designated agent.

(b) Within 30 calendar days from the date of inspection, evaluation, maintenance or servicing.

(c) By the owner or the owner's agent.

(3) The inspection, evaluation, maintenance and servicing reports required under sub. (1) shall include the following information:

(a) A POWTS identifying number.

(b) The location of the POWTS.

(c) The date of inspection, evaluation, maintenance or servicing.

(d) The license, certification or registration number of the individual performing the inspection, evaluation, maintenance or servicing.

(e) Other information required by the approved management plan.

(4) The department, governmental unit or designated agent may require verification of any information contained in an inspection, evaluation, maintenance and servicing report.

Note: This subsection does not require the maintaining of test data which is collected voluntarily and which is not being collected to determine compliance with this chapter.

(5) (a) The governmental unit or designated agent shall maintain records relating to the inspection, evaluation, maintenance and servicing of POWTS as specified in this section for a period of not less than 6 years.

(b) Upon request by a governmental unit and the agreement of the department, the governmental unit may delegate to the department the responsibility to maintain records relating to the inspection, evaluation, maintenance and servicing of POWTS as specified in this section.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: am. (1), (2), and (5) Register January 2004 No. 577, eff. 2−1−04; CR 07−100: am. (1), (2) (intro.), (b), (3) (intro.), (c), (d), (4) and (5), cr. (1) (c) Register September 2008 No. 633, eff. 10−1−08; correction in (1) (b) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

Subchapter VI — Recognized Methods and Technologies

SPS 383.60 Purpose. (1) Specific types of methods and technologies may be recognized by the department under the voluntary product approval process in s. SPS 384.10 (3) as conforming with subchs. IV and V and may be utilized in the design of POWTS for a specific project.

Note: Subsection SPS 384.10 (3) delineates a process for the voluntary submittal of specific methods and technologies that are proposed to be utilized as POWTS holding, treatment or dispersal components and for the department's evaluation of such submittals. Methods and technologies recognized under this process may be utilized in any POWTS within the specifications and parameters of the method or technology. Methods and technologies recognized under this process do not require the submittal of data at the time of plan review and approval process under s. SPS 383.22 to substantiate the performance of the specific method or technology.

Note: Information regarding recognized methods and technologies may be downloaded at: http://dsps.wi.gov/SB/SB−PubsPlumbProdReg.html.

(2) This subchapter does not limit the use of other methods and technologies for POWTS or POWTS components the performance of which has been recognized under the plan review and approval process of s. SPS 383.22 or the voluntary product approval process of s. SPS 384.10 (3) or both.

Note: Section SPS 383.22 delineates the process for the submittal of a plan for a POWTS design to be utilized for a specific project at a specific site. Under this section methods and technologies for POWTS holding, treatment or dispersal components that have not been recognized under s. SPS 384.10 (3), require the submittal to the department of data or information to substantiate performance claims. The approval of a POWTS plan by the department under this section covers only a specific project at a specific site, and does not constitute the recognition of a method or technology for other projects or sites.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 07−100: am. (1) Register September 2008 No. 633, eff. 10−1−08; correction in (1), (2) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 383.61 Parameters for using acceptable methods and technologies. When a design of a POWTS for a specific project utilizes a method or technology recognized under s. SPS 384.10 (3), a deviation from the specifications and limitations relative to the installation and maintenance of that method or technology shall constitute a violation of this chapter.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 07−100: renum. from Comm 83.62 Register September 2008 No. 633, eff. 10−1−08; correction made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

Subchapter VII — Department Performance Monitoring

SPS 383.70 Purpose. (1) To address the desire for an ongoing source of information on the performance of POWTS system designs, the department shall maintain an ongoing performance−monitoring program for the various POWTS methods and technologies. The monitoring program shall be in addition to the periodic inspection and monitoring of POWTS under subch. V. The monitoring program shall be coordinated by the department in conjunction with the ongoing POWTS experimental and research program.

(2) The purpose of the performance monitoring program is to:

(a) Provide additional information on the long−term performance of the various POWTS methods and technologies, to confirm their reliability, and to provide data for improvements; and

(b) Monitor the various methods and technologies relative to long−term compliance with the groundwater standards.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00.

SPS 383.71 Department procedures. (1) Both currently installed POWTS and newly installed POWTS may be included in the performance monitoring program conducted by the department.

(2) The department may include both the performance of individual POWTS treatment components as well as the output of components at the edge of the design treatment zone as part of the monitoring program.

(3) The department shall support the performance−monitoring program from Wisconsin Fund allocations and program revenue funds generated from POWTS plan review and sanitary permits. If funds for this purpose become available from other sources, those funds may be used to support the monitoring program.

(4) The department shall utilize the technical advisory committee assembled under s. SPS 384.10 (3) (c) 2. to advise the department on the performance−monitoring program. The committee shall advise the department in at least the following areas:

(a) Development of performance monitoring protocols.

(b) Selection of the POWTS methods and technologies to be monitored.

(c) Identification of funding sources.

(d) The interpretation of the results of the monitoring program.

(5) The decision by the department on the number, types and locations of methods and technologies to be monitored shall take into consideration at least the following factors:

(a) The availability of other scientific data on the performance of a specific method or technology.

(b) The number times of each method or technology may be utilized annually.

(c) The likelihood that the method or technology will be adapted for soil and site conditions not previously utilized.

(d) The availability of funds.

(e) The risk factors associated with public health concerns and groundwater and surface water standards.

(6) The initial performance monitoring program undertaken by the department shall emphasize at least the following two circumstances:

(a) Monitoring where there is a high density of systems.

Note: The initial focus would be on subdivisions with lots of 1.5 acres or less.

(b) Monitoring where the depth of suitable in situ soil is near the minimum 6 inches specified under s. SPS 383.44 (3) (b) 1.

(7) (a) The department shall prepare an annual written report of performance−monitoring activities undertaken and the results of those activities.

(b) The report under par. (b) shall be prepared annually and provided to the groundwater coordinating council assembled under s. 160.50, Stats.

(c) The department shall prepare the first report no later than December 31, 2001.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; correction in (4) (intro.), (6) (b) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

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Chapter SPS 384

APPENDIX

The material contained in this appendix is for clarification purposes only. The notes, illustrations, etc., are numbered to correspond to the number of the rule as it appears in the text of the code.

A−384.10 (3) (b) Request forms for voluntary POWTS product approval may be obtained at the following location:

Department of Safety and Professional Services
Madison Office
1400 E. Washington Ave.
PO Box 7162
Madison, WI 53703−7162
Phone (608) 266−6742
Web Page http://dsps.wi.gov/SB/SB−DivForms.html

A−384.11−Nationally Recognized Listing Agencies Acceptable to the Department

American Gas Association (AGA)
400 N. Capitol Street, N.W.
Washington, DC 20001
Phone (202) 824−7000
Web Page www.aga.org

American Society of Mechanical Engineers (ASME)
Three Park Avenue
New York, NY 10016−5990
Phone (212) 524−4990
Web Page www.asme.org

American Society of Sanitary Engineering (ASSE)
901 Canterbury, Suite A
Westlake, OH 44145−1166
Phone (440) 835−3040
Web Page www.asse−plumbing.org

Canadian Standards Association International (CSA)
178 Rexdale Blvd.
Toronto, ON
CANADA
M9W 1R3
Phone (800) 463−6727
Web Page www.csa−international.org

IAPMO Research and Testing, Inc. (IAPMO)
5001 E. Philadelphia St.
Ontario, CA 91761
Phone (909) 472−4100
Web Page www.iapmo.org/rnt

ETL Intertek Testing Services NAE, Inc. (ITS)
3233 US Route 11
Cortland, NY 13045
Phone (607) 753−6711
Web Page www.intertek−testing.com
Web Page www.etlsemko.com

NSF *International* (NSF)
789 Dixboro Rd.
Ann Arbor, MI 48105−9723
Phone (800) 673−6275
Web Page www.nsf.org

Underwriters Laboratories Inc. (UL)
333 Pfingsten Rd.
Northbrook, IL 60062−2096
Phone (847) 272−8800
Web Page www.ul.com

The listing agencies list products to a specific national standard and have labeling requirements in addition to those requirements of the standard., i.e., ASSE requires that their seal with the standard number be on the device.

A−384.20 (5) SPACING OF PLUMBING FIXTURES

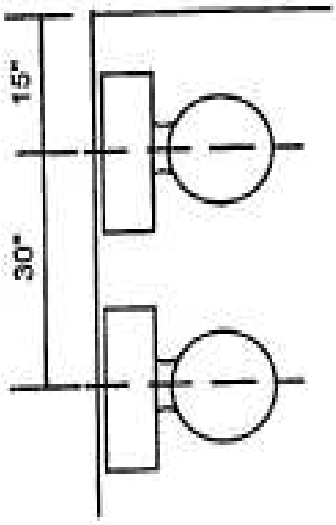


Figure A−384.20−1. Spacing between water closets.

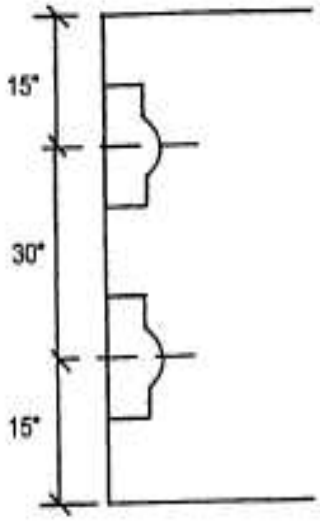


Figure A−384.20−2. Spacing between stall type urinals.

A−384.20 (5) SPACING OF PLUMBING FIXTURES (Continued)

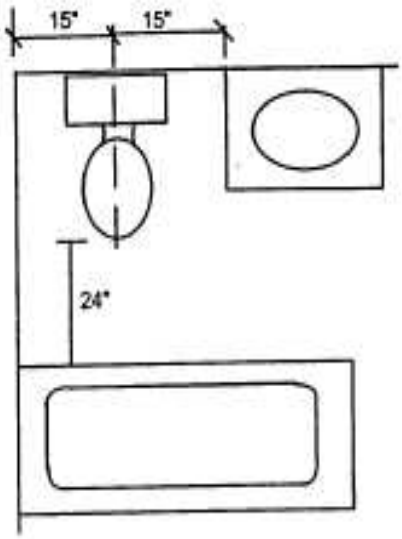
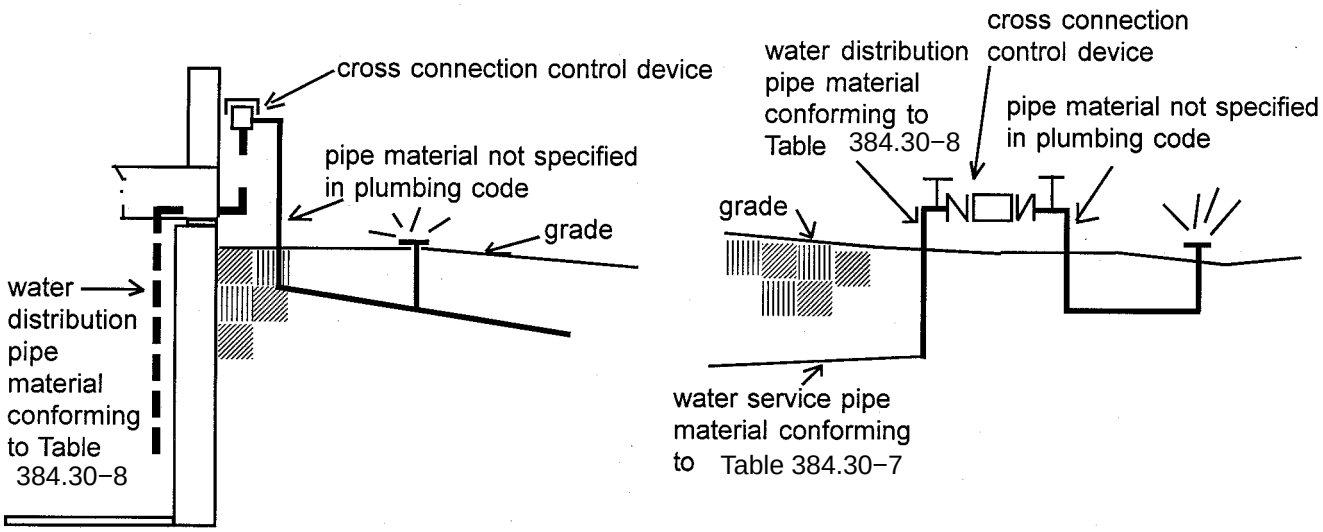


Figure A−384.20−3. Spacing between water closet and tub.

A−384.30 (4) (e) 2. TURF SPRINKLER SYSTEM PIPING MATERIAL.



Turf sprinkler system piping material

Chapter SPS 385

SOIL AND SITE EVALUATIONS

SPS 385.01 Purpose.
SPS 385.02 Scope.
SPS 385.10 Qualifications.
SPS 385.20 Soil evaluations.
SPS 385.30 Soil profile description and interpretations.
SPS 385.40 Evaluation reports.
SPS 385.50 Governmental unit review.
SPS 385.60 Soil saturation determinations.

Note: Chapter H 65 as it existed on May 31, 1983 was repealed and a new Chapter ILHR 85 was created effective June 1, 1983. Chapter ILHR 85 was renumbered Chapter Comm 85 under s. 13.93 (2m) (b) 1., Stats., and corrections made under s. 13.93 (2m) (b) 7., Stats., Register, February, 1997, No. 494. Chapter Comm 85 as it existed on June 30, 2000 was repealed and a new chapter Comm 85 was created, Register, April, 2000, No. 532, eff. 7−1−00. **Chapter Comm 85 was renumbered chapter SPS 385 under s. 13.92 (4) (b) 1., Stats., Register December 2011 No. 672.**

SPS 385.01 Purpose. The purpose of this chapter is to establish the minimum requirements for evaluating and reporting soil and site characteristics that may affect treatment or dispersal of wastewater, treated wastewater, final effluent or nonwater−carried human wastes.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00.

SPS 385.02 Scope. (1) Pursuant to s. 145.02, Stats., this chapter applies to all soil and site evaluations conducted relative to the treatment or dispersal of wastewater, treated wastewater, final effluent or nonwater−carried human wastes into soil.

(2) A department interpretation of the requirements in this chapter shall supersede any differing interpretation by a lower level jurisdiction. A department decision on the application of the requirements in this chapter shall supersede any differing decision by a lower level jurisdiction.

Note: A decision of the department may be appealed. Section 101.02 (6) (e), Stats., outlines the procedure for submitting requests to the department for appeal hearings and the department procedures for hearing appeals.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 07−100: renum. to (1), cr. (2) Register September 2008 No. 633, eff. 10−1−08.

SPS 385.10 Qualifications. (1) SOIL EVALUATION. A soil evaluation for treatment or dispersal of wastewater, treated wastewater, final effluent or nonwater−carried human wastes regulated by chs. SPS 383 and 391 shall be performed by an individual who is a certified soil tester. A soil evaluation for the treatment or dispersal of stormwater regulated under ch. SPS 382 shall be performed by an individual who is either a certified soil tester or one who holds a professional soil scientist license under ch. GHSS 4.

Note: Section SPS 305.33 delineates the qualifications and certification procedures for certified soil testers.

(2) SITE EVALUATION. A site evaluation, relative to the installation of a POWTS treatment, holding or dispersal component location, or to determine land slope or setback distances to topographic or other site features shall be performed by a Wisconsin registered architect, professional engineer, designer of plumbing systems, designer of private sewage systems or land surveyor; a certified soil tester or POWTS inspector; or a licensed master plumber or master plumber−restricted service.

(3) SOIL SATURATION DETERMINATIONS. Soil saturation determinations may only be conducted and reported by an individual who is a certified soil tester.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 04−035: am. (1) Register November 2004 No. 587, eff. 12−1−04; **correction in (1) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 385.20 Soil evaluations. (1) GENERAL. (a) Soil boring methods and procedures shall comply with this section.

(b) Maximum soil application rates shall be determined relative to the soil texture, structure and consistence for each soil horizon or layer.

Note: Section SPS 383.44 establishes maximum soil application rates and soil treatment capability for the design of POWTS treatment or dispersal components consisting in part of in situ soil.

(2) NUMBER, TYPE AND DEPTH OF EVALUATIONS. (a) *General.* The number, type, depth and location of soil profile evaluations shall be sufficient to delineate the area under investigation and to assure consistency of the data within that area.

(b) *Number and area.* 1. a. Except as provided in subd. 1. d. and subd. 2., a minimum of 3 soil profile evaluation excavations shall be used to delineate a site within which POWTS treatment or dispersal components consisting in part of in situ soil are to be located.

b. For estimated daily flows of 1,000 gallons per day or less, at least one soil profile evaluation excavation per treatment or dispersal site shall be constructed as a soil pit, and described in accordance with s. SPS 385.30 (1) (c).

c. For estimated daily flows greater than 1,000 gallons per day, at least 3 soil profile evaluations per treatment or dispersal site shall be constructed as soil pits, and described in accordance with s. SPS 385.30 (1) (c).

d. The department or governmental unit may require additional soil profile evaluation excavations to be constructed where soil variability considerations may not be adequately addressed. The department or governmental unit may specify that soil profile descriptions in accordance with s. SPS 385.30 (1) (c) be conducted for any additional soil profile evaluation excavations.

2. At least one soil pit or soil boring shall be used to establish soil suitability for a pit privy.

Note: Sections SPS 383.44 (3) and 391.12 (1) (b) 1. contain further information regarding privy siting and soil requirements.

(c) *Type.* 1. Soil profile evaluations used to determine soil application rates shall be conducted using soil pits.

2. Soil profile evaluations used to determine or identify soil horizon depths, soil color, soil texture, redoximorphic feature colors or depth to groundwater or bedrock shall be conducted using either soil pits or soil borings.

(d) *Depth.* Soil profile evaluations shall extend an adequate depth below the land surface to identify soil properties critical to soil treatment or dispersal of wastewater, treated wastewater, final effluent or nonwater−carried human waste.

(3) EXCAVATION METHODS. (a) *Soil profile excavations.* A soil profile excavation shall be of such size and construction to allow accurate determination of soil characteristics.

(b) *Soil borings.* 1. Soil borings shall be created by means of a soil bucket auger, soil probe, split−spoon sampler or Shelby tube having at least a 2 inch diameter.

2. A soil boring may not be created by means of a power auger.

(c) *Soil pits.* A soil pit shall be of adequate size, depth and construction to enable a person to safely enter and exit the pit and to complete a morphological soil profile description.

Note: Occupational safety and health administration regulations (29 CFR 1926, Subpart P) apply to certain types of excavations, and the persons entering such excavations need to be familiar with those regulations.

(4) SOIL EVALUATION CONDITIONS. (a) Soil color evaluations shall be performed on days when light conditions permit accurate color determinations.

(b) Frozen soil material shall be thawed prior to conducting evaluations for soil color, texture, structure and consistence.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; **correction in (2) (b) 1. b., c., d. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 385.30 Soil profile description and interpretations. (1) GENERAL. (a) A soil profile description shall be prepared for each soil profile excavation constructed.

(b) Soil profile descriptions shall be written in accordance with the descriptive procedures, terminology and interpretations found in Chapter 3 of the *Soil Survey Manual*, USDA, October, 1993, except where modified by, or in conflict with, this chapter.

(c) A soil profile description to substantiate soil application rates shall include at least all of the following morphological information for each soil horizon or layer:

1. Thickness in inches or decimal feet.

2. Munsell soil color notation.

3. Soil mottle or redoximorphic feature color, abundance, size and contrast.

4. United States Department of Agriculture, USDA, soil textural class with rock fragment modifiers.

5. Soil structure grade, size and shape.

6. Soil consistence.

7. Root abundance and size.

8. Soil boundary.

9. Occurrence of saturated soil, groundwater, bedrock or disturbed soil.

(d) A soil profile description to substantiate soil characteristics other than for application rates shall include the information specified in par. (c) 1. to 4. and 9.

(2) SOIL INTERPRETATIONS. (a) Redoximorphic features or mottles shall be interpreted as zones of seasonal or periodic soil saturation or groundwater, except as provided under sub. (3).

(b) Unless otherwise determined under s. SPS 385.60, the highest elevation of seasonal soil saturation shall be the ground surface where redoximorphic features are present within 4 inches of any of the following:

1. An A horizon that extends to the ground surface.

2. The lower boundary of overlying fill material where no buried A horizon exists.

3. An A horizon buried by overlying fill material.

(3) SOIL COLOR PATTERN EXEMPTIONS. (a) Without filing a report under s. SPS 385.60 (2), a certified soil tester may discount the following conditions, not limited by enumeration, as indicators of seasonally saturated soil:

1. Fossilized soil color patterns formed by historic periodic soil saturation.

2. A soil profile where redoximorphic features are confined within 12 inches of tension saturated silt loam or finer textured soil immediately overlying unsaturated coarse sandy loam or coarser textured soil that has a depth in the coarser material adequate to accommodate a distribution cell and dispersal zone.

3. A soil profile where redoximorphic features are confined within 24 inches of tension saturated silt loam or finer textured soil immediately overlying unsaturated coarse loamy sand or coarser textured soil that has a depth in the coarser material adequate to accommodate a distribution cell and dispersal zone.

4. Residual sandstone colors.

5. Unevenly weathered glacially deposited material, glacially deposited material naturally gray in color, or concretionary material in various stages of decomposition.

6. Deposits of lime.

7. Light colored silt or fine sand coatings on soil ped surfaces.

(b) Without filing a report under s. SPS 385.60 (2) for a specific site, the department may accept the results of soil saturation determinations or of the hydrograph procedure under s. SPS 385.60 previously conducted for areas adjacent to the site, provided that the soil profile descriptions and interpretations confirms that the soil and site conditions are similar for the specific site and the adjacent areas.

(4) SOIL COLOR PATTERN REPORTS. The certified soil tester shall report and describe any soil color pattern exemptions encountered.

(5) DETERMINATION REQUESTS. A certified soil tester may request assistance by the governmental unit or department staff in evaluating the significance of unusual soil color patterns as indicators of soil saturation that may not indicate saturated soil conditions. The governmental unit or department may decline to provide such assistance, and defer to the use of soil saturation determinations pursuant to s. SPS 385.60 or some other method.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: r. and recr. (2) (b) and (3) (a) 2. and 3. Register January 2004 No. 577, eff. 2−1−04; CR 07−100: am. (5) Register September 2008 No. 633, eff. 10−1−08; **correction in (2) (b) (intro.), (3) (a) (intro.), (b), (5) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 385.40 Evaluation reports. (1) GENERAL. A soil evaluation report shall be prepared and submitted to the governmental unit having jurisdiction upon the completion of the evaluation and associated report form.

(2) SOIL REPORT CERTIFICATION AND FORMAT. (a) *Soil evaluation reports.* Soil evaluation reports shall be prepared in a format specified by the department and this chapter.

Note: Department forms required in this chapter are available for a nominal fee at telephone 800−DOC−SALE or Contact Through Relay or at doc-sales@doa.state.wi.us, or at no charge at the Department's Web site http://dsps.wi.gov through links to Safety and Buildings Division forms.

(b) *Certification.* 1. Except as provided in subd. 2., each page of a soil evaluation report shall bear:

a. The original signature of the certified soil tester who collected the data;

b. The certified soil tester's identification number; and

c. The date the report is signed.

2. When more than one sheet of a soil evaluation report is bound together into one volume, only the title sheet shall:

a. Be required to be signed, dated and bear the identification number of the certified soil tester who collected the data; and

b. Clearly identify all other sheets comprising the bound volume.

(3) REPORT CONTENTS. (a) *Site report.* A site evaluation report shall include at least all of the following:

1. The site's legal description to within 40 acres.

2. The date the data was collected.

3. A legible and permanent site plan that complies with all of the following:

a. Is presented on paper no smaller than 8 ½ inches by 11 inches in size.

b. Is drawn to scale or fully dimensioned.

c. Shows the extent of the site evaluated for soil dispersal or treatment.

4. Location information for all points under investigation including structures, property lines and other encumbrances to the treatment or dispersal component placement on the site.

5. Pertinent elevation data, such as:

a. A reference to, and description of, a permanent vertical and horizontal reference point or bench mark from which all distances and elevations are delineated on the site plan;

b. The natural, undisturbed surface grade elevation for all soil profile excavations;

c. The percent and direction of land slope for the site under evaluation;

d. Ground surface contour lines at an interval appropriate for the conditions present;

e. The floodplain elevation, if established, and current surface elevation of any adjacent navigable waters or reservoir; and

f. The existing grade adjacent to the groundwater elevation observation pipe, the top of the observation pipe, and the bottom of the observation pipe.

(b) *Soil report.* A soil evaluation report shall include at least all of the following:

1. A site evaluation report pursuant to par. (a).

2. The date soil evaluations were conducted.

3. The site's legal description to within 40 acres.

4. Soil profile descriptions pursuant to s. SPS 385.30 for all soil profile evaluation excavations.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: am. (3) (a) 3. (intro) Register January 2004 No. 577, eff. 2−1−04; **correction in (3) (b) 4. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 385.50 Governmental unit review. (1) GENERAL. (a) A governmental unit shall review all soil evaluation reports and site evaluation reports within 6 months of receipt.

(b) Upon completing the review of a soil evaluation report a governmental unit shall accept the report, reject the report, request additional information or clarification, or require verification under sub. (2).

(c) When a report is deemed acceptable, a governmental unit shall so indicate on the report and file the report for future reference.

(d) If the report is not acceptable, a governmental unit shall notify the submitter in writing and shall state the deficiencies or actions, or both, necessary to bring the report into compliance with this chapter or ch. SPS 383.

(2) VERIFICATION. (a) *Soil.* 1. The governmental unit or the department may require the property owner or the certified soil tester to provide soil pits in accordance with s. SPS 385.20 (3) for verification of soil profile evaluation data.

2. The certified soil tester who is responsible for the soil report shall be present at the site during the verification of soil profile evaluation data if so requested by the governmental unit or the department.

3. Soil verifications may not be conducted under adverse weather or light conditions that may lead to inaccurate results.

(b) *Site.* 1. The governmental unit or the department may require the property owner or certified individual who prepared the site report to provide assistance and equipment to verify site conditions.

2. The certified individual who is responsible for the site report shall be present at the site during the verification of site conditions if so requested by the governmental unit or department.

(c) *Report.* The governmental unit or the department shall complete a written report for each soil or site verification completed, and the results or findings of the report shall be filed with the soil and site evaluation report for future reference.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; **correction in (1) (d), (2) (a) 1. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 385.60 Soil saturation determinations. (1) GENERAL. (a) A property owner, or the owner's agent, may submit documentation to prove that redoximorphic features, or other soil color patterns, at a particular site are not indicative of periodically saturated soil conditions or high groundwater elevation.

(b) Documentation shall be in the form of an interpretive determination, soil saturation determination, hydrograph procedure or artificially controlled navigable water determination pursuant to this section.

(2) INTERPRETIVE DETERMINATIONS. (a) A written report by a certified soil tester evaluating and interpreting redoximorphic soil features, or other soil color patterns, may be submitted to the department in lieu of high groundwater determination data. The written report shall conclusively demonstrate that the existing soil morphological features or color patterns are not indicative of current conditions of periodic soil saturation.

(b) The department shall make a determination on the validity of the data, results and conclusions set forth in the report.

(c) The written report shall include, but is not limited to, all of the following information:

1. A soil evaluation report pursuant to s. SPS 385.40.

2. An interpretive review of the site including, but not limited to, all of the following:

a. Local hydrology.

b. A historical interpretation of the local geomorphology.

c. Soil disturbance and hydraulic modification.

d. The landscape position and local topography in the area under investigation.

3. Soil series and mapping units, if available, for the immediate area, as listed in the USDA soil survey.

4. Data, if any, from previous soil saturation determinations in similar soil conditions and landscape position.

5. Any written reports, comments or recommendations by the governmental unit or department staff.

(3) SOIL SATURATION DETERMINATION. (a) *General.* Actual elevations of soil saturation may be determined at specific sites in accordance with the soil saturation determination procedures in par. (c).

(c) *Precipitation.* 1. Precipitation data reported for soil saturation determination purposes shall include monthly totals for September through May, and daily totals for February through May.

2. Precipitation data totals under subd. 1. shall be from either the closest local station to the site where the observation pipe is installed, or the average from the 3 closest local stations to the site. If averaging is used, the totals under subd. 1. shall be submitted for all 3 stations.

(d) *Regional water tables.* 1. Where sites are subject to a broad, relatively uniform, regional water table, the fluctuation observed over a several year cycle shall be considered.

2. At such sites, and where free water levels are more than 5 feet below grade, determinations shall be made using the hydrograph procedures contained in sub. (4).

3. Areas affected by a regional water table shall be delineated by the department in consultation with the affected counties and the Wisconsin Geological and Natural History Survey.

(e) *Fine textured soil.* 1. The department may prohibit soil saturation determinations in fine textured soil with high matric potentials where determination results may be inconclusive.

2. In such cases, the department may approve alternative methods to address the direct determination of saturated or near saturated soil conditions not enumerated in this section.

(f) *Groundwater elevation observation pipe installation and construction.* 1. Number of observation pipes. a. At least 3 groundwater elevation observation pipes shall be installed to delineate the area under investigation.

b. The governmental unit or department may require more than 3 observation pipes to adequately evaluate potential soil saturation conditions.

2. Observation pipe depth. a. At the request of the department or governmental unit, at least one observation pipe shall be constructed to a depth of 15 feet below the ground surface to determine if high groundwater elevation conditions are due to a perched water table and the possible extent of the saturated zone.

b. Other observation pipes shall terminate at specific depths below grade that will serve to evaluate where shallow perched zones of soil saturation occur within the soil profile.

c. The governmental unit or department may designate specific observation pipe depths and locations based on soil and site conditions, or experience in a particular geographic area or topographic position.

d. An observation pipe may not be less than 24 inches deep.

3. Observation pipe construction. The direct observation of soil saturation conditions shall be accomplished by means of observation pipes conforming to this subdivision and Figure 385.60−1.

a. The observation pipe shall be of a material meeting the standards in s. SPS 384.30 Table 384.30−1, except that lead pipe may not be used.

b. The inside diameter of an observation pipe may not be less than 2 inches or more than 4 inches nominal size.

c. The borehole diameter shall be 2 to 4 inches larger than the outside diameter of the observation pipe.

d. The top of the observation pipe shall terminate at least 18 inches above grade and be provided with a vented cap.

e. The bottom of the observation pipe shall terminate with a slotted, or screened pipe. The slots or screen shall extend 6 to 18 inches above the bottom of the pipe and be at least 4 inches below the filter pack seal. The slots or screen shall not be hand cut and shall be designed to retain soil particles with a diameter of greater than 0.02 inch.

f. Except for the vented end cap, joints between lengths of pipe and fittings shall conform to s. SPS 384.40.

g. Finished grade around the observation pipe shall be sloped away from the observation pipe using soil material.

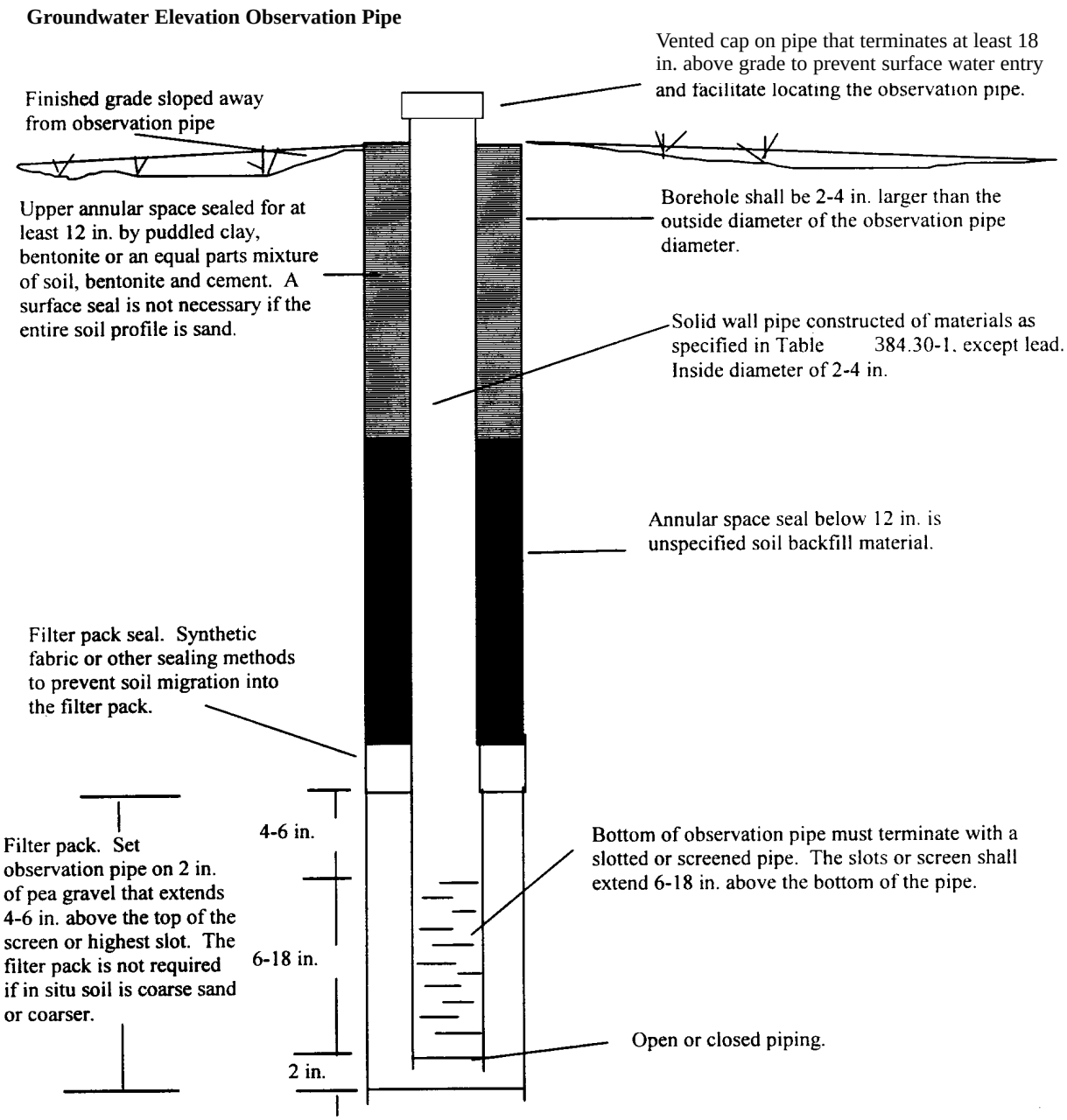
h. At a minimum, the upper 12 inches of annular space surrounding the observation pipe shall be sealed by puddled clay, bentonite, or an equal−parts mixture of soil, bentonite and cement. A surface seal may not be necessary if the entire soil profile is sand.

i. The annular space seal below 12 inches and to the top of the filter pack seal may be of unspecified soil material.

j. A filter pack seal shall be installed above the filter pack to prevent soil migration downward into the filter pack.

k. The observation pipe shall be set on at least 2 inches of pea gravel that extends 4 to 6 inches above the top of the screen or highest slot. The gravel filter pack is not necessary if the natural soil is coarse sand or coarser.

Figure 385.60−1



(g) *Observations.* 1. Observation period. The observation period for soil saturation determinations shall begin on or before the appropriate date specified in Figure 385.60−2, and end June 1.

2. Alternate observation period. The department may approve an alternate observation period if the data presented conclusively demonstrates equivalency to conditions encountered during a normal spring observation period.

3. Minimum frequency. Observations shall be made on the first day of the observation period and at least every 7 days thereafter until the observation period is complete.

(h) *Conclusions.* 1. The highest level of soil saturation shall be considered the highest level of free water observed in an observation pipe on 2 occasions 7 days apart during the observation period.

2. The results of soil saturation determinations under this section shall be considered inconclusive if the precipitation totals under par. (c) do not equal or exceed:

a. 8.5 inches from September 1 through the last day of February; and

b. 7.6 inches from March 1 through May 31.

The Wisconsin Administrative Code on this web site is current through the last published Wisconsin Register. See also Are the Codes on this Website Official?

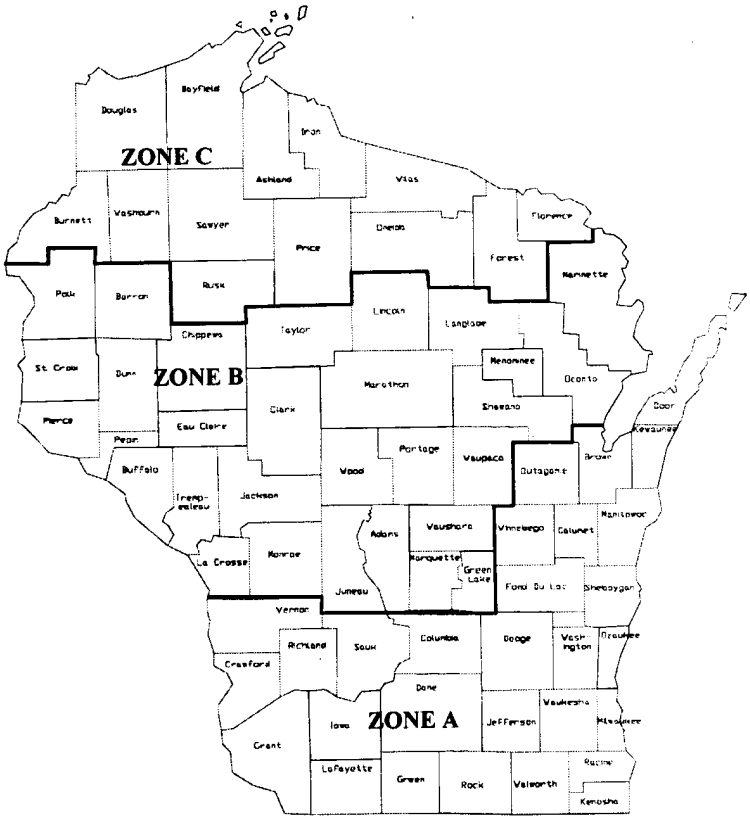


Figure 385.60−2
Latest Date to Begin Spring Soil Saturation Monitoring

Zone A	**February 15**
Zone B	**March 1**
Zone C	**March 15**

(i) *Reporting data.* 1. Within 180 days of the completion of the observations, 3 copies of the following data shall be submitted to the department for review:

a. A soil and site evaluation report pursuant to s. SPS 385.40.

b. Observation pipe installation, depth, location and elevation information.

c. Precipitation data and name of any local station used.

d. Observation dates.

e. Current and any prior observation results.

f. Any governmental unit observations or reports pertaining to the soil saturation determination observations, observation pipe construction or soil/site conditions.

2. Within 180 days of the completion of the observations, one copy of the data specified in subd. 1. shall be filed with the governmental unit having jurisdiction.

(j) *Report forms.* Soil saturation determination results shall be reported on forms specified by the department.

Note: Department forms required in this chapter are available for a nominal fee at telephone 800−DOC−SALE or Contact Through Relay or at doc-sales@doa.state.wi.us, or at no charge at the Department's Web site http://dsps.wi.gov through links to Safety and Buildings Division forms.

(k) *Failure to report.* Failure to file soil saturation determination results with the governmental unit and department within 60 days may disqualify the site from future soil saturation or interpretive determinations.

(4) HYDROGRAPH PROCEDURE. (a) 1. Except as provided in subd. 3., where regional water table fluctuations are considered in deep sandy soil, the predicted high groundwater elevation shall be established using hydrograph documentation.

2. Except as provided in subd. 3., the highest groundwater elevation shall be determined by direct observation during the soil profile evaluation or by one of the hydrograph methods outlined in pars. (b) to (d), whichever is highest.

3. The department or governmental unit may accept use of the hydrograph procedure to predict regional water table levels on sites where inclusions of sandy loam or finer soil material, or massive conditions exist.

(b) 1. If there is less than 5 feet to free water below original grade, the procedures detailed in sub. (2) or (3) shall be used to determine the highest predicted groundwater elevation at the site.

2. If there is 5 feet or more to free water below original grade, the hydrograph procedure may be used to determine the highest predicted groundwater elevation at the site.

(c) When free water at the site is 5 to 10 feet below grade, all of the following procedures apply:

1. A completed soil and site evaluation report pursuant to s. SPS 385.40 that confirms the elevation of free water, if observed, shall be prepared.

2. a. A slotted or screened groundwater elevation observation pipe shall be installed at the proposed system location to a depth of at least 12 inches below the free water elevation.

b. The observation pipe shall be installed pursuant to sub. (3) (f) 3.

3. a. The water level in the observation pipe shall be recorded after completion of the observation pipe installation and 7 days later.

b. The highest of the 2 water levels shall be used to complete the hydrograph procedure.

4. The permanent USGS groundwater elevation well or wells as assigned by the governmental unit or department shall be read within 24 hours of establishing the actual free water elevation at the site.

5. The hydrograph procedure shall be completed and the results shall be submitted for review to the governmental unit having jurisdiction in a format specified by the department.

Note: Department forms required in this chapter are available for a nominal fee at telephone 800−DOC−SALE or Contact Through Relay or at doc-sales@doa.state.wi.us, or at no charge at the Department's Web site http://dsps.wi.gov through links to Safety and Buildings Division forms.

(d) When free water at the site is more than 10 feet below grade, all of the following procedures apply:

1. A completed soil and site evaluation report pursuant to s. SPS 385.40 that confirms the elevation of free water, if observed, shall be prepared.

2. The permanent USGS groundwater elevation well or wells assigned to the project by the governmental unit or department shall be read within 24 hours of the actual free water determination at the site.

3. The hydrograph procedure shall be completed and the results shall be submitted for review to the governmental unit having jurisdiction in a format specified by the department.

Note: Department forms required in this chapter are available for a nominal fee at telephone 800−DOC−SALE or Contact Through Relay or at doc-sales@doa.state.wi.us, or at no charge at the Department's Web site http://dsps.wi.gov through links to Safety and Buildings Division forms.

(e) The governmental unit or the department may request more than one USGS groundwater well or other wells assigned by the governmental unit or the department be used to complete the hydrograph procedure.

(f) The governmental unit or the department may reject or suspend use of the hydrograph procedure when erratic groundwater tables are present due to recent, significant recharge events.

(5) ARTIFICIALLY CONTROLLED NAVIGABLE WATERS DETERMINATION. (a) If the groundwater elevation at a site is influenced by the artificial control of navigable waters by a recognized management entity, all of the following conditions shall be addressed:

1. If loamy sand or coarser soil textures prevail at a site, the groundwater elevation at the site shall be compared to the current and highest controlled navigable water elevation.

2. The highest normal groundwater elevation at such sites shall be the higher of either the observed elevation or an adjusted elevation based on the controlled water.

(b) An artificially controlled navigable waters determination report shall be prepared and submitted for review to the governmental unit having jurisdiction upon completion of the determination and associated report.

(6) SOIL SATURATION OBSERVATION PIPE REMOVAL. The following requirements shall apply to all groundwater elevation observation pipes installed pursuant to this section:

(a) *Removal timeline.* Unless specifically approved by the governmental unit or department, all groundwater elevation observation pipes shall be removed within 60 days after the completion of soil saturation determination.

(b) *Contamination conduit.* Any groundwater elevation observation pipe found by the department or governmental unit to be acting as a conduit for groundwater contamination shall be ordered removed immediately.

(7) VERIFICATION. (a) *Verification.* 1. The governmental unit or department may request verification of soil saturation determinations pursuant to s. SPS 385.50 (2), and proper observation pipe installation pursuant to this section.

2. The governmental unit or the department may require any groundwater elevation observation pipe deemed by the governmental unit or the department to be in poor contact with the surrounding soil to be reinstalled pursuant to this section.

(b) *On−site visits.* 1. The governmental unit or department may visit sites during soil saturation determination periods or at other reasonable times to determine the accuracy of data.

2. A written record of on−site visits in subd. 1. shall be maintained by the agency conducting the visits.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 02−129: r. and recr. (1) and (3) (h) 1., am. (2) (c) (intro.), (2) (c) 2. b., (3) (i) 1. (intro.) and 2., (4) (a) 1. and 2., (4) (c) (intro.), 2. b., 5., (d) (intro.) and 3., r. (3) (b), cr. (4) (a) 3., (4) (e) and (f), and (5), renum. (5) and (6) to be (6) and (7) Register January 2004 No. 577, eff. 2−1−04; corrections in (3) (a) and (h) made under s. 13.93 (2m) (b) 7., Stats., Register January 2004 No. 577; CR 07−100: am. (4) (c) 5., (d) 3. and (5) (b) Register September 2008 No. 633, eff. 10−1−08; **correction (2) (c) 1., (f) 3. (intro.), a., f., (g) 1., (i) 1. a., (4) (c) 1., (d) 1., (7) (a) 1. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

Chapter SPS 386

BOAT AND ON−SHORE SEWAGE FACILITIES

SPS 386.01 Applicability.
SPS 386.02 Definitions.
SPS 386.03 Petition for variance.
SPS 386.04 Contract applicability.
SPS 386.05 Approval required.
SPS 386.06 Holding tank, toilet and appurtenances.
SPS 386.07 Overboard discharge inactivation.
SPS 386.08 On−shore disposal facilities.
SPS 386.09 Alternate facilities.
SPS 386.10 Operation and maintenance.
SPS 386.11 Prohibited facilities.

Note: Chapter H 80 as it existed on September 30, 1980 was repealed and a new chapter H 80 was created effective October 1, 1980; renumbered to be chapter ILHR 84 effective June 1, 1983; renumbered to be chapter ILHR 86 effective March 1, 1985. Chapter ILHR 86 was renumbered Chapter Comm 86 under s. 13.93 (2m) (b) 1., Stats., and corrections made under s. 13.93 (2m) (b) 6. and 7., Stats., Register, February, 1997, No. 494. **Chapter Comm 86 was renumbered chapter SPS 386 under s. 13.92 (4) (b) 1., Stats., Register December 2011 No. 672.**

SPS 386.01 Applicability. This chapter as authorized by s. 30.71, Stats., for the abatement of water pollution through control of the discharge of sewage from boats maintained or operated at any time upon the inland or outlying waters of the state, defined in s. 29.001 (45) and (63), Stats., shall be applicable to any boat which is equipped with a toilet.

Note: Section 29.001 (45) and (63), Stats., provides: All waters within the jurisdiction of the state are classified as follows: Lakes Superior and Michigan, Green Bay, Sturgeon Bay, Sawyer's harbor and the Fox river from its mouth up to the dam at De Pere are outlying waters. All other waters, including the bays, bayous, and sloughs of the Mississippi river bottoms, are inland waters.

History: Cr. Register, September, 1980, No. 297, eff. 10−1−80; renum. from H 80.01, Register, May, 1983, No. 329, eff. 6−1−83; correction made under s. 13.93 (2m) (b) 7., Stats., Register, February, 1994, No. 458; corrections made under s. 13.93 (2m) (b) 7., Stats., Register, April, 2000, No. 532.

SPS 386.02 Definitions. The following definitions shall apply in the interpretation and enforcement of this chapter.

(1) "Department" means the department of safety and professional services.

(2) "Approved" means written approval from the department.

(3) "Boat" means every description of watercraft, other than a seaplane, on the water, used or capable of being used as a means of transportation on water, s. 30.50 (2), Stats.

(4) "Deodorant" means a substance or process which masks or destroys offensive odor.

(5) "Holding tank" means a permanently installed container which receives the discharge from one toilet or more and retains the sewage for shore disposal.

(6) "Maintain and operate" means to moor and occupy or to navigate, steer, sail, row or otherwise to exercise physical control over the use or movement of a boat.

(7) "Owner" means the person who has lawful possession of a boat by virtue of legal title or equitable interest therein which entitles that person to such possession.

(8) "Portable toilet" means a self−contained unit with a flushing device which retains sewage in a holding tank for disposal to a sewage system acceptable to the department.

(9) "Recirculating system" means a holding tank with all necessary appurtenances to provide for the recirculation of flushing liquid and for the receiving, venting and shore removal of sewage.

(10) "Sealed" means making a toilet incapable of discharging sewage into the waters upon which a boat is operated or moored.

(11) "Sewage" means human body wastes.

(12) "Toilet" means any device, facility or installation designed or constructed for use as a place for receiving sewage directly from the human body.

History: Cr. Register, September, 1980, No. 297, eff. 10−1−80; renum. from H 80.02 and am. (1) Register, May, 1983, No. 329, eff. 6−1−83; correction in (3) made under s. 13.93 (2m) (b) 7., Stats., Register, April, 2000, No. 532; **correction in (1) made under s. 13.92 (4) (b) 6., Stats., Register December 2011 No. 672.**

SPS 386.03 Petition for variance. (1) PROCEDURE. The department shall consider and may grant a variance to an administrative rule upon receipt of a fee and a completed petition for variance form from the owner, provided an equivalent degree of safety is established in the petition for variance which meets the intent of the rule being petitioned. The department may impose specific conditions in a petition for variance to promote the protection of the health, safety and welfare of the employees or the public. Violation of those conditions under which the petition is granted constitutes a violation of these rules.

(2) PETITION PROCESSING TIME. Except for priority petitions, the department shall review and make a determination on a petition for variance within 30 business days of receipt of all calculations, documents and fees required to complete the review. The department shall process priority petitions within 10 business days.

Note: Copies of the petition for variance (form SBD−8) may be downloaded for no charge at t the Department's Web site http://dsps.wi.gov through links to Safety and Buildings Division forms.

History: Cr. Register, September, 1980, No. 297, eff. 10−1−80; renum. from H 80.03, Register, May, 1983, No. 329, eff. 6−1−83; r. and recr. Register, October, 1984, No. 346, eff. 11−1−84; cr. (2), Register, February, 1985, No. 350, eff. 3−1−85.

SPS 386.04 Contract applicability. Applicable provisions of this regulation shall be construed to be a part of any order or agreement, written or verbal, for the installation of a holding tank, recirculating system, provisions of a portable toilet or shore disposal facility or appurtenances thereto.

History: Cr. Register, September, 1980, No. 297, eff. 10−1−80; renum. from H 80.04, Register, May, 1983, No. 329, eff. 6−1−83.

SPS 386.05 Approval required. (1) GENERAL. Any prefabricated tank, portable toilet or toilet proposed for installation in boats used upon the inland or outlying waters of the state shall receive the approval of the department. The manufacturer of any prefabricated tank, portable toilet or toilet shall submit, in duplicate, plans and specifications showing construction details for such facility. The owner of a custom built tank or toilet shall similarly submit such details in duplicate for approval prior to installation. The department may require the submission of other information or the unit itself, in the case of a portable toilet, to complete its review.

(2) APPROVED UNIT LISTING. The department shall keep a current list of approved prefabricated tanks, portable toilets and toilets for installation on boats and shall provide a copy of such current list to the bureau of law enforcement, department of natural resources.

History: Cr. Register, September, 1980, No. 297, eff. 10−1−80; renum. from H 80.05, Register, May, 1983, No. 329, eff. 6−1−83.

SPS 386.06 Holding tank, toilet and appurtenances. (1) MATERIAL. Each holding tank and toilet shall be constructed of a plastic which is resistant to acid, alkali and water; stainless steel with comparable resistance or other approved material. Metal combinations shall be galvanically compatible.

(2) HOLDING TANK STRENGTH. A holding tank, with all openings sealed, shall show no signs of deformation, cracking or leakage when subjected to a combined suction and external pressure

head of 5 pounds per square inch. It shall be designed and installed so as not to become permanently distorted with a static top load of 200 pounds.

(3) TEMPERATURE RESISTANCE. All materials used shall be capable of withstanding a temperature range of from −22º F. (winter storage) to the maximum operating temperature obtainable when operating in an ambient temperature of 140º F.

(4) MOUNTING. The tank and toilet shall be rigidly and permanently secured in place in such manner that the tank, toilet and piping will not fall.

(5) CAPACITY. The capacity shall be sufficient to receive the waste from the maximum number of persons that may be on board during an 8−hour period. The passenger rating shall be that indicated on the boat's capacity plate or that of a boat of similar size should the plate be illegible or missing.

(a) *Holding tank.* The capacity shall be determined on the basis of contribution of 4½ gallons per person per 8−hour day for a toilet of the hand pump type. If standard waterflush toilets are installed, the minimum capacity shall be at 13½ gallons per person per 8−hour day.

(b) *Recirculating toilet.* The capacity of the tank of a recirculating type unit shall be determined on the basis of a contribution of one−quarter gallon per person per 8−hour day.

(6) CONTROLS. Each holding tank shall contain a sewage level device which actuates a warning light or other visible gauge when the tank becomes three−fourths full. The light or other device shall be located so that it can be readily observed. The sewage level device shall be in operable condition at any time the boat is used. Such water level indicator shall be installed so as to be removable and be of such design and of such size as to make a watertight seal with a tank opening that is sufficiently large to accommodate the sewage level device.

(7) MAINTENANCE. (a) A separate manhole shall be provided in the top of the tank for maintenance purposes. A plate or cap capable of making a watertight seal shall be provided on the opening which shall be of sufficient size to readily permit cleaning and maintenance.

(b) *Deodorant.* Any deodorant used in a holding tank, approved portable toilet or recirculating toilet shall be easily obtainable and constitute a minimum hazard when handled, stored and used according to the manufacturer's recommendations and form no dangerous concentration of gases nor react dangerously with other chemicals used for the same purpose.

(8) OPENINGS FOR PIPING. Openings shall be provided in each holding tank for inlet, outlet and vent piping. The openings and pipe fittings shall be so designed as to provide watertight joints between the tank and the piping. Plastic opening fittings shall be of the rigid serrated type. Inlet openings should preferably be such that they could accommodate fittings that would be connected to piping of a minimum nominal inside diameter (I.D.) of 1½ inches. Outlet openings shall be such as to accommodate at least 1½ inch I.D. piping. Vent pipe openings shall be able to accommodate fittings for at least a one−half inch I.D. pipe, and should preferably be located at the top of a conical frustum or cylindrical vertical extension of the tank which is at least 2 inches in diameter at the base and 2 inches or more in height.

(9) PIPING AND FITTINGS. (a) *Size.* The piping from a toilet to the holding tank shall be at least as large as the trap of the toilet fixture. The piping from the holding tank or toilet to the pumpout connection shall have a nominal inside diameter of at least one and one−half inches.

(b) *Material.* All waste and venting piping shall be made of galvanized steel, wrought iron or yoloy pipe; lead; brass; type M copper; or flexible or rigid plastic pipe. Assembly shall be made with threaded fittings in the case of ferrous or brass pipe; lead or solder type fittings in the case of lead and copper pipe; and with threaded fittings, insertible clamp type fittings or weldable fittings in the case of plastic pipe. Clamps, usable only with plastic pipe, shall be made of stainless steel. All piping materials and fittings shall be capable of withstanding a pressure of at least 75 pounds per square inch and a combined maximum suction and external pressure head equivalent to 50 feet of water.

(c) *Location.* No piping, other than that for venting, associated with the boat sewage system shall pass through the hull. The vent pipe shall terminate with an inverted U−bend, the opening of which shall be above the maximum water level in the toilet or holding tank. At least one vent terminal shall be constantly open to the atmosphere. The terminal of the outlet pipe shall be of the female connection type and be located above the holding tank in a manner that makes gravity discharge of the contents impractical. It shall have an airtight capping device marked "WASTE" and the cap and flange shall be embossed with the word "WASTE".

(10) ELECTRICAL SYSTEM. The electrical system associated with the boat holding tank or toilet system shall conform to accepted practice and create no hazards.

(11) PORTABLE TOILET. Each portable toilet shall meet the material requirements and temperature resistance requirements of subs. (1) and (3). Exposed surfaces shall be of reasonably smooth and cleanable material. Capacity of the flush tank and holding tank shall be adequate for the intended use. Portable toilets shall be designed to prevent spillage of contents of the holding tank when the toilet is tipped or portable toilets shall be secured on board.

History: Cr. Register, September, 1980, No. 297, eff. 10−1−80; renum. from H 80.06, Register, May, 1983, No. 329, eff. 6−1−83.

SPS 386.07 Overboard discharge inactivation. No boat equipped with a means of discharging sewage directly from a toilet or holding tank into the water upon which the boat is moored or is moved shall enter inland or outlying waters of the state until such means of discharge is inactivated. An owner or operator of a boat equipped with such means of discharge shall contact a representative of the department of natural resources or a local law enforcement official with respect to inactivation before entering state waters. Overboard discharge inactivation shall include as a minimum either disconnection of the toilet piping, removal of the pumping device, securely plugging the discharge outlet, sealing of the toilet bowl with wax or other method approved by the official contacted. The inspecting official shall provide the boat owner or operator with a signed written statement as to the method of inactivation accepted. The owner or operator shall give information as to the inland or outlying waters he or she plans to navigate and as to the time of stay on such waters.

Note: Discharge of wastes from boats in any form would be contrary to s. 29.29 (3), Stats.

History: Cr. Register, September, 1980, No. 297, eff. 10−1−80; renum. from H 80.07, Register, May, 1983, No. 329, eff. 6−1−83; correction made under s. 13.93 (2m) (b) 5., Stats., Register, February, 1994, No. 458.

SPS 386.08 On−shore disposal facilities. (1) PUMP. A self−priming pump, suitable for pumping sewage, shall be provided for the on−shore removal of sewage from boat holding tanks and toilets; the installation of which shall be in accord with the appropriate state and local regulations. Head characteristics and capacity shall be based on installation needs for the site. The pump may be either fixed in position or portably mounted.

(2) SUCTION HOSE. The suction hose shall be of non−collapsible quality, preferably made with reinforcement. A quick−connect dripproof connector shall be fitted to the end of the hose that is attached to the boat piping outlet.

(3) DISCHARGE HOSE. Quality flexible hose, compatible with the pump characteristics, may be used. All permanent piping shall conform to the state plumbing regulations. [chs. SPS 382 and 384]

(4) SEWAGE DISPOSAL REQUIREMENTS. (a) *Public facilities.* When connection to a public sanitary sewer is economically feasible, the disposal piping shall be designed to discharge thereto. [ch. SPS 384]

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(b) *Private facilities.* When a public sewer is not available, a private sewage disposal system installed in compliance with applicable state plumbing regulations shall be provided unless adequate private treatment and disposal facilities are already available. [chs. SPS 382 and 383]

(5) WATER SUPPLY REQUIREMENTS. The on−shore disposal facility shall be served by a water supply piping system to permit flushing of the facilities serviced. If a potable water supply is the source for flushing, the distribution piping shall be protected from backsiphonage and backpressure.

(6) PLAN APPROVAL. Every owner, personally or through an authorized representative, shall obtain written approval from the department prior to award of any new or modified construction of shore disposal facilities set forth in this section. Three sets of plans and specification of such new or modified shore disposal facilities to be constructed for the purpose of pumping out boat holding tanks and toilets, receiving sewage from portable toilets, and disposing of the sewage shall be submitted to the department for review as to acceptability. Plans and specifications shall cover in detail the materials to be used, the pump characteristics, the water supply system, and when applicable, the size and construction of the septic or holding tank, results of soil percolation and boring tests and layout of the soil absorption system. Location of all wells within 50 feet of the absorption system, the surface water high water level and the general topography of the area shall be shown on the plans.

(7) DISPOSAL OF PORTABLE TOILET WASTES. Sewage from portable toilets shall be discharged into an approved fixture or other approved device designed to receive sewage.

History: Cr. Register, September, 1980, No. 297, eff. 10−1−80; renum. from H 80.08, Register, May, 1983, No. 329, eff. 6−1−83; **correction in (3), (4) (a), (b) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 386.09 Alternate facilities. (1) CHEMICAL TYPE TOILETS. Nonrecirculating chemical toilets may be used in lieu of a toilet flushed by water provided the container is not portable and the use of on−shore pumping facilities is provided for in the design of the unit. The design of the toilet and on−shore disposal adaptation shall be approved.

(2) INCINERATOR TYPE TOILETS. An approved incinerator type toilet may be used in lieu of a toilet flushed by water provided it is of adequate capacity to handle the passenger load. Equipment for on−shore removal and disposal of resulting ash shall be kept on board.

(3) PORTABLE TOILETS. An approved portable toilet may be used in lieu of a permanently installed toilet provided it is of adequate capacity to handle the passenger load. Sewage in the holding tank shall be properly disposed of on shore. Units shall be temporarily secured on board, if necessary, to prevent spillage of contents.

History: Register, September, 1980, No. 297, eff. 10−1−80; renum. from H 80.09, Register, May 1983, No. 329, eff. 6−1−83.

SPS 386.10 Operation and maintenance. All facilities controlled by this chapter shall be maintained in good operating condition at all times. All necessary tools for repair and maintenance shall be kept on board or on dock, as the case may be, and shall be properly stored when not in use. Extra fuses for electrical equipment and extra indicator lights shall be on hand. Pump−out suction hoses should be adequately drained through the pump before disconnection and then properly stored or capped. Pumping equipment shall be shut off before the hose is disengaged from the boat outlet pipe. Any equipment on board shall not be used or operated to allow discharge of sewage to surface waters.

History: Cr. Register, September, 1980, No. 297, eff. 10−1−80; renum. from H 80.10, Register, May, 1983, No. 329, eff. 6−1−83.

SPS 386.11 Prohibited facilities. No person shall use or permit to be used as a holding facility for sewage a pail, plastic bag or any other type of portable, semiportable or disposal receptacle aboard boats not specifically permitted by the provisions of this chapter.

History: Cr. Register, September, 1980, No. 297, eff. 10−1−80; renum. from H 80.11, Register, May, 1983, No. 329, eff. 6−1−83.

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Chapter SPS 387

PRIVATE ONSITE WASTEWATER TREATMENT SYSTEM REPLACEMENT OR REHABILITATION FINANCIAL ASSISTANCE PROGRAM

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Note: Chapter NR 124 as it existed on February 29, 1992 was repealed and a new Chapter ILHR 87 was created effective March 1, 1992. Chapter ILHR 87 was renumbered Chapter Comm 87 under s. 13.93 (2m) (b) 1., Stats., and corrections made under s. 13.93 (2m) (b) 6. and 7., Stats., Register, February, 1997, No. 494. Chapter Comm 87 as it existed on December 31, 1998 was repealed and a new chapter Comm 87 was created effective February 1, 1999. **Chapter Comm 87 was renumbered chapter SPS 387 under s. 13.92 (4) (b) 1., Stats., Register December 2011 No. 672.**

SPS 387.01 Purpose. The purpose of this chapter is to establish rules under s. 145.245, Stats., for the implementation and administration of a financial assistance program to reimburse eligible property owners a portion of the cost of replacing or rehabilitating failing private onsite wastewater treatment systems (POWTS).

History: Cr. Register, December, 1998, No. 516, eff. 2−1−99; CR 04−068: am. Register January 2005 No. 589, eff. 2−1−05.

SPS 387.02 Applicability. For applications received under the provisions of this chapter, subs. (1) and (2) shall apply. For date of installation of existing systems, sub. (3) shall apply.

(1) This chapter applies to applications received by the department on or after February 1, 2005.

(2) Applications received by the department prior to February 1, 2005 are governed by the rules as they existed on or before January 31, 2005.

(3) This chapter applies to existing failing POWTS installed prior to July 1, 1978.

History: Cr. Register, December, 1998, No. 516, eff. 2−1−99; CR 04−068: am. (1) and (2), cr. (3) Register January 2005 No. 589, eff. 2−1−05.

SPS 387.03 Definitions. The following definitions apply to this chapter.

(1) "Department" means the department of safety and professional services.

(2) "Determination of failure" has the meaning given in s. 145.245 (1) (a), Stats.

Note: Section 145.245 (1) (a), Stats., reads:

"Determination of failure" means any of the following:

1. A determination that a private sewage system is failing, according to the criteria under s. 145.245 (4), Stats., based on an inspection of the private sewage system by an employee of the state or a governmental unit who is certified to inspect private sewage systems by the department.

2. A written enforcement order issued under s. 145.02 (3) (f), 145.20 (2) (f) or 281.19 (2), Stats.

3. A written enforcement order issued under s. 254.59 (1), Stats., by a governmental unit.

(3) "Failing private sewage system" has the meaning given in s. 145.245 (4), Stats.

Note: Section 145.245 (4), Stats., reads:

The department shall establish criteria for determining if a private sewage system is a failing private sewage system. A failing private sewage system is one which causes or results in any of the following conditions:

(a) The discharge of sewage into surface water or groundwater.

(b) The introduction of sewage into zones of saturation which adversely affects the operation of a private sewage system.

(c) The discharge of sewage to a drain tile or into zones of bedrock.

(d) The discharge of sewage to the surface of the ground.

(e) The failure to accept sewage discharges and back up of sewage into the structure served by the private sewage system.

(4) "Governmental unit" has the meaning as given in s. 145.01 (5), Stats.

Note: Section 145.01 (5), Stats., reads:

"Governmental unit responsible for regulation of private sewage systems" or "governmental unit", unless otherwise qualified, means the county, except that in a county with a population of 500,000 or more these terms mean the city, village or town where the private sewage system is located. "Governmental unit" also includes a federally recognized American Indian tribe or band.

(5) "Owner", for the purposes of this chapter, means the person that owns the structure that is served by a failing POWTS.

(6) "Participating governmental unit" means a governmental unit which applies to the department for financial assistance under this chapter, and which meets the conditions as specified in s. 145.245 (9), Stats.

(7) "Person" means any one of the following:

(a) Any individual including the estate of an individual.

(b) Two or more individuals having a joint or common interest in a principal residence, as defined in s. 145.245 (1) (c), Stats., which uses a POWTS.

Note: Section 145.245 (1) (c), Stats., reads:

"Principal residence" means a residence which is occupied at least 51% of the year by the owner.

(c) A nonprofit corporation as defined in s. 181.0103 (17), Stats.

(7m) "POWTS" has the same meaning as s. SPS 381.01 (182) and (194).

Note: Sections SPS 381.01 (182) and (194) read:

(182) "POWTS" means a private onsite wastewater treatment system.

(194) "Private onsite wastewater treatment system" has the meaning given for 'private sewage system' under s. 145.01 (12), Stats.

Note: Section 145.01 (12), Stats., reads:

"Private sewage system" means a sewage treatment and disposal system serving a single structure with a septic tank and soil absorption field located on the same parcel as the structure. This term also means an alternative sewage system approved by the department including a substitute for the septic tank or soil absorption field, a holding tank, a system serving more than one structure or a system located on a different parcel than the structure. A private sewage system may be owned by the property owner or by a special purpose district.

(8) "Principal residence" means a residence which is occupied at least 51% of the year by the owner. Principal residence includes a residence owned by a trust or an estate of an individual, if the residence is occupied at least 51% of the year by a person who has an ownership interest as a beneficiary of the trust or estate.

(9) "Project period" means any of the following:

(a) For applications submitted to the department for installations of replacement of private sewage systems, project period means the period of time beginning on February 1 and ending on December 31 of the following year.

(b) For applications submitted to the department for annual costs of monitoring replacement experimental sewage systems, project period means the period beginning on February 1 and ending on December 31 of the 5th year after the date of installation.

(c) For applications for loans as provided in s. 145.245 (12m), Stats., the project period means the period beginning on February 1 and ending on December 31 of the following year after the date of installation.

Note: Records of applications are retained for the current project period only. Any loan applications, therefore, should be made in the current project period.

(10) "Small commercial establishment" has the meaning given in s. 145.245 (1) (e), Stats. Small commercial establishment includes a farm, including a residence on a farm, if the residence is occupied by a person who is an operator of the farm and if the maximum daily wastewater flow rate of the farm and residence is less than 5,000 gallons per day as determined by the design criteria of the state plumbing code.

Note: Section 145.245 (1) (e), Stats., defines small commercial establishment as a commercial establishment or a business place with a maximum daily wastewater flow rate of less than 5,000 gallons per day.

History: Cr. Register, December, 1998, No. 516, eff. 2−1−99; correction in (7) (c) made under s. 13.93 (2m) (b) 7., Register, April, 2000, No. 532; CR 04−068: am. (5), (7) (b) and (9) (intro.), cr. (7m) and (9)(c) Register January 2005 No. 589, eff. 2−1−05; correction in (7m) made under s. 13.92 (4) (b) 7., Stats., Register September 2008 No. 633; **correction in (1), (7m) made under s. 13.92 (4) (b) 6., 7., Stats., Register December 2011 No. 672.**

SPS 387.04 Application by governmental units to participate. An application by a governmental unit to participate in this program shall include at least all of the following:

(1) Certified copies of the following approved resolutions of the governing body of the governmental unit as follows:

(a) A resolution designating an authorized representative and authorizing such representative to apply for a grant under s. 145.245, Stats., and this chapter on behalf of the governmental unit. The authorized representative shall be an official or employee of the governmental unit.

(b) A resolution certifying that grants will be used for rehabilitation or replacement of a POWTS for a principal residence or small commercial establishment owned by a person who meets the eligibility requirements of s. 145.245 (5), Stats., that the funds will be used as provided under s. 145.245 (6), Stats., and that the maximum allowable amount of financial assistance will not exceed the amount permitted under s. 145.245 (7), Stats., and Tables 387.30−1 to 387.30−6.

(c) A resolution certifying that grants will be used for replacement or rehabilitation of POWTS which will be properly installed and maintained.

(d) A resolution certifying that financial assistance provided to the governmental unit will be disbursed to eligible owners, as specified in s. SPS 387.30 and s. 145.245, Stats.

(2) Documentation of a regulatory program to insure proper installation and maintenance of all new or replacement POWTS constructed in the area of jurisdiction of the governmental unit. An approvable regulatory program shall include the following:

(a) Adoption of an ordinance that specifically requires compliance with the maintenance program set forth in par. (d). and that specifically grants enforcement authority to the governmental unit.

(b) A system for providing written notice of the maintenance program requirements to each owner applying for a sanitary permit.

(c) An inspection program, that includes at least one inspection during installation of a POWTS.

(d) A maintenance program in effect.

Note: For additional maintenance program requirements, refer to ch. SPS 383.

(e) A central record keeping system, capable of maintaining records for a period of not less than six years from the date of a POWTS installation and capable of providing evidence that the governmental unit is administering the program as specified in this chapter.

(f) Where considered appropriate by the governmental unit, a system of user charges and cost recovery that assures that each recipient of service under this program will pay a proportionate share of the program costs. User charges and cost recovery may include the cost of the grant application fee and the cost of supervising and maintaining an installation and maintenance program.

(3) Other information as requested by the department.

History: CR 04−068: cr. Register January 2005 No. 589, eff. 2−1−05; **correction in (1) (b), (d) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 387.05 Grant application by participating governmental units. (1) (a) The participating governmental unit shall review information received from owners and determine eligibility under s. 145.245, Stats., and this chapter, except for applications for monitoring as specified in s. SPS 387.31.

(b) In order to receive an allocation of financial assistance, the participating governmental unit shall prepare and submit an application to the department. The application shall be on forms acceptable to the department.

Note: Department forms required in this chapter are available for a nominal fee at telephone 800−DOC−SALE or Contact Through Relay or at doc-sales@doa.state.wi.us, or at no charge at the Department's Web site http://dsps.wi.gov through links to Safety and Buildings Division forms.

(2) An application from a participating governmental unit for financial assistance to replace or rehabilitate a POWTS shall include all of the following:

(a) A list of owners approved as eligible by the participating governmental unit. The list shall include, at a minimum, the name of each owner and the maximum allowable amount of financial assistance as determined under s. SPS 387.30 or 387.31.

(b) Other information as requested by the department.

(3) Governmental units may request pre−application assistance including technical assistance from the department.

(4) Applications for grants from participating governmental units shall be postmarked no later than January 31 for consideration in the following project period. Participating governmental units may request in writing to the department prior to December 31, a six−month extension to the project period.

History: CR 04−068: cr. Register January 2005 No. 589, eff. 2−1−05; **correction in (1) (a), (2) (a) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 387.10 Categories of POWTS. The department and the participating governmental unit shall use the following categories of failing POWTS to determine financial assistance eligibility under s. 145.245 (5), Stats., and s. SPS 387.20, to financial assistance under s. 145.245 (7), Stats., and ss. SPS 387.30 and 387.31:

(1) ELIGIBLE FOR FINANCIAL ASSISTANCE AWARD. As specified in s. 145.245 (5), Stats., only category 1 or category 2 failing POWTS are eligible for assistance under this chapter.

Note: Section 145.245 (5), Stats., defines failure for two categories which are eligible for grant awards — Category 1, failing private sewage system as defined in s. 145.245 (4) (a) to (c), Stats.; Category 2, failing private sewage system as defined in s. 145.245 (4) (d), Stats.

(2) INELIGIBLE FOR FINANCIAL ASSISTANCE AWARD. As specified in s. 145.245 (5), Stats., those systems that fail as a result of back up of sewage into the structure served, are not eligible for assistance under this chapter.

Note: Section 145.245 (5), Stats., defines Category 3, failing private sewage system as defined in s. 145.245 (4) (e), Stats., as ineligible for a grant award.

History: Cr. Register, December, 1998, No. 516, eff. 2−1−99; CR 04−068: am. (intro.), (1) and (2) Register January 2005 No. 589, eff. 2−1−05; **correction in (intro.) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 387.20 Eligibility of owners. (1) GENERAL. A person who owns a principal residence served by a category 1 or 2 failing POWTS installed prior to July 1, 1978 or a business which owns a small commercial establishment served by a category 1 or

2 failing POWTS installed prior to July 1, 1978 is eligible for financial assistance under this chapter if the person or business:

(a) Meets the eligibility requirements set forth in s. 145.245, Stats., and this chapter.

Note: Section 145.245 (5) (c) 1., Stats., specifies that to be eligible for grant awards under this section, the annual family income of the person who owns the principal residence may not exceed $45,000. Section 145.245 (5) (d) 1., Stats., specifies that to be eligible for grant awards under this section, the annual gross revenue of the business that owns the small commercial establishment may not exceed $362,500.

(b) Submits an application to the participating governmental unit in which the failing POWTS is located.

(c) Has completed all rehabilitation or replacement work in accordance with the enforcement order and the state plumbing code, chs. SPS 382 to 384. Any variances or petitions to modify specific state plumbing code requirements shall be approved in writing by the department prior to the installation of the system.

(d) Owned the principal residence or small commercial establishment which is served by the category 1 or 2 failing POWTS. A person does not meet this condition if he or she did not own the property at the time the POWTS was failing and subject to a determination of failure. The buyer of the property is not eligible if the failing POWTS was replaced prior to the date of sale. The seller of the property is not eligible if the determination of failure was made after the date of sale.

(2) PRIVATE NONPROFIT ENTITIES. For the purposes of this chapter a small commercial establishment may be owned by a private nonprofit corporation as defined in s. 181.0103 (17), Stats.

Note: Section 181.0103 (17), Stats., means a nonstock nonprofit corporation subject to the provisions of this chapter, except a foreign corporation.

(3) INELIGIBLE ENTITIES. Structures owned by any of the following entities are not eligible for financial assistance awards:

(a) The state.

(b) An office, department, independent agency, institution of higher education, association, society or other body in state government.

(c) An authority created under ch. 231 or 234, Stats.

(d) A city, village, town or county.

(e) A federal agency, department or instrumentality.

(f) An interstate agency.

(4) REPLACEMENT AND EXISTING STRUCTURES. (a) For a principal residence or small commercial establishment that meets all of the requirements of s. 145.245, Stats., the maximum allowable financial assistance amount shall be limited to the minimum POWTS capacity that would have been necessary to serve the original structure. Any increase in capacity required to serve a larger replacement structure shall not be eligible.

Note: An example where par. (a) applies would be a POWTS that once served a 3−bedroom structure and the replacement structure is 4 or more bedrooms; the financial assistance would be based on the maximum allowable amount for a POWTS sized for 3−bedrooms.

(b) For a principal residence or small commercial establishment that meets all of the requirements of s. 145.245, Stats., the maximum allowable financial assistance amount shall be limited to the minimum POWTS capacity that would have been necessary to serve the existing structure. Any increase in capacity required to serve the existing structure may be eligible.

Note: An example where par. (b) applies would be a POWTS that once served a 2−bedroom structure and such POWTS was later determined to be acceptable for a 3−bedroom structure. The existing structure served by such POWTS contains 3 bedrooms; the financial assistance would be based on the maximum allowable amount for a POWTS sized for 3−bedrooms.

History: Cr. Register, December, 1998, No. 516, eff. 2−1−99; correction in (2) made under s. 13.93 (2m) (b) 7., Register, April, 2000, No. 532; CR 04−068: am. (1) (intro.), (1) (b), (d) and (3) (intro.), r. and recr. (4) Register January 2005 No. 589, eff. 2−1−05; **correction in (1) (c) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 387.21 Ineligibility of owners. (1) As specified under s. 145.245 (5m) (b), Stats., the department shall notify a governmental unit if it receives a certification under s. 49.855 (3), Stats., that an individual is delinquent in child support or maintenance payments or owes past support, medical expenses or birth expenses.

(2) The department or a governmental unit shall deny an application under sub. (1) if the department receives a certification under s. 49.855 (3), Stats., that the owner or an individual who would directly benefit by the financial assistance is delinquent in child support or maintenance payments or owes past support, medical expenses or birth expenses.

(3) The department or a governmental unit shall deny an application if a financial assistance amount under this chapter has been previously awarded for rehabilitation or replacement work at the same site, except for financial assistance awarded on an annual basis for monitoring of approved experimental POWTS, as specified in s. SPS 387.31.

History: Cr. Register, December, 1998, No. 516, eff. 2−1−99; CR 04−068: am. (2) and (3) Register January 2005 No. 589, eff. 2−1−05; correction in (1) and (2) made under s. 13.93 (2m) (b) 7., Stats., Register January 2005 No. 589; **correction in (3) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 387.30 Maximum allowable financial assistance amount. (1) ELIGIBLE REHABILITATION OR REPLACEMENT WORK. Except as provided under sub. (5) and s. SPS 387.72, POWTS work eligible for financial assistance awards shall be limited to those activities listed in the financial assistance awards under sub. (3), and Tables 387.30−1 to 387.30−6 and the maximum amount specified in s. 145.245 (7) (c), Stats.

Note: Section 145.245 (7) (c), Stats., limits the state grant share to $7,000.

(2) LEAST COSTLY METHODS. As specified in s. 145.245 (7) (b), Stats., costs allowable in determining financial assistance funding under this section may not exceed the costs of rehabilitating or replacing a POWTS by the least costly methods. Only eligible work necessary to meet the minimum requirements of the state plumbing code by the least costly methods may be allowed in determining financial assistance awards under this chapter.

Note: Section 145.245 (7) (b) reads: "Except as provided in par. (e), costs allowable in determining grant funding under this section may not exceed the cost of rehabilitating or replacing a private sewage system by the least costly method, except that a holding tank may not be used as the measure of the least costly method for rehabilitating or replacing a private sewage system other than a holding tank."

(3) FINANCIAL ASSISTANCE AWARDS. Financial assistance awards shall be determined by calculating the maximum allowable financial assistance amount by type of system, system component, or service provided.

(a) *Site evaluation and soil testing.* The maximum allowable financial assistance amount for site evaluation and soil testing is $250.

(b) *Installation of a replacement or additional POWTS anaerobic treatment component.* The maximum allowable financial assistance amount for installation of a replacement POWTS anaerobic treatment component is listed in Table 387.30−1.

(c) *Installation of a POWTS dosing component and lift pump or siphon.* The maximum allowable financial assistance amount for installation of a POWTS dosing component and lift pump or siphon is listed in Table 387.30−2.

(d) *Installation of a non−pressurized and in−ground pressure POWTS treatment or dispersal component.* The maximum financial assistance amount for installation of non−pressurized and in−ground pressure POWTS treatment or dispersal component is listed in Table 387.30−3.

(e) *Installation of an at−grade or mound POWTS treatment or dispersal component.* The maximum allowable financial assistance amount for installation of at−grade or mound POWTS treatment or dispersal component is listed in Table 387.30−4.

(f) *Installation of a POWTS holding tank component.* The maximum allowable financial assistance amount for installation of a POWTS holding tank component is listed in Table 387.30−5.

(g) *Replacement exterior grease interceptor.* The maximum allowable financial assistance amount for installation of a replacement exterior grease interceptor is listed in Table 387.30−6.

Table 387.30−1
MAXIMUM ALLOWABLE FINANCIAL ASSISTANCE AMOUNT FOR INSTALLATION OF A REPLACEMENT POWTS ANAEROBIC TREATMENT COMPONENT

Installation of a Replacement POWTS Anaerobic Treatment Component by Number of Bedrooms

Number of Bedrooms	Financial Assistance Amount	Number of Bedrooms	Financial Assistance Amount
1 or 2	$500	6	$750
3	550	7	875
4	650	8 or more	950
5	725		

Table 387.30−2
MAXIMUM ALLOWABLE FINANCIAL ASSISTANCE AMOUNT FOR INSTALLATION OF A POWTS DOSING COMPONENT AND LIFT PUMP OR SIPHON

Installation of a POWTS Dosing Component and Lift Pump or Siphon

Number of Bedrooms	Financial Assistance Amount
1 or 2	$1,100
3 or 4	1,200
5 or more	1,250

Table 387.30−3
MAXIMUM ALLOWABLE FINANCIAL ASSISTANCE AMOUNT FOR INSTALLATION OF NON−PRESSURIZED AND IN−GROUND PRESSURE POWTS TREATMENT OR DISPERSAL COMPONENT

Installation of a Non−Pressurized And In−Ground Pressure POWTS Treatment or Dispersal Component

Design Loading Rate in Gallons Per Square Foot Per Day	Percolation Rate When Properly Filed with the Governmental Unit Before July 2, 1994 (minutes per inch)	Financial Assistance Amount by Number of Bedrooms					
		1	2	3	4	5	Each Additional Bedroom
0.7 or more	0 – less than 10	$1,400	$1,450	$1,925	$2,100	$2,100	$250
0.60 to 0.69	10 – less than 30	1,475	1,475	2,100	2,200	2,250	250
0.50 to 0.59	30 – less than 45	1,475	1,475	2,100	2,400	2,450	300
0.49 or less	45 − 60	1,475	1,550	2,325	2,725	2,750	300

Table 387.30−4
MAXIMUM ALLOWABLE FINANCIAL ASSISTANCE AMOUNT FOR INSTALLATION OF AT−GRADE OR MOUND POWTS TREATMENT OR DISPERSAL COMPONENT

Installation of an At−Grade Or Mound POWTS Treatment or Dispersal Component

Type of Design	Financial Assistance Amount by Number of Bedrooms					
	1	2	3	4	5	Each Additional Bedroom
At−Grade	$2,050	$2,350	$2,600	$3,200	$3,800	$275
High Groundwater Mound	2,550	3,500	4,100	4,750	4,775	300
High Bedrock Mound	4,000	4,600	4,675	4,775	4,775	350
Slowly Permeable Mound [a]	3,250	3,600	4,400	4,750	4,750	375
Less Than 24” or Greater Than 12% Slope Mound	3,050	4,175	4,400	4,775	4,775	375

[a] A slowly permeable mound may be designed based on a percolation rate of greater than 60 minutes per inch and less than or equal to 120 minutes per inch, or a soil application rate of 0.3 or less.

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Table 387.30−5
MAXIMUM ALLOWABLE FINANCIAL ASSISTANCE AMOUNT FOR INSTALLATION OF A POWTS HOLDING TANK COMPONENT

Installation of a POWTS Holding Tank Component			
Number of Bedrooms	**Financial Assistance Amount**	**Number of Bedrooms**	**Financial Assistance Amount**
3 or fewer	$2,800	6	$4,400
4	3,200	7	4,775
5	3,850	8	4,775
		Each Additional Bedroom	400

Table 387.30−6
MAXIMUM ALLOWABLE FINANCIAL ASSISTANCE AMOUNT FOR INSTALLATION OF REPLACEMENT EXTERIOR GREASE INTERCEPTOR

Installation of Replacement Exterior Grease Interceptor by Capacity			
Capacity (in gallons)	**Financial Assistance Amount**	**Capacity (in gallons)**	**Financial Assistance Amount**
Up to 1,249	$550	1,500 to 1,749	$750
1,250 to 1,499	650	1,750 to 1,999	800
		2,000 or more	900

(4) USE OF FINANCIAL ASSISTANCE AWARD TABLES FOR SMALL COMMERCIAL ESTABLISHMENTS. In order to use Tables 387.30−1 to 387.30−6 for small commercial establishments, where applicable, divide the design daily wastewater flow rate in gallons per day by 150, round off to the next highest whole number and use the result in place of the number of bedrooms.

(5) EXCEPTIONS TO THE FINANCIAL ASSISTANCE AWARD TABLES. (a) The department may determine on a case−by−case basis the maximum allowable financial assistance amount for types of POWTS which are not covered under sub. (3) and Tables 387.30−1 to 387.30−6.

(b) The maximum allowable financial assistance amount for POWTS work done on property owned by a licensed plumber or contractor engaged in the business of installing POWTS shall be limited to two−thirds of the financial assistance amount or $4,667, whichever is less.

(c) The maximum allowable financial assistance amount for each principal residence or small commercial establishment shall be limited to 60% of the total cost of replacement or the amount determined under sub. (3) and Tables 387.30−1 to 387.30−6, whichever is less.

Note: Under s.145.245 (7) (d), Stats., if the income of the person who owns a principal residence exceeds $32,000 and the residence is served by a category 1 or category 2 failing private sewage system, the amount of the grant award under this section is limited to the amount determined in par. (c) less 30% of the amount which the person's income exceeds $32,000.

History: Cr. Register, December, 1998, No. 516, eff. 2−1−99; CR 04−068: am. Register January 2005 No. 589, eff. 2−1−05; CR 07−100: am. (1) and Tables 87.30−3 to 5 Register September 2008 No. 633, eff. 10−1−08; **correction in (1), (3) (b), (c), (d), (e), (f), (g), (4), (5) (a), (c) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 387.31 Maximum allowable financial assistance amount for experimental POWTS. (1) Pursuant to s. 145.245 (7) (e), Stats., this section establishes the parameters for allocating the maximum allowable state financial assistance award for experimental POWTS.

(2) The department may determine on a case−by−case basis the maximum allowable financial assistance amount for the installation and monitoring of an experimental POWTS installed under s. 145.02 (3) (b), Stats.

(3) As specified in s. 145.245 (11m) (d), Stats., the department may prorate available funds for the installation and monitoring of an experimental POWTS.

Note: Section 145.245 (7) (e), Stats., reads: "Costs allowable for experimental private sewage systems shall include the costs of installing and monitoring experimental private sewage systems installed under s. 145.02 (3) (b) and this section."

History: Cr. Register, December, 1998, No. 516, eff. 2−1−99; CR 04−068: am. Register January 2005 No. 589, eff. 2−1−05.

SPS 387.32 Ineligible rehabilitation or replacement work. For the purposes of establishing work which is not eligible for a financial assistance award under this chapter, the following items or projects are considered ineligible work:

(1) (a) Rehabilitation or replacement of a failing POWTS conducted before the date on which the governmental unit adopts this program.

(b) Rehabilitation or replacement of a failing POWTS with an experimental POWTS conducted without department pre−approval as specified under s. SPS 387.40 (1) (b).

(2) Except for site evaluation, soil testing under s. SPS 387.30 (3) (a) and issuing the sanitary permit, rehabilitation or replacement of a failing POWTS done before the determination of failure was made.

(3) Rehabilitation or replacement of a failing POWTS where a determination is made that public sewer is available to the property as determined by the municipality that owns or operates the public sewer.

(4) Connection to a municipal sewage treatment works.

(5) Installation of a small sewage treatment plant with a surface discharge.

(6) Installation of a POWTS to replace a privy.

History: Cr. Register, December, 1998, No. 516, eff. 2−1−99; CR 04−068: am. (1) to (3) and (6) Register January 2005 No. 589, eff. 2−1−05; **correction in (1) (b), (2) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 387.40 Application by owners. (1) CONTENTS. (a) In order to be eligible to receive a financial assistance award under this chapter, the owner of a failing POWTS shall submit an application to the participating governmental unit in which the POWTS is located. The application shall be made on forms that are acceptable to the department.

(b) In order to be eligible to receive a financial assistance award for experimental systems under this chapter, an owner shall receive written pre−approval for such system from the department and submit information, in addition to those items specified in par. (a), that:

1. Documents that the experimental system is being conducted by an individual or entity as a research project under the management of the department.

2. Indicates the objectives of the experiment relative to treatment capabilities.

3. Delineates proposed sampling protocols of influent and effluent loads and flows.

4. Includes a proposed schedule for the installation, monitoring, reporting and conclusion.

5. Includes a copy of the monitoring contract with an estimate of the costs of monitoring for the project period.

6. Provides other documentation as requested by the department or participating governmental unit.

(2) PRINCIPAL RESIDENCE. The application by the owner of a principal residence shall be made on forms acceptable to the department and shall include all of the following:

(a) *Evidence of annual family income.* A person who owns a principal residence shall provide the evidence of income required under s. 145.245 (5) (c) 2. and 3., Stats., or the alternative evidence of income required under s. 145.245 (5) (c) 4., Stats., and s. SPS 387.50.

(b) *Sanitary permit number and date of issuance.* A legible copy of the application for the sanitary permit issued by the governmental unit in which the POWTS is located.

(c) *Additional information.* If within three years of the date in which the enforcement order was issued or determination of failure was made, the applicant has bought or sold the principal residence served by a failing POWTS, the person shall provide the following additional information:

1. A copy of the closing statement, the sale contract, escrow agreement or other documentation which shows the date of sale of the property.

2. A copy of the closing statement, sale contract, escrow agreement or other documentation which shows that the cost of replacing the failing POWTS has or will be incurred at the owner's expense.

(3) SMALL COMMERCIAL ESTABLISHMENTS. The application for eligible owners of small commercial establishments, as specified in s. 145.245 (5) (a) 2., Stats., shall be made on forms acceptable to the department and shall include all of the following:

(a) *Evidence of annual business income.* As specified in s. 145.245 (5) (d) 2., Stats., a business which owns a small commercial establishment shall provide one of the following as evidence of annual gross revenue:

1. A copy of the federal income tax return filed by the business for the tax year prior to the year in which the enforcement order was issued or determination of failure was made or for the tax year in which the determination of failure was made.

2. If the small commercial establishment is owned by a private nonprofit corporation as defined in s. 181.0103 (17), Stats., the nonprofit corporation shall provide a profit and loss statement for the commercial establishment for the tax year prior to the year in which the enforcement order was issued or determination of failure was made or for the tax year in which the enforcement order was issued or determination of failure was made.

Note: As specified in s. 145.245 (11) (d), Stats., the department may not allocate more than 10% of the funds available under this subsection each fiscal year for grants for small commercial establishments.

Note: As specified in s. 145.245 (5) (a) 2., Stats., a business must own the small commercial establishment in order to be eligible for a grant amount. A business which leases a small commercial establishment is not eligible. Therefore, the application and income eligibility requirements must be met by the owners of the property served by the failing private sewage system.

(b) *Sanitary permit number and date of issuance.* A legible copy of the application for the sanitary permit issued by the county in which the POWTS is located.

(c) *Additional information.* If within 3 years of the date that the enforcement order was issued or determination of failure was made, and an owner has bought or sold the small commercial establishment served by a failing POWTS, the person shall provide the following additional information:

1. A copy of the closing statement, sale contract, escrow agreement or other documentation which shows the date of sale of the property.

2. A copy of the closing statement, sale contract, escrow agreement or other documentation which shows that the cost of replacing the failing POWTS has or will be incurred at the owner's expense.

(d) *Other information.* Any other information that may be requested by the department or participating governmental unit.

History: Cr. Register, December, 1998, No. 516, eff. 2−1−99; correction in (3) (a) 2., made under s. 13.93 (2m) (b) 7., Register, April, 2000, No. 532; CR 04−068: am. (1) (a), (b), (2), (3) (a) 1., 2., (b) and (c) Register January 2005 No. 589, eff. 2−1−05; **correction in (2) (a), (3) (a) 2. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 387.50 Alternate evidence of income. A participating governmental unit may consider any of the following criteria as satisfactory evidence of income:

(1) A copy of the owner's federal income tax return or federal income tax forms for the taxable year in which the enforcement order was issued or determination of failure was made and, if married and filing separately, a copy of the federal income tax return or federal income tax forms for that same year for the owner's spouse.

(2) In conjunction with the evidence of income required under sub. (1), an affidavit from the owner. The affidavit shall state the reason that a reduction in net income or adjusted gross income is expected in the year in which the enforcement order was issued or determination of failure was made, and the estimated amount of that reduction, for the taxable year in which the enforcement order is issued or determination of failure is made.

(3) An affidavit from the owner of the principal residence or small commercial establishment stating the reason that he or she was not required to file a federal income tax return or federal income tax forms in the year prior to the year in which the enforcement order was issued or for the year in which the determination of failure was made.

History: Cr. Register, December, 1998, No. 516, eff. 2−1−99; CR 04−068: am. Register January 2005 No. 589, eff. 2−1−05.

SPS 387.70 Allocation of funds and financial assistance awards. (1) GENERAL. The department shall allocate funds available for financial assistance awards to participating governmental units as provided in s. 145.245 (11), Stats., except for funds so specified in s. SPS 387.72.

(2) PRORATION. (a) If available funds are not sufficient to fully fund all applications, the department shall prorate available funds under s. 145.245 (11m), Stats. A prorated payment shall be deemed full payment of the financial assistance.

(b) A financial assistance application denied under s. 145.245 (11m) (c), Stats., is not eligible for awards in a later fiscal year.

(3) REVISION OF ALLOCATION OR AWARD. (a) If the department finds that an owner listed in the application of a governmental unit does not meet the eligibility requirements under s. 145.245 (5), Stats., the department may reduce an allocation to the governmental unit in the current or in a following fiscal year.

(b) The department may withhold funds allocated to a governmental unit and initiate enforcement under s. SPS 387.80, if a governmental unit does not meet the conditions specified under s. 145.245 (9), Stats.

(c) The department may reallocate any withheld or recovered funds in the following fiscal year.

(4) EXPERIMENTAL SYSTEMS. The allocation and payment of financial assistance awards for experimental POWTS shall be in accordance with ss. SPS 387.31 and 387.72.

History: Cr. Register, December, 1998, No. 516, eff. 2−1−99; CR 04−068: am. (1), (2) and (4) Register January 2005 No. 589, eff. 2−1−05; **correction in (1), (3) (b), (4) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

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SPS 387.71 Payments to participating governmental units. (1) Except as provided in s. SPS 387.72, financial assistance payments shall be made to the participating governmental unit which shall be responsible for disbursing all funds received from the department for the purposes for which the financial assistance award was made.

(2) A participating governmental unit shall request payment on forms acceptable to the department and shall include such information as required by the department to document satisfactory completion of eligible work. Payments shall be requested in accordance with the payment schedule included in the financial assistance award conditions.

(3) The total financial assistance amount payable to a participating governmental unit is limited to the amount of funds awarded to the participating governmental unit under this chapter. The specific financial assistance amount for individual owners of a POWTS is limited to the maximum allowable financial assistance amount under s. SPS 387.30. Payment based on a prorated financial assistance amount shall constitute a complete payment for that owner.

(4) At any time before final payment of the financial assistance, the department may review and audit any request for payment. Based on the review or audit, any payment may be reduced for prior overpayment or increased for prior underpayment.

(5) The participating governmental unit shall return to the department any funds, including any interest derived therefrom, received under this chapter which are not disbursed to eligible owners.

(6) The department may authorize the withholding of a financial assistance payment where it determines in writing that a participating governmental unit has failed to comply with program objectives, financial assistance award conditions, or reporting requirements. Such withholding shall be limited to only that amount necessary to assure compliance.

(7) The department shall withhold a financial assistance payment to the extent of any indebtedness, relating to the provisions of this chapter, of the participating governmental unit to the state of Wisconsin, unless it determines that collection of the indebtedness will impair accomplishment of the program objectives and that continuation of the specific project is in the best interest of the state of Wisconsin.

History: Cr. Register, December, 1998, No. 516, eff. 2−1−99; CR 04−068: am. (1) to (4), (6) and (7) Register January 2005 No. 589, eff. 2−1−05; **correction in (1), (3) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 387.72 Payments for monitoring of experimental systems. (1) Except as provided in ss. SPS 387.70 and 387.71, the department shall make financial assistance payments for monitoring of experimental POWTS to the individual or entity performing the monitoring for the maximum allowable amount on an annual basis up to the approved estimated costs for monitoring for eligible work for a project period.

(2) (a) The individual or entity performing the monitoring shall request payment on forms acceptable to the department and shall provide such information as required by the department to document satisfactory completion of eligible work. Subsequent annual payments for monitoring shall be requested in accordance with the payment schedule included in the financial assistance award conditions as approved by the department.

(b) The individual or entity performing the monitoring shall make a request to the department for payment of monitoring costs on an annual basis by submitting paid invoices documenting the eligible work provided as included in the financial assistance award conditions. Payments shall be awarded to the eligible individual or entity in accordance with the payment schedule included in the conditions of the financial assistance, the maximum allowable financial assistance amount, and usual and customary costs for monitoring of an experimental POWTS.

(c) A direct payment of monitoring costs shall be made to the individual or entity in accordance with this section.

(3) The total financial assistance amount payable to the individual or entity for monitoring shall be limited to the amount of funds available for allocation in the project period for experimental systems under this chapter.

(4) At any time before final payment of the approved financial assistance amount, the department may review and audit any request for payment. Based on the review or audit, any payment may be reduced for prior overpayment or increased for prior underpayment.

(5) The department may authorize the withholding of a financial assistance payment where it determines in writing that an owner has failed to comply with program objectives, financial assistance award conditions, or reporting requirements. Such withholding shall be limited to only that amount necessary to assure compliance.

(6) The department shall withhold a financial assistance payment to the extent of any indebtedness, relating to the provisions of this chapter, unless it determines that collection of the indebtedness will impair accomplishment of the program objectives and that continuation of the specific project is in the best interest of the state of Wisconsin.

History: Cr. Register, December, 1998, No. 516, eff. 2−1−99; CR 04−068: am. (1), (2) (a), (b) and (3) to (6) Register January 2005 No. 589, eff. 2−1−05; **correction in (1) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 387.80 Program enforcement. If the department has reason to believe that a violation of the provisions of this chapter or of any financial assistance award or financial assistance award amendment made under this chapter has occurred, the department may take any of the following actions:

(1) Under s. 145.245 (14), Stats., the department may cause written notice to be served upon the alleged violator, and in conjunction with that notice may either:

(a) Issue an order that corrective action be taken by the alleged violator within a reasonable time.

(b) Require that the alleged violator appear before the department for a hearing to answer the charges that a violation has occurred.

(2) Under s. 145.245 (14), Stats., the department may terminate or annul financial assistance made under this section and seek recovery of some or all financial assistance funds previously paid to the participating governmental unit or owner, if an order issued under s. 145.02 (3) (f), Stats., is violated.

(3) Under s. 145.245 (14) (d), Stats., the department may suspend or terminate additional financial assistance awards made under this chapter if the department finds that a POWTS previously funded by the participating governmental unit with financial assistance awarded under this chapter is not being or has not been properly rehabilitated, constructed, installed or maintained.

(4) The department may declare as ineligible project costs directly related to the violation.

(5) The department may seek an injunction or other appropriate relief under s. 145.02 (3) (f), Stats.

(6) The department may seek the imposition of a forfeiture for each violation, pursuant to s. 145.245 (15), Stats.

Note: Section 145.245 (15), Stats., reads:

Any person who violates this section or a rule or order promulgated under this section shall forfeit not less than $10 or more than $5,000 for each violation. Each day of continued violation is a separate offense. While an order is suspended, stayed or enjoined, this penalty does not accrue.

History: Cr. Register, December, 1998, No. 516, eff. 2−1−99; CR 04−068: am. (intro.), (2) and (3) Register January 2005 No. 589, eff. 2−1−05.

SPS 387.81 Program audit. (1) A governmental unit, owner or any other individual or entity receiving financial assistance award under this chapter shall make available to the department, upon request, any and all records necessary to ascertain

compliance with this chapter and the provisions as specified in s. 145.245, Stats.

(2) The department may require documentation of monitoring and an audit of the individual or entity providing monitoring.

History: Cr. Register, December, 1998, No. 516, eff. 2−1−99; CR 04−068: am. (1) Register January 2005 No. 589, eff. 2−1−05.

SPS 387.90 Petition for variance. (1) PROCEDURE. Under ch. SPS 303, the department shall consider and may grant a variance to an administrative rule upon receipt of a fee, a completed petition for variance form from the owner, and a completed municipal recommendation from the participating governmental unit having responsibility and an interest in the rule, provided an equivalency is established in the petition for variance which meets the intent of the rule being petitioned. The department may impose specific conditions in granting a variance to promote the protection of the health, safety or welfare of employees or the public. Violation of those conditions under which the variance is granted constitutes a violation of these rules.

(2) PETITION PROCESSING TIME. Except for priority petitions, the department shall review and make a determination on a petition for variance within 30 business days of receipt of all calculations, documents and fees required to complete the review. The department shall process priority petitions within 10 business days.

Note: The petition for variance form (SBD−9890) is may be downlaoded at no charge from the Department's web site at: http://dsps.wi.gov/SB/.

History: Cr. Register, December, 1998, No. 516, eff. 2−1−99; CR 04−068: am. (1) and (2) Register January 2005 No. 589, eff. 2−1−05; **correction in (1) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 387.91 Process for appeal. (1) DETERMINATION OF INELIGIBILITY BY A PARTICIPATING GOVERNMENTAL UNIT. When a decision by a participating governmental unit is that the applicant does not meet the eligibility criteria as established in this chapter and s. 145.245, Stats., the owner may appeal the decision of the governmental unit in accordance with ch. 68, Stats.

(2) DETERMINATION OF INELIGIBILITY BY THE DEPARTMENT. When a decision by the department is that the applicant does not meet the eligibility criteria as established in this chapter and s. 145.245, Stats., the owner may appeal the decision of the department in writing within 30 days from the date of said decision in accordance with s. 227.42, Stats.

Note: Section 101.02 (6), Stats., outlines the procedure for submitting requests to the department for appeal hearings and the department procedures for hearing appeals.

History: Cr. Register, December, 1998, No. 516, eff. 2−1−99; CR 04−068: am. (1) and (2) Register January 2005 No. 589, eff. 2−1−05.

Chapter SPS 390

DESIGN AND CONSTRUCTION OF PUBLIC SWIMMING POOLS AND WATER ATTRACTIONS

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Note: Chapter HSS 171 as it existed on November 30, 1989 was repealed and a new chapter HSS 171 was created effective December 1, 1989; Chapter HSS 171 was renumbered Chapter ILHR 90, Register, March, 1994, No. 459, eff. 4−1−94; Chapter ILHR 90 was renumbered to be chapter Comm 90 under s. 13.93 (2m) (b) 1., Stats., and corrections made under s. 13.93 (2m) (b) 6. and 7., Register, May, 1998, No. 509. Chapter Comm 90 as it existed on February 28, 2009, was repealed and a new chapter Comm 90 was created effective March 1, 2009. Chapter Comm 90 was renumbered chapter SPS 390 under s. 13.92 (4) (b) 1., Stats., Register December 2011 No. 672.

Note: See ch. DHS 172 for rules relating to safety, maintenance and operation of public swimming pools.

Subchapter I — Administration

SPS 390.01 Authority and purpose. This chapter is promulgated under the authority of ss. 101.02 and 145.26, Stats., to regulate the design and construction, alteration or reconstruction of public swimming pools, water attractions and associated equipment in order to protect the health and safety of the public.

History: CR 08−056: cr. Register February 2009 No. 638, eff. 3−1−09.

SPS 390.02 Application. (1) APPLICABILITY. This chapter applies to the design and construction of all public swimming pools, water attractions and associated slides, and to the reconstruction or alteration of all public swimming pools, water attractions and associated slides.

Note: Also refer to administrative rules administered by the department of Health Services, specifically ch. DHS 172, for additional requirements regarding public swimming pools, water attractions and associated slides.

Note: For accessibility information, refer to the final accessibility guidelines for recreational facilities, Federal Register, Vol. 67, No. 170, as published Tuesday September 3, 2002. Requirements relating to swimming pools, wading pools and spas are found under ADAAG 15.8.

(2) RETROACTIVITY. A rule of this chapter does not apply retroactively to public swimming pools, water attractions and associated slides existing prior to the effective date of the rule unless specifically stated in the rule.

(3) LOCAL ORDINANCES. A county, city, village or town or local board of health may enact ordinances for pools, water attractions and associated slides, provided the standards are not in conflict with this code.

(4) PETITION FOR VARIANCE. The department shall consider and may grant a variance to a provision of this chapter in accordance with ch. SPS 303.

Note: Chapter SPS 303 requires the submittal of a petition for variance form (SBD−9890) and a fee, and that an equivalency is established in the petition for variance that meets the intent of the rule being petitioned. Form SBD−9890 is available at no charge from the department at the Safety and Buildings Division Web site at http://dsps.wi.gov/SB through links to forms.

History: CR 08−056: cr. Register February 2009 No. 638, eff. 3−1−09; correction in (4) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 390.03 Definitions. In this chapter:

(1) "Accessible" means easily and readily exposed for inspection and the replacement of materials or parts with the use of tools.

(2) "ANSI" means the American National Standards, Institute, Inc.

(3) "Approved" means acceptable to the department based on its determination of conformance with this chapter and good public health practices.

(4) "ASME" means the American Society of Mechanical Engineers.

(5) "Basin" means any vessel constructed of manmade materials and designed to hold water to be used as a public swimming pool or water attraction.

(6) "Bed and breakfast establishment" has the meaning found in s. 254.61 (1), Stats.

Note: Section 254.61 (1), Stats., reads: "Bed and breakfast establishment" means any place of lodging that: (a) Provides 8 or fewer rooms for rent to no more than a total of 20 tourists or transients; (b) Provides no meals other than breakfast and provides the breakfast only to renters of the place; (c) Is the owner's personal residence; (d) Is occupied by the owner at the time of rental; (e) Was originally built and occupied as a single−family residence or, prior to use as a place of lodging, was converted to use and occupied as a single−family residence; and (f) Has had completed, before May 11, 1990, any structural additions to the dimensions of the original structure, including by renovation, except that this limit does not apply to any of the following: 1. A structural addition, including a renovation, made to a structure after May 11, 1990, within the dimensions of the original structure. 2. A structural addition, made to a structure that was originally constructed at least 50 years before an initial or renewal application for a permit under s. 254.64 (1) (b) is made and for which no use other than as a bed and breakfast establishment is proposed.

(7) "Breakpoint" means the line of separation between the shallow portion and the deep portion of a pool, defined by a sharp change in the slope of the pool bottom.

(8) "Children's slide" means a slide that has a maximum height of 4 feet as measured vertically from the slide entrance to the slide terminus and terminating in less than 24 inches of water.

(9) "Circulation system" means the outlets, inlets, equipment and piping of pools and water attractions designed to circulate water at a predetermined quantity and velocity in order to treat and purify the water, but does not include backwash piping.

(10) "Common wall" means a partition separating two pools, water attractions or whirlpools, or any combination of the aforementioned.

(11) "Contrasting color" means a variance from a color of 2 steps or more in value and less than 6.5 in value on the Munsell color−order system.

Note: Contrasting colors may cross hue and chroma lines.

(12) "Deck" means the unobstructed walking surface immediately adjacent to the pool or water attraction.

(13) "Deep portion" means that portion of a pool having a design water depth greater than 5 feet.

(14) "Department" means the department of safety and professional services.

(15) "Drop slide" means a pool slide or water slide where the terminus is 20 inches or more above the water level.

(16) "Flume" means that part of a slide within which sliding takes place.

(17) "Interactive play attraction" means a water attraction, including but not limited to manufactured devices using sprayed, jetted or other water sources with a flow rate of more than 50,000 gallons per day or a circulation system with water contacting the users and not incorporating standing or captured water as part of the user activity area.

Note: Splash pads and spray pads are examples of interactive play attractions.

(18) "NSF" means the National Sanitation Foundation.

(19) "Open swim" means a period of time when persons, other than those residing in living units associated with the pool or water attraction, are permitted to use the pool or water attraction.

(20) "Owner" or "operator" means a municipality, corporation, company, association, firm, partnership or individual owning, controlling or operating any public swimming pool.

(21) "Patron" means a user of the pool.

(22) "Play feature" means a physical object installed in a pool or water attraction that is intended for recreational use.

(23) "Pool" or "public swimming pool" has the meaning found in s. 145.26 (1), Stats. Public swimming pools include all of the following:

(a) "Cold soak pool" means a public swimming pool containing water colder than 72ºF that is commonly used in conjunction with therapy or training.

(b) "Combination pool" means a public swimming pool used for swimming and diving.

(c) "Competition pool" means any pool intended for use by accredited competitive aquatic events.

Note: Accredited organizations may include U.S. Swimming, U.S. Diving, National Collegiate Athletic Association, National Federation of State High Schools Association, or Wisconsin Interscholastic Athletic Association.

(d) "Diving pool" means a public swimming pool used exclusively for diving.

(e) "Exercise pool" means a public swimming pool of shallow depth usually associated with a health spa and which may or may not have a current.

(f) "Limited purpose pool" means a public swimming pool used for a purpose not otherwise defined, such as for apparatus swimming, underwater photography training or another special use by the public.

(g) "Mobile pool" means a public swimming pool constructed on a mobile structure that is capable of being transported from place to place.

(h) "Therapy pool" means a public swimming pool used exclusively for medically administered therapy.

Note: Note: Medically administered may be demonstrated by showing that a Department licensed therapist is responsible for the pool.

(i) "Wading pool" means a shallow public swimming pool having a maximum depth of 24 inches and intended for children's play.

Note: A zero−depth entry wading pool is an example of a wading pool.

(j) "Whirlpool" means a relatively small public swimming pool that uses high temperature water (greater than 93ºF) and that may include a water agitation system. A whirlpool may also be referred to as a spa.

Note: Section 145.26 (1), Stats., reads:

"Public swimming pool" means a fixed or mobile structure, basin, chamber or tank and appurtenant buildings and equipment that serve or are installed for use by the state, a political subdivision of the state, a motel, a hotel, a resort, a camp, a club, an association, a housing development, a school, a religious, charitable or youth organization, an educative or rehabilitative facility or another entity. "Public swimming pool" does not mean a fixed or mobile structure, basin, chamber or tank that only serves fewer than 3 individual residences.

(24) "Pool slide" means a slide where the drop from the slide terminus to water is less than 20 inches and the flume carries less than 100 gallons per minute of water.

(25) "Private guest room" means a room or rooms that provide sleeping accommodation offered for pay to tourists or transients.

(26) "Reconstructed or altered pool" means a pool construction project where replacement of or modification to the pool shell, circulation system and appurtenances occur. It does not include the replacement of equipment or piping previously approved by the department, provided that the type and size of equipment are not changed, nor does it include normal maintenance or repair.

Note: See listing in Appendix A−390.03 (24).

(27) "Run−out slide" means a waterslide where the rider does not enter into a plunge pool, but has a deceleration area that permits the rider to come to a stop before exiting the slide flume.

(28) "Shallow portion" means the portion of a pool having a design water depth of 5 feet or less.

(29) "Skimmer" means a device installed in a pool wall at the water level that is connected to the circulation piping and is intended to skim debris from the surface of a pool.

(30) "Slip−resistant" means a material that when wet has a coefficient of friction greater than 0.5.

(31) "Splash zone" means the area where water falls on the floor of an interactive play attraction.

(32) "Spray feature" means equipment that produces a flow of water on the patrons as part of a recreational experience.

Note: Spray features include geysers, water cannons and dumping buckets.

(33) "Swimming pool complex" means two or more pools that are located within the same enclosure or room.

(34) "Swimout" means an underwater seat area that has a floor that is higher than the floor of the pool and has walls that are recessed within the main pool wall.

(35) "Suction outlet" means a discharge port installed in the wall or floor of a pool that connects by way of piping to a pump.

(36) "Tourist rooming house" has the meaning found in s. 254.61 (6), Stats.

Note: Section 254.61 (6), Stats., reads:

"Tourist rooming house" means any lodging place or tourist cabin or cottage where sleeping accommodations are offered for pay to tourists or transients. "Tourist rooming house" does not include:

(a) A private boarding or rooming house, ordinarily conducted as such, not accommodating tourists or transients.

(b) A hotel.

(c) Bed and breakfast establishments.

(37) "Turnover rate" means the time for a given volume of water to pass through the circulation system. The volume of water is generally the basin volume and the time is usually expressed in hours.

(38) "Water attraction" means a public facility with design and operational features that provide patron recreational water activity other than conventional swimming and involves partial or total immersion of the body. Types of water attractions include:

(a) "Activity pool" means a water attraction with a depth of greater than 24 inches designed primarily for play activity that uses constructed features and devices including, but not limited to, pad walks, multiple flotation devices and similar attractions.

Note: The installation of a single basketball hoop, single flotation device or a single volleyball net does not transform a pool into a water attraction.

(b) "Leisure river" means a stream of near−constant depth in which the water is moved by pumps or other means of propulsion to provide a river−like flow that transports users over a defined path. A leisure river may include play features and devices. A leisure river may also be referred to as a tubing pool or a current channel.

(c) "Plunge pool" means a pool with a depth of greater than 24 inches, located at the exit end of a waterslide flume and intended and designed to receive slide users emerging from the flume.

(d) "Vanishing edge pool" means a water attraction where the top of one or more of the basin walls are submerged with no accompanying decks.

(e) "Vortex pool" means a circular pool that is equipped with a method of transporting water in the pool for the purpose of propelling users at speeds dictated by the velocity of the moving stream.

(f) "Wave pool" means a water attraction designed to simulate breaking or cyclical waves for the purposes of surfing or general play.

(g) "Zero−depth entry pool" means a water attraction having a sloped entrance to where the water depth is zero inches at the shallowest point.

(39) "Water attraction complex" means an enclosure or room where there are two or more water attractions or a water attraction and any number of public swimming pools.

(40) "Waterslide" means a slide where a water flow of 100 gallons per minute or more is intended to carry a rider down a flume.

History: CR 08−056: cr. Register February 2009 No. 638, eff. 3−1−09; renumbering of (39) and (40) made under s. 13.92 (4) (b) 1., Stats., Register February 2009 No. 638; correction in (14) made under s. 13.92 (4) (b) 6., Stats., Register December 2011 No. 672.

SPS 390.04 Plan review and approval. (1) REVIEW. (a) *Review requirements.* All designs under the scope of this chapter shall be submitted to the department for review and receive approval from the department prior to the start of construction in accordance with this section.

Note: Department forms required in this chapter are available for a nominal fee at telephone 800−DOC−SALE or Contact Through Relay or at doc-sales@doa.state.wi.us, or at no charge at the Department's Web site http://dsps.wi.gov through links to Safety and Buildings Division forms.

Note: For submittal of plumbing plans, see s. SPS 382.20.

(b) *Plans and specifications.* 1. At least 4 and no more than 5 complete sets of plans and one copy of specifications for the public swimming pool or water attraction design shall be submitted for review. These sets of plans and copies shall be clear, legible and permanently marked.

2. Plans submitted for review shall be accompanied by sufficient information for the department to determine if the installation and its performance will meet the requirements of this chapter.

Note: Sufficient information may include the diving board manufacturer's installation requirements and skimmer NSF/ANSI 50 ratings.

3. a. Plans and specifications, including adequate supporting design data, shall be prepared by a Wisconsin registered architect or professional engineer and bear that person's seal and signature.

b. Structural review of pool slides shall be based on conformance with the design requirements of slides and tower structures under ch. SPS 362.

4. The design for and extent of replaced or altered equipment and piping shall be included on the submittal of reconstructed or altered swimming pools or water attractions.

5. Pursuant to s. SPS 302.07 (3), the department shall review and make a determination on an application for plan review within 15 business days.

(c) *Revised submittals.* All changes or modifications, involving the provisions of this chapter, shall be approved in writing by the department prior to installation.

(d) *Revocation of approval.* The department may revoke any approval, issued under the provisions of this chapter, for any false statements or misrepresentation of facts on which the approval was based.

(e) *Expiration of approval.* Plans approved by the department shall expire 2 years after the date indicated on the approval letter, if construction has not commenced within that 2−year period.

(f) *Limitations.* A conditional approval of a plan by the department shall not be construed as an assumption by the department of any responsibility for the design. The department does not hold itself liable for any defects in construction or for any damages that may result from the specific installation.

(g) *Fees.* Fees for plan review submittals shall be as specified in ch. SPS 302.

(2) DETAILS. (a) *General.* 1. The name and address of the owner shall be included on the plans or in a separate report.

2. A map indicating the exact location of the facility with street address shall be included on the plans or in a separate report.

(b) *Site.* Site information shall be included on the plans indicating at least the location of all wells and utilities, topography and natural water features.

(c) *Plot plan.* 1. A general map and detailed scaled drawings shall be submitted showing the site plan or floor plan of pertinent portions of the public swimming pool or water attraction structure, public swimming pool or water attraction orientation, including the location of all slides, interactive play attractions and play features. The designed pool water elevation shall be shown on the detailed drawing.

2. All water supply facilities, sources of drinking water, public or private sewers and relative elevations of paved or other walkways and the equipment room floor shall be shown on the plans.

3. When public water and sewer systems are proposed to serve the public swimming pool or water attraction, the elevations of storm and sanitary sewer inverts and street grade shall be shown on the plans.

(d) *Construction plans.* Detailed scaled and dimensional drawings for each individual pool or water attraction shall include at least all of the following:

1. A layout plan showing dimensioned longitudinal and transverse cross sections of the public swimming pool or water attraction. Include location and type of inlets, overflows, pool drains, suction outlets, deck drains, drinking fountains or sources of drinking water, piping, entries and exits, hosebibbs, fences, telephones, design of deck, curb or walls enclosing the pool, paved walkways, overflow gutters or devices, ladders, stairs, diving boards, slides and play features.

2. A flow diagram showing the location, plan, elevation and isometrics of filters, pumps, chemical feeders, ventilation devices, heaters, surge tanks including operating levels, backflow preventers, valves, piping, flow meters, gauges, thermometers, test cocks, sight glasses and the drainage system for the disposal of pool and filter wastewater.

3. The plan drawings for all available sanitary facilities and any bathhouse facilities provided including dressing rooms, lockers and basket storage, showers and all other plumbing fixtures.

4. A single table with the specifications for the pool or water attraction and all associated equipment.

5. The design information used to determine the surface area and volume of the pool or water attraction.

(e) *Specifications.* Complete technical specifications for the construction of the pool or water attraction and all appurtenances to accompany the drawings under par. (d), shall include at least all of the following:

1. All construction details not shown on the plans.

2. Detailed requirements for the type, size, operating characteristics and rating of all mechanical and electrical equipment.

3. Number and location of plumbing fixtures and piping associated with the pool.

4. The sources of all water supplies.

5. Filter media such as diatomaceous earth, sand, gravel or other approved material.

6. Any information related to the project requested on the plan submittal application.

7. Any other information necessary to determine compliance with this chapter.

(3) ALTERNATE PUBLIC SWIMMING POOL OR WATER ATTRACTION DESIGN REVIEW. (a) *Innovation.* The provisions of this chapter are not intended to prevent innovative designs for public swimming pools or water attractions. The department may issue an approval of an alternate design if the design complies with the intent of this chapter.

(b) *Alternate designs.* 1. For an alternate public swimming pool or water attraction design, an approval shall be required before statewide installation and use.

2. Alternate designs submitted for review shall be accompanied by sufficient information for the department to determine if the design and its performance will meet the requirements of this chapter.

3. The department shall review and make a determination on an application for an alternate design submittal within 90 days of receipt of all information and fees required for completion of the review.

4. The department may include specific conditions in issuing an approval for an alternate design, including an expiration date for the approval. Violations of the conditions under which an approval is issued shall constitute a violation of this chapter.

5. If, upon review, the department determines that an alternate design does not comply with the intent of this chapter, the request for approval shall be denied in writing.

6. If a design receives alternate approval, a plan for the site−specific public swimming pool or water attraction complying with the alternate design approval shall be submitted in accordance with sub. (1).

(c) *Revisions.* If an approved alternate design is modified or additional assertions of function or performance are made, the approval shall be considered null and void, unless the design is resubmitted to the department for review and approval is granted.

(d) *Revocation of approval.* The department may revoke an approval issued under this section for any false statements or misrepresentation of facts or data on which the approval was based, or as a result of design failure.

(e) *Limitations.* An approval issued by the department for an alternate design may not be construed as an assumption of any responsibility for defects in design, construction or performance of any installation or for any damages that may result.

(f) *Fees.* Fees for the review of an alternate design under this section and any onsite inspections shall be submitted in accordance with ch. SPS 302. Fees for any miscellaneous inspections shall be as specified in s. SPS 302.04 (2).

(4) EXPERIMENTAL PUBLIC SWIMMING POOL OR WATER ATTRACTION DESIGN REVIEW. (a) *Experimental review.* The provisions of this chapter are not intended to prevent innovative designs for public swimming pools or water attractions. The department may issue an approval of an experimental public swimming pool or water attraction design for the purpose of proving compliance with the intent of this chapter.

(b) *Experimental designs.* 1. Experimental public swimming pool or water attraction designs submitted for review shall be accompanied by sufficient information as requested by the department.

2. The department shall review and make a determination on an application for an experimental submittal within 120 days of receipt of all information and fees required for completion of the review.

3. The department may include specific conditions in issuing an approval for an experimental design, including an expiration date for the approval. Violations of the conditions under which an approval is issued shall constitute a violation of this chapter.

4. If, upon review, the department determines that an experimental design is not acceptable, the request for approval shall be denied in writing.

5. If a design receives experimental approval, a plan for the site−specific public swimming pool complying with the experimental design approval shall be submitted in accordance with sub. (1).

6. The department may limit the number of applications for review of experimental systems.

(c) *Revisions.* If an approved experimental design is modified or additional assertions of function or performance are made, the approval shall be considered null and void, unless the design is resubmitted to the department for review and approval is granted.

(d) *Revocation of approval.* The department may revoke an approval issued under this section for any false statements or misrepresentation of facts or data on which the approval was based, or as a result of design failure.

(e) *Limitations.* An approval issued by the department for an experimental design may not be construed as an assumption of any responsibility for defects in design, construction or performance of any installation or for any damages that may result.

(f) *Fees.* Fees for the review of an experimental design under this section and any onsite inspections shall be submitted in accordance with ch. SPS 302. Fees for any miscellaneous inspections shall be as specified in s. SPS 302.04 (2).

Note: Plans and specifications are to be submitted to the Department of Safety and Professional Services, Safety & Buildings Division, P.O. Box 7162, Madison, Wisconsin 53707−7162 or to 201 West Washington Avenue, Madison, Wisconsin, 53703.

History: CR 08−056: cr. Register February 2009 No. 638, eff. 3−1−09; correction in (1) (b) 3. b., 5., (g), (3) (f), (4) (f) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 390.05 Construction. (1) CONSTRUCTION SUPERVISION. (a) *Options.* 1. The installation, alteration or reconstruction of any public swimming pool or water attraction shall be under the supervision of a construction contractor pursuant to s. 443.14 (6), Stats., or a Wisconsin registered architect or engineer.

Note: Section 443.14 (6), Stats., reads: Notwithstanding any other provision of this chapter, contractors, subcontractors or construction material or equipment suppliers are not required to register under this chapter to perform or undertake those activities which historically and customarily have been performed by them in their respective trades and specialties, including, but not limited to, the preparation and use of drawings, specifications or layouts within a construction firm or in construction operations, superintending of construction, installation and alteration of equipment, cost estimating, consultation with architects, professional engineers or owners concerning materials, equipment, methods and techniques, and investigations or consultation with respect to construction sites, provided all such activities are performed solely with respect to the performance of their work on buildings or with respect to supplies or materials furnished by them for buildings or structures or their appurtenances which are, or which are to be, erected, enlarged or materially altered in accordance with plans and specifications prepared by architects or professional engineers, or by persons exempt under subs. (1) to (5) while practicing within the scope of their exemption.

2. The supervising construction contractor, architect or engineer shall be responsible for the public swimming pool or water attraction being in conformance with this chapter and the plans and specifications approved by the department.

3. At the time of the arranging the first inspection, the owner or the owner's authorized agent shall designate to the department the name and address of the supervising construction contractor or the name and certification number of the supervising architect or engineer.

(b) *Operation and maintenance instructions*. Upon completion of any public swimming pool or water attraction, the owner or owner's agent shall be given complete written instructions concerning operation of the pool or water attraction, all equipment, the circulation system, and the maintenance of the water quality.

(c) *Certification of compliance.* 1. Prior to the completion of the final inspection of any public swimming pool or water attraction, the supervising construction contractor, architect or engineer shall provide to the department a compliance statement.

2. The compliance statement shall certify that the installation is in compliance with this chapter.

The Wisconsin Administrative Code on this web site is current through the last published Wisconsin Register. See also Are the Codes on this Website Official?

3. The compliance statement shall be in a format acceptable to the department.

(2) CONSTRUCTION INSPECTION. (a) Every new installation, alteration or reconstruction of a public swimming pool or water attraction shall be inspected as required in this section.

(b) The construction, alteration or reconstruction of any public swimming pool or water attraction shall be inspected by an authorized representative of the department.

Note: See Appendix A−390.05 (2) for listing of additional authorized representatives of the department.

(c) 1. A rough−in inspection shall be conducted when the piping system is installed and before the piping system is covered.

2. The supervising construction contractor, architect or engineer shall notify the department's authorized representative by telephone when underground work is complete and ready for an inspection to be scheduled.

3. Except as provided under subd. 3., work may not proceed until the inspection has been completed.

4. If the inspection is not made by the end of the normal business day following the day of notification, not including Saturday, Sunday or legal holidays, the installation work may proceed.

(d) 1. A final inspection shall be made when the construction, alteration or reconstruction is complete.

Note: A final inspection includes, but is not limited to, sanitary facilities, pools, fences and decks.

2. The supervising construction contractor, architect or engineer shall notify the department's authorized representative by telephone when all work is complete and ready for an inspection to be scheduled.

3. A request for the final inspection shall be made at least 24 hours prior to the requested time for the inspection.

4. The final inspection shall be completed within 5 business days of the requested inspection date.

Note: Inspections are only available during standard business hours.

(e) The supervising construction contractor, architect or engineer shall provide the necessary equipment and personnel required for the inspection as requested by the authorized representative of the department.

(f) If the authorized representative of the department finds that the installation does not comply with this chapter, necessary corrections shall be made to achieve compliance. The authorized representative of the department shall be notified by the supervising construction contractor, architect or engineer when the corrections are completed.

(3) AUTHORIZED INSPECTION AGENT. (a) Upon request from a governmental unit, the department may delegate to the governmental unit the responsibility to conduct construction inspections of any public swimming pool or water attraction in accordance with this section.

(b) The delegation of inspection authority by the department shall be contingent upon a request by the governmental unit demonstrating sufficient capabilities to complete the construction inspections.

(c) The department shall provide the governmental unit with a written decision of authorization or denial relative to the request under this subsection concerning construction inspection.

(d) The department shall monitor and periodically evaluate the construction inspection functions that are authorized to the governmental unit under this section.

(e) If a governmental unit wishes to discontinue the authorized construction inspection function under this section, written notification shall be made to the department at least 30 days prior to the discontinuance.

(f) The authorization to conduct construction inspections may be revoked by the department at the department's sole discretion.

History: CR 08−056: cr. Register February 2009 No. 638, eff. 3−1−09.

SPS 390.07 Fines. Any person who violates this chapter or any plan or specification included as part of an approval that is issued under this chapter shall be fined pursuant to s. 145.26 (6), Stats., not less than $100 nor more than $5,000 for each violation. Each day of continued violation is a separate offense.

History: CR 08−056: cr. Register February 2009 No. 638, eff. 3−1−09.

Subchapter II — The Design of Public Swimming Pool and Water Attractions

SPS 390.10 Minimum design requirements. **(1)** GENERAL REQUIREMENTS. (a) Any construction or alteration of a pool or water attraction shall be designed and installed as specified under this subchapter.

(b) The design of pools and water attractions shall be based on generally accepted engineering practices. Some of the details of design, construction and installation may vary from the specifications of this code, but the basic engineering principles desirable and necessary to protect the health and safety of pool users and patrons shall be used by the department for situations not addressed in this subchapter.

(2) LOCATION. Pools and water attractions shall be located on a site conducive to proper operation, maintenance and safety of the pool or water attraction. The site shall be well drained.

(3) STRUCTURAL STABILITY. All pools and water attractions shall be designed and installed to be structurally sound.

(4) MATERIALS. (a) Pools and water attraction surfaces shall be impervious, easy to clean, inert and nontoxic to humans.

(b) Pools and water attractions shall be constructed of materials that do not create a toxic condition in the environment.

(5) FREEZING. Where subject to freezing temperatures, the basin and appurtenances, piping, filter system, pump and motor and other components shall be designed and constructed to facilitate protection from damage due to freezing.

(6) EQUIPMENT AND MATERIAL APPROVAL. All material and equipment used in the operation of a pool or water attraction within the scope of ANSI/NSF 50 shall conform to ANSI/NSF 50 or the equivalent.

(7) VENTILATION. Ventilation shall be provided for all indoor pools and water attractions.

Note: See ch. SPS 364 for requirements for ventilation.

(8) SLIP RESISTANCE. (a) The surfaces intended to provide patron footing within the pool enclosure or on the deck shall have a slip−resistant surface.

(b) The surfaces intended to provide patron footing include patron walkways, deck, stair treads, zero−depth entries and water levels less than 24 inches in depth.

Note: Slide flume surfaces are not intended to provide patron footing.

(9) CONSTRUCTION TOLERANCES. Construction tolerances may not exceed the applicable design dimensions beyond those designated in Table 390.10.

Table 390.10
Construction Tolerances

Design Dimension	Construction Tolerance Permitted
Water depth in areas greater than 5′ deep	± 3″
Water Depth in areas up to 5′ deep	± 2″
Floor nozzle protrusion	± 1/8″
Stair treads and risers	± 1/2″[a]
Waterline for skimmer pools[b]	± 1/4″
Waterline for gutter and overflow trench pools	± 1/8″
Wall variance from vertical	± 3°

[a] The construction tolerance is measured over the entire staircase at the center of the treads.

[b] The construction tolerance for skimmer pools is measured as the difference between skimmer vertical center lines.

History: CR 08−056: cr. Register February 2009 No. 638, eff. 3−1−09; correction in (9) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 390.11 Basin design. (1) GENERAL. (a) Except as provided in par. (b) or (c), pool and water attraction basins shall conform to all of the requirements in this section.

(b) Therapy pool basin designs shall comply with the basic principles in s. SPS 390.10 (1) (b).

(c) Competition pool basins may be designed in accordance with the standards of the sanctioning organization.

(d) Competition pool basins that do not comply with s. SPS 390.10 (8) and made available for open swim shall be permitted only where another pool or water attraction that complies with s. SPS 390.10 (8) is available at the site for open swim.

(2) STRESS RELIEF. Provision shall be made for the relief of stress to basin walls and floors which may occur as a result of unbalanced hydrostatic pressures.

(3) DIVING AREAS. (a) Basins that include diving apparatus shall conform to one of the following:

1. The basin shall comply with the standards in this subsection.

2. The basin shall comply with the standards of a sanctioning organization acceptable to the department.

Note: See the appendix for further information.

(b) The design of a basin that includes a diving area shall comply with the profiles in Figure 390.11−1 and Table 390.11−1.

Figure 390.11−1
Diving Area Dimensions

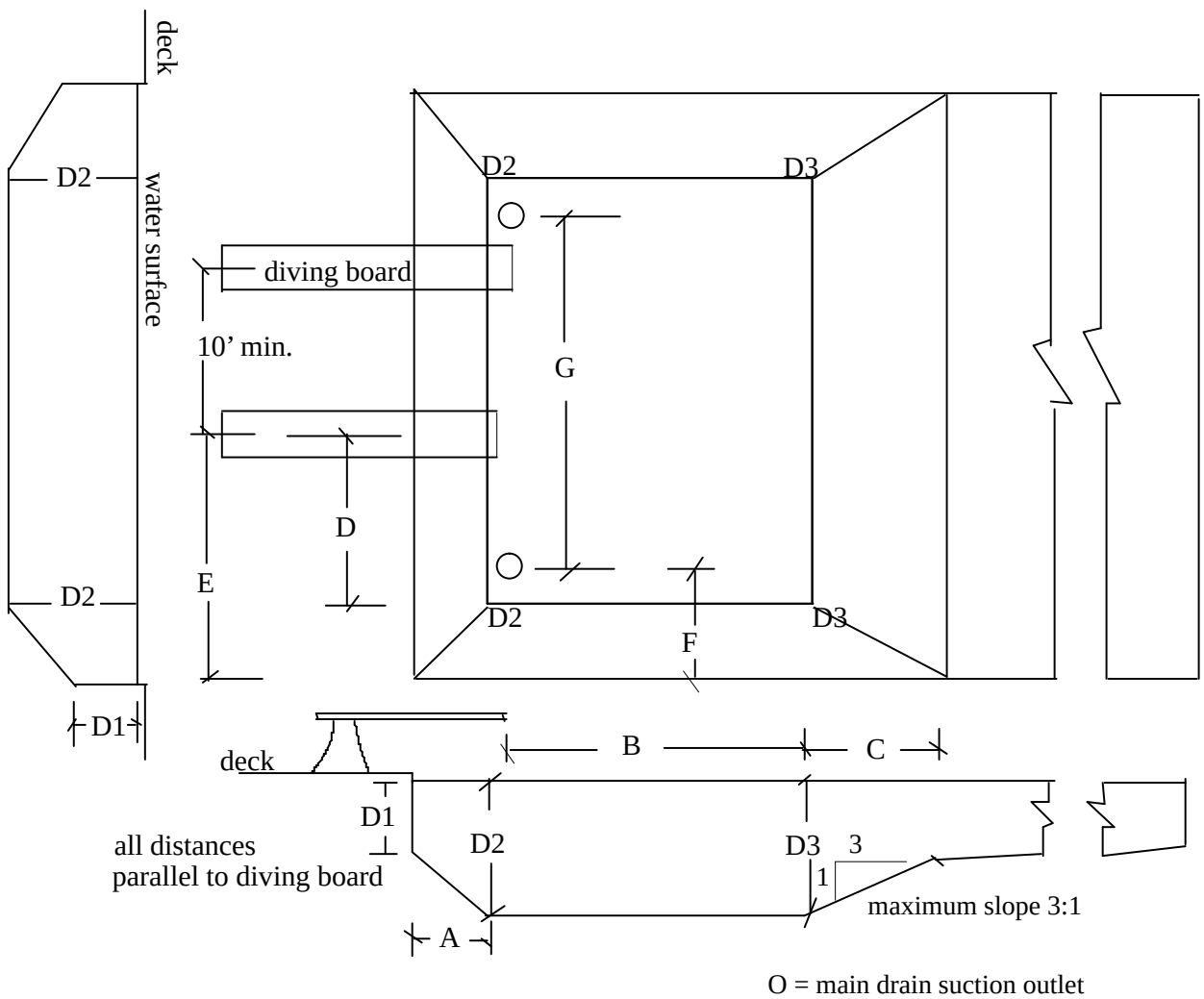


Table 390.11−1
Dimensions Related to Figure 390.11−1

Type of Pool		Depths			Lengths						
		D−1[1]	D−2	D−3	A[2]	B	C	D	E	F[3]	G[3]
With 26″ (2/3 M) Diving Board	Min	5′0″	9′0″	8′6″	2′6″	**	10′0″	5′0″	10′0″	*	*
	Max	D−2	*	D−2	3′0″	*	*	*	*	10′0″	20′0″
With 30″ (3/4 M) Diving Board	Min	5′0″	10′0″	9′6″	3′0″	**	12′0″	5′0″	10′0″	*	*
	Max	D−2	*	D−2	4′0″	*	*	*	*	10′0″	20′0″
With One Meter Diving Board	Min	5′0″	11′0″	10′6″	4′0″	**	15′0″	8′0″	10′0″	*	*
	Max	D−2	*	D−2	5′0″	*	*	*	*	10′0″	20′0″
With 3 Meter Diving Board	Min	5′0″	12′0″	11′6″	5′0″	**	18′0″	10′0″	15′0″	*	*
	Max	D−2	*	D−2	6′0″	*	*	*	*	10′0″	20′0″

* No limiting dimension.
** Distance is as required by the diving equipment manufacturer.
[1] The D−1 measurement shall be taken at the end wall or not more than 6 inches from the wall.
[2] The diving board length extending over the pool shall not be less than "A" and in accordance with the diving equipment manufacturer's installation instructions.
[3] This dimension is only applicable to pools with wall inlets.

(4) BASIN OBSTRUCTIONS. (a) 1. Protrusions, extensions and other functional elements within a basin may not create a safety hazard.

2. Protrusions, extension and other functional elements may not negatively impact the circulation system.

3. When an obstruction is a recreational object in water of 24 inches or more in depth, the obstruction shall be a color that contrasts with the color of the basin.

4. Basin obstructions in public swimming pools shall be no more than 2 feet in diameter, protrude undiminished in diameter to at least 5 feet above the pool floor and no less than 3 feet above the water level.

5. Obstructions including handrails, exercise equipment and therapy structures may only be installed in therapy pools.

(b) Stair and ladder handrails are not considered basin obstructions when installed in accordance with s. SPS 390.12.

(5) WALLS AND BULKHEADS. (a) *Basin walls.* 1. Basin walls shall be vertical.

2. Except for vanishing edge designs, basin walls shall extend above the highest water level at all times during operation.

3. Protruding corners shall be rounded so as to protect users from lacerations.

(b) *Interior walls and common walls.* In addition to the requirements in par. (a), interior walls and common walls may not exceed 18 inches in width.

(c) *Bulkheads*. Bulkheads may be installed only in pools with a department of health services−approved lifeguard staffing plan that addresses supervision of the bulkhead.

(6) COLORS AND FINISHES. (a) All pool interiors shall be light in color, having a value of 6.5 or greater on the Munsell color−order system.

(b) All colors, patterns or demarcation lines may not negatively impact observer's visualization of bathers.

(c) All demarcation lines shall be of contrasting color to the pool interior.

(7) FLOOR SLOPE. (a) Basin floors shall slope to drain.

(b) Basin floor slopes may not exceed 1:12 in water depths less than 5 feet.

(8) TRANSITIONAL RADIUS. (a) Basin walls shall be joined to the floor with a tangent radius.

(b) For areas less than 5 feet in depth, the maximum radius between the floor and the basin wall shall be 6 inches.

Note: See the appendix for information on measuring the radius dimension.

(9) WATER DEPTHS. (a) Basin depths for diving areas shall comply with Table 390.11−1.

(b) Basin depths for slide installations shall comply with Table 390.31−1.

(c) Except as permitted for wading pools in s. SPS 390.20, the shallowest water depth of the shallow end of pools shall be a minimum of 30 inches and a maximum of 42 inches.

(d) The water depth at the breakpoint in a combination pool shall be no less than 4.5 feet and no more than 5.5 feet.

(10) VANISHING EDGES. A single vanishing edge basin wall occupying a maximum of 50% of the basin perimeter may be included within a water attraction when all of the following are included in the design:

(a) The vanishing edge is located adjacent to water that is at least 5 feet deep.

(b) A catch ledge, a minimum of 3 feet in width or equivalent protection, is included on the dry side of the basin wall.

(c) The catch ledge shall be located outside of the basin within 3 feet vertically from the top of the basin wall.

(d) The catch ledge shall be designed to prevent a patron from rolling off the catch ledge.

(e) The catch ledge surface shall be constructed of materials that will not cause injury from abrasions or lacerations.

Note: See the appendix for further information on the design of vanishing edge basin walls.

History: CR 08−056: cr. Register February 2009 No. 638, eff. 3−1−09; correction in (1) (b), (d), (3) (b), (4) (b), (9) (a), (b), (c) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 390.12 Entries and exits, stairs, ladders, swimouts and benches. (1) ENTRIES AND EXITS. The minimum number, type and location of entries and exits shall be in accordance with Table 390.12−1.

Table 390.12−1
Entry and Exit Locations and Type

Basin Type	Entry and Exit Requirements
POOLS	
Swimming Pools	Minimum of two exits Exits within 75 feet along perimeter
Therapy Pools	As approved by the department
Wading Pools	Minimum of 50 percent of the pool
Whirlpools or Cold Soak Pools	Recessed stairs 25 feet from any point in the pool[a]
WATER ATTRACTIONS	
Wave Pools	Entry and exit at zero−depth entry, only[b]
Activity Pools	Exits within 50 feet from any point in the pool
Plunge Pools	Entry from slide, only Exits within 50 feet from any point in the pool[a]
Leisure Rivers	Minimum of one entry and exit
Vortex Pools	Minimum of one entry and exit
DIVING AREAS as delineated in s. SPS 390.11 (3)	
Diving Areas	On the perimeter of the pool within 50 feet of any point in the diving area[a]
Other Basin Types	Contact the department

[a] Travel to stairs is measured as the most direct path within the basin.
[b] Emergency exits may be permitted with written approval of the department.

(2) ZERO−DEPTH AND SHALLOW ENTRIES. (a) Except as permitted in par. (b) stairs, ladders, recessed treads and swimouts may serve as acceptable entries and exits.

(b) Where the distance from the pool floor to deck surface is 24 inches or less, such areas shall be considered as providing their own natural mode for entry and exit.

(3) STAIRS AND HANDRAILS. (a) *Stairways.* 1. Stairways shall be located only in areas of the basin with less than 5 feet of water depth.

2. Stairways shall be recessed so as not to protrude onto the basin floor.

3. All risers at the centerline shall have a maximum uniform height of 10 inches.

4. All treads shall have a minimum depth of 10 inches.

5. Stairways shall have a minimum width of 17 inches.

6. All treads shall have a minimum unobstructed surface area of 240 square inches.

7. Except as permitted in subd. 8., treads may not project beyond the face of the riser.

8. The maximum cantilevered coping at the deck level is one inch.

9. a. Except as required in subd. 9. b., stairways shall extend to the basin floor.

b. When stairways are located in a water depth over 4 feet, the lowest tread shall not be more than 4 feet below the deck.

10. The bottom riser height shall be allowed to vary from the other risers as may be required to meet the floor.

11. The leading edge of all steps shall be distinguished by a color contrasting with the color of the steps and pool floor.

12. All step corners shall be rounded to a radius of 1/2 inch.

(b) *Handrails.* 1. Handrails shall be provided for all stairways and ramps.

2. Handrails shall be located between 30 and 34 inches above the ramp surface or nosing of the stair treads.

3. Handrails shall be a maximum of 8 feet apart at deck level.

4. Handrails shall return to the pool wall, guard or deck or shall be continuous to the handrail of an adjacent stair.

5. Handrails shall be made of corrosion resistant materials.

6. Handrails shall be securely anchored.

7. Handrails shall be installed so they cannot be removed without the use of tools.

8. The leading edge of stair tread−mounted handrails shall be located on the bottom tread.

9. The leading edge of entirely deck−mounted handrails shall be located so as to extend to within 3 inches of the vertical plane of the bottom riser.

Note: See the appendix for further clarification of deck−mounted handrail installation.

10. The outside diameter of handrails shall be a minimum of 1−1/4 inches and may not exceed 1−15/16 inches.

11. There shall be at least 3 inches but not more than 6 inches clearance between the pool wall and the handrail.

(4) LADDERS. (a) Ladders shall be provided with two handrails.

(b) There shall be at least 3 but not more than 6 inches clearance between the basin wall and the ladder.

(c) The distance between ladder handrails shall be 17 inches minimum and 24 inches maximum.

(d) There shall be a uniform distance between ladder treads with a 7−inch minimum distance and 12−inch maximum distance.

(e) Ladder treads shall have a minimum horizontal uniform depth of 2 inches.

(5) RECESSED TREADS. (a) Recessed treads in a basin wall shall have a uniform vertical spacing of no less than 7 inches and no greater than 12 inches measured at the centerline.

(b) The vertical distance between the pool coping edge, deck or step surface and the uppermost recessed tread shall be 12 inches maximum.

(c) Recessed treads shall have a depth of no less than 5 inches and width of no less than 12 inches.

(d) Recessed treads shall drain into the pool.

(e) Recessed treads shall be provided with a handrail on each side of the treads.

(6) SWIMOUTS. (a) The horizontal surface of a swimout may not be greater than 20 inches below the waterline.

(b) A minimum unobstructed surface equal to that required for a stair under sub. (5) shall be provided in a swimout.

(c) The leading edge of a swimout shall be visually set apart with a marking color to contrast with the swimout.

(d) A swimout may occupy no more than 20 percent of the perimeter of the basin.

(e) The horizontal surface of a swimout may extend no further than 48 inches from the main basin wall.

(7) UNDERWATER SEATS AND BENCHES. (a) Underwater seats and benches shall be located in a recessed area to eliminate any protrusion beyond the main basin wall except in whirlpools and cold soak pools.

(b) 1. The width of the bench seat may not exceed 18 inches.

2. The depth of the water above the bench seat may not exceed 20 inches.

(c) The surface of all underwater seats and benches shall be of a color in distinct contrast to the color of the surrounding basin or have a 2−inch leading edge of contrasting boundary line.

(d) The words "bench below" shall be placed on the deck at the edge of the basin at the bench area in a color in distinct contrast to the deck background.

(e) Underwater seats and benches may not be considered an entry or exit.

(8) LIFT CHAIRS. Water supply outlets serving lift chairs shall terminate within 18 inches of the chair's support post.

History: CR 08−056: cr. Register February 2009 No. 638, eff. 3−1−09; correction in (1), Table 390.12−1 made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 390.13 Deck. (1) MINIMUM DECK. (a) Except as permitted in pars. (b) to (e), deck shall extend around the entire perimeter of all basins within the same enclosure.

(b) A water attractions shall be provided with deck immediately adjacent to a basin where patrons are allowed to walk.

(c) A wading pool shall be provided with deck around at least 50 percent of the basin perimeter.

(d) A whirlpool shall be provided with deck around at least 50 percent of the basin perimeter.

(e) A therapy pool shall be provided with deck at all entry and exit points.

(2) DECK WIDTH. (a) Except as required in pars. (b) to (e), deck shall extend for at least 6 feet from all basins.

(b) Deck shall extend for at least 5 feet from a whirlpool basin.

(c) Deck shall extend for at least 3 feet around deck obstructions and equipment.

(d) Deck shall extend for at least 12 feet from a basin with a water depth exceeding 24 inches to a basin with a water depth less than 30 inches or an interactive play attraction.

(e) Deck shall extend for a minimum 15 feet from a basin to locker or shower room doors where the basin meets all of the following criteria:

1. The basin consists of 3,500 square feet of water surface.

2. The basin has a water depth exceeding 24 inches.

(f) Deck required in par. (e) shall extend for at least 12 feet wide at all locker or shower room doors.

(g) Deck areas that do not provide the minimum deck required in pars. (b) to (f) shall be installed so as to permanently prohibit public access from the deck.

Note: See appendix for further information.

(3) DECK OBSTRUCTIONS. (a) Except as permitted in par. (c), deck obstructions, including roof support columns, may be no greater than 2 feet in diameter and of contrasting color so as to provide adequate clearance, safety, visibility and access where a department of health services−approved lifeguard staffing plan is not required.

Note: Deck obstructions include pillars, play equipment and themeing. Equipment includes but is not limited to ladders, life guard chairs, lift chairs and handrails.

(b) Deck obstructions shall extend a minimum of 3 feet above the deck so as not to create a tripping hazard.

(c) Deck obstructions may occupy a maximum of 10 percent of the pool perimeter for basins where a lifeguard staffing plan is not required.

(4) IN−DECK VENTILATION SYSTEMS. (a) Ventilation registers in decks shall be installed so that water flowing from the surrounding pool deck will not enter the registers, but will flow to the deck drains serving the deck.

(b) Ventilation registers in decks shall be installed so that the registers are one inch higher than the deck drain grating.

(c) Where ventilation registers are installed in decks, the owner of the facility shall obtain approval from the department of health services for their means of deck maintenance.

(5) DECK SLOPES. (a) Except as permitted in subds. 2. and 3., interior decks shall be sloped so as to effectively drain to deck drains.

1. The maximum slope of interior decks shall be ½ inch per foot.

2. A maximum of 6 feet of deck adjacent to a plunge pool exit, stairway or runout slide terminal section may discharge to the surge tank.

3. A maximum width of 20 inches of deck between a wall and a basin may discharge to the basin.

(b) 1. Except as permitted in subd. 2., exterior decks shall be sloped a maximum of ½ inch per foot as to effectively drain to deck drains, perimeter areas or to the plumbing storm system.

Note: See s. SPS 382.36 for plumbing storm system design information.

2. Exterior elevated decks may be drained to underlying soils to infiltrate.

(c) Decks shall be constructed so that standing water shall be no deeper than 1/8 inch, 20 minutes after the cessation of the addition of water to the deck.

Note: Two USA quarters may be stacked in order to test the standing water depth.

(6) DECKS, RAMPS AND WALKING AND STEP SURFACES. (a) 1. Decks, ramps walking and step surfaces shall be nontoxic.

2. Surfaces shall be slip resistant.

3. Surfaces shall be easily cleanable.

4. Surfaces shall not cause injury to user's feet under normal conditions.

(b) The deck edge that pool patrons may come in contact with shall be radiused, tapered or otherwise relieved to minimize sharpness.

(7) JOINTS. (a) The maximum joint width between pool decks and other decks or walkways, including joint material, shall be 3/8 inch of horizontal clearance with a maximum difference in vertical elevation of ¼ inch.

Note: This section refers to joint widths between the pool deck and other adjacent decks.

(b) Construction joints between pools and concrete decks shall be watertight.

(8) DECK STAIRS. (a) Exterior deck stair risers shall be uniform and have a minimum height of 4 inches and a maximum height of 7 inches.

(b) Exterior deck stair treads shall be uniform and have a minimum depth of 11 inches.

(c) A handrail shall be provided along both sides of stairs having more than one riser including the riser to the deck.

(d) The height of the handrail shall be at least 34 inches but not more than 38 inches above the nosing of the tread.

(e) Handrails shall return to the pool wall, guard or deck or shall be continuous to the handrail of an adjacent stair.

(f) Handrails shall be located at the outside edge of stairs.

Note: Interior deck stairs shall comply with the requirements in chs. SPS 361 to 366, the Commercial Building Code.

(9) SERVICE EQUIPMENT. (a) *Access to valves*. 1. Valves installed in or under any deck shall have access provided for operation, service and maintenance.

2. Access covers shall be provided for valve pits.

(b) *Cleaning*. 1. One hose bibb shall be provided in each public swimming pool or water attraction equipment room.

2. Additional hose bibbs shall be provided as necessary, and at intervals so as to permit adequate cleaning of the deck and toilet facilities using a maximum of 100 feet of hose when laid across the deck surface.

(10) LANDSCAPING. (a) Landscaping within the barrier required in s. SPS 390.18 (4) shall comply with at least one of the following:

1. Organic material and inorganic pervious material shall be separated from the otherwise required deck by an additional 5 feet of deck.

2. Organic material and inorganic pervious material shall be installed in a 4−inch depression surrounded by a 42−inch high barrier.

(b) Sand play areas may not be located within a pool enclosure unless all of the following are met:

1. The sand play area is separated from the deck by a 42−inch high rope and bollard or other fence barrier.

2. Foot or body showers shall be provided at any entrances to the deck from the sand play area.

3. Sand play areas shall be located outside the deck required in sub. (2).

History: CR 08−056: cr. Register February 2009 No. 638, eff. 3−1−09; correction to numbering of (8) (f) made under s. 13.92 (4) (b) 1., Stats., Register February 2009 No. 638; correction in (10) (a) (intro.) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 390.14 Circulation systems. A water circulation system consisting of pumps, piping return inlets and suction outlets, filters and other necessary equipment shall be provided that complies with all of the following requirements:

(1) TURNOVER RATE. Circulation system equipment shall be designed to produce a turnover rate as specified in Table 390.14−1 or Table 390.14−2.

Note: See the appendix for further information.

Table 390.14−1
Maximum Turnover Rates[a]

Area/Basin Type[b]	Maximum Turnover Rate (hours)[c]
Swimming/Diving	6
Activity	2[d]
Interactive Play Attraction	0.5
Lap Lanes	6
Leisure River	2
Plunge	1
Runout Slide	1
Vortex	1
Wave	2
Cold Soak	4
Wading Pool	1
Whirlpool	0.5

[a] Calculate an average turnover time for multi−sectional basins.
[b] For pool types not listed herein, contact the department.
[c] Based on flow and pressure drop with a clean filter condition.
[d] Or as otherwise approved by the department.

Table 390.14−2
Therapy/Exercise Turnover Times

Temperature in ºF	Load[a] (gals/person)	Maximum Turnover Time (hours)
< 72 – 93	≥ 2,500	4
< 72 – 93	≥ 450	2
< 72 – 93	≤ 450	1
> 93 – 104	N/A	0.5

N/A Not applicable
[a] The number of persons is equal to the posted patron load.

Note: A therapy area within a multi−section pool having a temperature of ≤ 93 ºF is considered to be an activity pool.

(2) SEPARATE SYSTEMS. The circulation system shall be separate for each public swimming pool or water attraction.

(3) SEPARATION FROM SLIDES AND PLAY FEATURES. (a) Except as provided in pars. (b) and (c), public swimming pool or water attraction circulation systems may not serve slide or spray features.

(b) A maximum of 10 percent of the required circulation system rate may be provided for the lubrication of slides or to spray features.

(c) Flow in excess of the required circulation rate may serve slides and spray features.

(4) ACCESSIBILITY. Circulation system equipment, including but not limited to pumps, skimmers, filters, gauges, meters and thermometers, shall be readily accessible for inspection, repair or replacement.

(5) COMPONENT STANDARDS. Equipment that is within the scope of ANSI/NSF 50, circulation system components and related materials, shall be listed by an acceptable listing agency to meet ANSI/NSF 50 or equivalent.

(6) INSTALLATION. (a) Pool equipment and related piping shall be supported to prevent damage from misalignment and settling.

(b) Pool equipment shall be installed in accordance with manufacturer's printed instructions and as specified in this chapter. If there is a conflict between the manufacturer's printed instructions and requirements of this chapter, the requirements of this chapter shall take precedence.

(7) VELOCITIES AND PIPE SIZING REQUIREMENTS. (a) Velocities in the circulation system may not exceed:

1. Ten feet per second in discharge piping other than copper.

2. Eight feet per second in copper discharge piping.

3. Six feet per second in suction piping.

4. One and one−half feet per second through suction grates.

(b) Pool piping shall be sized to permit the rated flows for filtering and cleaning without exceeding the maximum design head of the pump.

(8) GAUGES AND FLOW METERS. (a) A pump suction compound gauge shall be included in all circulation systems.

(b) A pump discharge gauge shall be located upstream of all throttling valves.

(c) A filter pressure gauge shall be included serving all filters in circulation systems.

(d) A flow meter capable of displaying flow during filtration shall be included in all circulation systems.

(9) TESTING. Circulation system piping that is installed onsite shall be subjected to an induced static hydraulic pressure test at 25 pounds per square inch for at least one hour.

(10) FILTERS. (a) *Design*. Filters shall be specified so that when operated and maintained in accordance with the manufacturer's printed instructions, the system provides the water clarity required in ch. DHS 172.

(b) *Maximum flow rate*. 1. Filters other than high rate sand filters shall be specified so that the maximum flow rate does not exceed those under ANSI/NSF 50.

2. High rate sand filters shall be specified so that the maximum flow rate does not exceed 15 gallons per minute per square foot or bed surface area.

(c) *Pressure release*. 1. Pressure−type filters shall be provided with a means to permit the release of internal pressure.

2. Filters incorporating an automatic air vent as the principal means of air release shall have a lid that provides a slow and safe release of pressure as a part of the design and have manual air release in addition to the automatic release.

3. Separation tanks used in conjunction with a filter tank shall comply with subd. 2.

4. The following statement shall be placed within the area of the air release so as to be clearly visible: "WARNING. DO NOT START UP THE SYSTEM AFTER MAINTENANCE WITHOUT FIRST OPENING THE AIR RELEASE AND PROPERLY ASSEMBLING THE FILTER AND SEPARATION TANK."

(11) CIRCULATION PIPING. (a) Circulation piping shall be listed as meeting one of the following methods:

1. ANSI/NSF 50 by a listing agency acceptable to the department.

2. Chapter SPS 384.

(b) All circulation piping shall be listed to withhold a pressure 50 percent greater than the maximum design pressure.

(12) PUMPS AND MOTORS. (a) All circulation pumps shall be capable of providing the design flow rates at one of the following minimum total dynamic heads:

1. Eighty feet for diatomaceous earth filters.

2. Seventy feet for sand or cartridge filters.

3. Fifty feet for vacuum filters.

4. A maximum total dynamic head value recommended by the filter manufacturer that allows the filter to function under all operating conditions.

(b) Pumps located below the waterline of a basin shall have isolation valves installed on suction and discharge lines.

(c) Pumps located above the waterline of the pool shall be self−priming or the system shall be designed to provide a means for priming.

(d) Intake strainers shall be provided upstream of all circulations pumps on pressure filter systems.

(e) Mechanical seals shall be corrosion resistant.

(13) RETURN INLETS AND SUCTION OUTLETS. (a) Inlets and outlets shall be provided and arranged to produce a uniform circulation of water and maintain the distribution of sanitizer residual throughout the pool.

(b) *Return inlets*. 1. Return inlets shall be designed and installed so as to not constitute a hazard to the patron.

Note: An example of an inlet installation constituting a hazard to a patron is an inlet installed on a racing lane cross.

2. There shall be at least 2 inlets per circulation system.

3. Except as provided in subd. 4., the velocity of flow through any inlet orifice shall be in the range of 5 to 20 feet per second

Note: See the appendix for inlet velocity information.

4. For pools equipped with skimmers the velocity of flow through any inlet orifice shall be in the range of 10 to 20 feet per second.

5. Except for leisure rivers, the minimum number of return inlets shall be based on at least one additional inlet per 300 square feet of pool surface area or fraction thereof.

6. There shall be at least one wall return inlet for each 10 feet of stairway width, recessed bench length or swimout length or width or fraction thereof.

7. Bottom return inlets shall be flush with the basin floor.

8. Bottom return inlets shall be considered to have an area of influence of a radius of 10 feet.

Note: See the appendix for further explanatory material.

9. Wall return inlets may not extend more than one inch into a basin.

10. Except for leisure rivers, there shall be a wall return inlet within 5 feet of each corner of a basin wall.

(c) *Suction outlets*. 1. Suction system flow through main drains shall be designed to accommodate 100 percent of the circulation flow rate in accordance with all of the following:

a. All basins shall be provided with a suction outlet in the lowest point of the basin in the floor or the wall.

Note: For main drains installed in diving wells, see Table 390.06−1

b. Where 2 or more drains connect within the circulation system, all drains minus any one in the set shall be designed to collectively convey 100 percent of the circulation flow rate.

c. The distance between the bottom of the suction outlet grate and the opening of the suction pipe shall equal or exceed at least 1.5 times the inside diameter of the suction pipe.

2. Suction outlet grates shall comply with at least one of the following requirements:

a. A single grate having at least one dimension of length, width, diagonal or diameter that is at least 36 inches.

b. Two or more grates of any size separated from other suction outlets by at least 3 feet.

3. Suction systems shall be designed so that the maximum flow rates are not exceeded under operating conditions.

4. Suction grates and covers shall be listed as conforming to ASME/ANSI A112.19.8.

5. The maximum opening of any suction grate shall prevent the passage of a ½−inch sphere.

6. a. Barriers shall be provided on all wave pool caisson walls.

b. Openings in caisson barriers shall prevent the passage of a 4−inch sphere.

7. Vacuum fittings are not permitted within public swimming pools or water attractions.

(d) *Surface skimming systems*. 1. Surface skimming systems shall be included in the design of and installed to serve all basins.

2. Surface skimming systems shall be designed and constructed to skim the basin surface when the water level is maintained within the operational parameters of the system's rim or weir device.

3. Skimmers shall be located so as to maintain effective skimming action.

4. Skimmer covers located on a walking surface shall be designed and installed to comply with all of the following requirements:

a. The skimmer cover shall be appropriately seated.

b. The skimmer cover shall be slip resistant.

c. The skimmer cover shall be sufficiently strong so as to withstand normal use.

d. The skimmer cover may not create a tripping hazard.

5. Equalizer lines shall have an anti−entrapment cover or other entrapment protection in accordance with ASME/ANSI A112.19 when suction fittings are located in the wall of a basin.

6. Where automatic skimming devices are used as the sole overflow system, at least one surface skimming device shall be provided for each 500 square feet or fraction thereof of water surface area.

7. Circulation systems shall be designed to carry 100 percent of the rated circulation volume through the skimmers.

8. The flow rate through automatic skimmers shall be no less than 3 gallons per minute per inch of skimmer weir width.

Note: The maximum flow rate through skimmers is determined by the ANSI/NSF 50 rating.

9. Acceptable options for surface skimming systems shall be in accordance with Table 390.14−3.

Table 390.14−3
Acceptable Surface Skimming Systems

Pool Type	Acceptable Surface Skimming Systems
Swimming, whirlpools	Gutters, auto skimmers
Activity	Auto skimmers, zero−depth trench, gutters
Leisure River	Single or multiple weirs, gutters, zero−depth trench or auto skimmers
Plunge	Auto skimmers, zero−depth trench, gutters, weirs
Vortex	Skimmers are not allowed in the side area
Wave	Zero−depth trench, skimmers, gutters, perimeter devices
Zero−Depth Entry	Zero−depth trench, skimmers, gutters, perimeter devices.
Other	As approved by the department

10. When a gutter skimming system is used, the system shall be connected to a circulation system with an adequate surge capacity to permit all phases of operation.

11. a. Except as provided in subd. 11. b., a zero−depth trench shall extend continuously from within 3 feet of one wall of the basin to within 3 feet of the opposite wall of the basin.

b. Where the entire perimeter of the basin consists of a zero−depth entry, 50 percent shall be evenly−distributed zero−depth trench.

History: CR 08−056: cr. Register February 2009 No. 638, eff. 3−1−09; correction in (10) (a) made under s. 13.92 (4) (b) 7., Stats., Register February 2009 No. 638; correction in (1), (11) (a) 2., (13) (d) 9. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 390.16 Mechanical systems. (1) ELECTRICAL. Electrical components shall comply with the requirements of ch. SPS 316.

(2) WATER HEATERS. (a) Water heating equipment shall comply with chs. SPS 364 and 365.

(b) A thermometer accurate to within plus or minus 2ºF of the operating range shall be installed in the circulation piping.

(c) The thermometer required in par. (b) shall be accessible for reading.

(d) The use of a toxic solution, such as, but not limited to, heat transfer fluid in a single−wall heat exchanger, is prohibited.

(e) Water heaters and hot water storage tanks shall be equipped with temperature and pressure relief valves in accordance with ch. SPS 384.

(3) ILLUMINATION. (a) Artificial lighting shall be provided so that all areas of the pool, including the bottom, shall be visible when the pool or water attraction is used during periods of low illumination.

(b) For outdoor facilities, overhead lighting shall provide a minimum of 3 footcandles of illumination at the water surface and on the deck.

(c) For indoor facilities, overhead lighting shall provide a minimum of 10 footcandles at the water surface and on the deck.

(d) 1. Except as permitted in subd. 2., underwater lighting shall provide a minimum of ½−watt incandescent light per square foot of water surface area or equivalent.

2. If overhead lighting provides a minimum of 15 footcandles illumination at the water surface, no underwater lighting is required.

(e) For exterior facilities, areas that are designed to operate during periods of low illumination shall be provided with sufficient emergency lighting to permit evacuation of the facility.

(f) For exterior facilities, emergency lighting shall activate within 10 seconds of lighting failure.

(4) WATER SUPPLY. (a) *Water quality.* The water supply for all public swimming pools and water attractions shall meet the water quality requirements as listed in ch. SPS 382, Table 382.70−1.

Note: Refer to Appendix A−390.20 (12) for pertinent sections of ch. SPS 382, Table 382.70−1.

(b) *Cross connection control*. Protection of the potable water supply shall comply with s. SPS 382.41.

(c) *Makeup water quality.* Makeup water to maintain the water level in all public swimming pools and water attractions and water used as a vehicle for disinfectants or other pool chemicals, for pump priming or for other such additions, shall meet the requirements listed in ch. SPS 382, Table 382.70−1.

Note: Refer to Appendix A−390.20 (12) for pertinent sections of ch. SPS 382, Table 382.70−1.

(d) *Spray feature water.* Water used for spray features or water falling onto patrons shall be disinfected if supplied from a whirlpool or wading pool basin.

(5) WASTEWATER DISPOSAL. Wastewater discharges shall be in accordance with ss. SPS 382.38 Table 382.38−1 and 382.33.

Note: See appendix for a reprint of Table 382.38−1.

(6) EQUIPMENT ROOM. (a) An equipment room or equipment enclosure shall be provided to serve all public swimming pools and water attractions.

1. An equipment room shall be ventilated in accordance with ch. SPS 364.

2. An equipment room shall be drained.

3. An equipment room shall be accessible for operation and maintenance of equipment.

(b) The doors to all rooms in which a chlorine gas feeder is located or a cylinder of compressed chlorine gas is located or stored shall be labeled "DANGER−CHLORINE GAS" in clearly readable letters.

History: CR 08−056: cr. Register February 2009 No. 638, eff. 3−1−09; correction in (1), (2) (a), (e), (4) (a), (b), (c), (5), (6) (a) 1. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 390.17 Sanitizing equipment. (1) EQUIPMENT STANDARDS. (a) Sanitizing equipment shall be certified to comply with the requirements of NSF/ANSI 50.

(b) A chemical system that provides the residual required by ch. DHS 172 shall be installed when an alternative means of disinfection is proposed.

Note: Alternative disinfection systems include ultraviolet light, ozone and electrolytic chlorine generation, but are not limited to those systems.

(c) Sanitizing equipment shall be capable of introducing a sufficient quantity of a U.S. EPA−approved sanitizer for normal operating procedures.

Note: See ch. DHS 172 for disinfectant concentration and efficacy requirements.

(d) Sanitizing equipment shall be certified by a nationally recognized testing laboratory.

(2) SANITIZING EQUIPMENT. (a) Skimmer baskets may not be used as chemical feeders.

(b) An automatic controller for controlling the sanitizing equipment shall be installed on all public swimming pools and water attractions.

(c) The automatic controller shall include a flow sensor installed so that the chemical feed pump will not operate without a return flow to disburse the chemical.

(d) The automatic controller shall be electrically interlocked with the circulation pump control circuit.

Note: Pool operation requirements are found in ch. DHS 172, Wis. Adm. Code.

(e) The automatic controller and circulation pump shall have separate disconnect switches.

History: CR 08−056: cr. Register February 2009 No. 638, eff. 3−1−09; correction in (1) (b) made under s. 13.92 (4) (b) 7., Stats., Register February 2009 No. 638.

SPS 390.18 Safety features. (1) ROPE AND FLOAT LINES. (a) 1. Except as permitted in subd. 2., a rope and float line shall be provided in all basins:

a. To separate activity areas, such as plunge areas, climbing walls, pad walks and other areas where patron activity may harm others.

b. To restrict access to the caisson wall in wave pools.

c. To identify water depth greater than 5.5 feet in combination pools and activity pools.

2. Rope and float lines are not required in areas where the department determines that the installation of the rope and float line would constitute a safety hazard.

(b) For water depth, the rope and float line shall be located one foot toward the shallow end for each location where the purpose of the rope and float line is to mark a depth change.

(c) A 4−inch−wide boundary line of contrasting color shall be installed on the basin walls and floor corresponding to the location of the rope and float line.

(d) For wave generators, the rope and float line shall be located a minimum of 5 feet from the caisson wall.

(e) The rope and float lines shall be securely fastened to wall anchors.

(f) Rope and float lines shall be of sufficient size and strength so as to provide temporary support for a pool patron in the water.

(g) Rope and float lines shall be installed with limited slack so as to provide temporary support for a pool patron in the water.

(2) DEPTH MARKERS. (a) Depth markers shall be installed on all public swimming pools and water attractions that incorporate a water depth over 6 inches.

(b) Depth markers shall be installed at the maximum and minimum water depths and at all points of slope change.

(c) 1. Except as provided in subd. 2., water depth markers shall be installed around the perimeter of the basin at intervals no greater than 25 feet and at lesser intervals when indicating a change in water depth not to exceed 2 feet.

2. Water depth markers for leisure rivers shall be located every 25 feet on alternate side walls and at all entry points.

(d) 1. Depth markers shall be indicated in feet, inches or feet and inches and when abbreviated so indicated as "FT" or "IN."

2. Depth markers shall be plainly and conspicuously installed at all of the following locations:

a. On the vertical basin wall except where no portion of the basin wall is visible and above the waterline.

b. On the top of the coping or edge of the deck next to the basin.

Note: Additional depth markings may also be indicated in metric.

(e) When additional depth markers are indicated in metric, "meters" shall be abbreviated as "M."

(f) All water depths indicated on depth markers shall be the depth at the location of the depth marker.

(g) All depth markers installed on vertical basin walls shall be located so as to be read from the waterside.

(h) Depth markers installed on decks shall be located no greater than 18 inches from the basin edge and positioned so as to be read while standing on the deck facing the water along the affected perimeter.

(i) All depth markers installed on decks shall be of slip resistant materials.

(j) The minimum height of depth marker characters shall be 4 inches. Characters shall be clearly visible and of permanent contrasting color to the background on which applied.

(k) Depth markers for water deeper than 5 feet shall indicate the maximum basin depth.

(3) WARNING MARKERS. (a) Pools or water attractions having water depths of 5 feet or less shall be provided with diving prohibition markers located on the deck at intervals of no more than 25 feet.

(b) Diving prohibition markers shall be printed with the text, "No Diving."

(c) The "No Diving" text shall be at least 4 inches in height.

(d) Diving prohibition markers shall include the international "No Diving" symbol.

(e) "No Diving" text and the "No Diving" symbol shall be clearly visible and of a contrasting color to that of the marker background.

(4) BARRIERS. (a) Except as provided in par. (b), public swimming pools, water attractions and water attraction complexes shall be separated from surrounding property by a barrier consisting of a fence, wall or building.

(b) Independent interactive play attractions are not required to be surrounded by a barrier.

(c) A fence or wall shall be constructed so as to afford no external handholds or footholds.

(d) The barrier shall be at least 5 feet in height.

(e) Gates in the barrier shall be equipped with a self−closing, lockable closure mechanism at a height of at least 54 inches from the bottom of the gate.

(f) Fences serving as barriers shall have no opening greater than 4 inches in width or diameter.

(g) The bottom of a fence or wall shall be a maximum of 4 inches from grade.

(h) Doors in fences and walls shall be self−closing and lockable.

(5) EMERGENCY STOP BUTTONS. Wave action pools, vortex pools, water slides and leisure rivers shall have emergency stop buttons accessible to designated staff as outlined in a staffing plan for the purpose of stopping the propulsion system.

Note: See the electrical code, ch. SPS 316, for location and installation requirements.

History: CR 08−056: cr. Register February 2009 No. 638, eff. 3−1−09.

SPS 390.19 Toilet room and sanitary facilities. **(1)** GENERAL REQUIREMENTS. (a) Toilet and handwash facilities, and public drinking fountains shall be located so to be accessible by a length of paved walking surface no greater than 300 feet from the nearest rim of the most distant public swimming pool or water attraction.

(b) Showers and dressing facilities shall be provided and located on the premises and accessible by a length of paved walking surface.

Note: All applicable building requirements of chs. SPS 361 to 366 shall apply to the construction of bathhouses.

(c) 1. The floors of toilet rooms and dressing areas serving public swimming pools or water attractions shall have a smooth, hard, nonabsorbent, slip−resistant surface.

2. A smooth, hard, nonabsorbent surface shall extend upward on the walls at least 6 inches.

3. Junctions between walls and floors shall be coved.

4. When floor drains are installed, drain openings shall be ¼ inch or less in width or diameter.

(2) DRAINAGE OF COVERED AREAS. (a) Floor drains shall be installed in toilet rooms and locker rooms where sanitary fixtures are located and where the room door is adjacent to the deck or adjacent to the impervious walkway draining to the deck.

(b) Floor drain openings shall be ¼ inch or less in width or diameter.

(c) Floors shall be pitched to drain.

(3) WALLS. Toilet room and locker room walls shall have a smooth, hard, nonabsorbent surface to a height of at least 4 feet above the floor.

(4) LOCKERS. Lockers shall be set either on solid masonry bases at least 4 inches high or on legs extending at least 10 inches above the floor.

(5) REQUIRED NUMBER OF SANITARY FIXTURES. (a) The required minimum number of toilets, lavatories and showers shall be provided in accordance with Table 390.19.

(b) 1. Except as provided in subd. 2., the minimum number of drinking fountains shall be provided adjacent to the required deck in accordance with Table 390.19.

2. For bed and breakfast establishments, tourist rooming houses or private guest rooms, a source of potable drinking water shall be provided in the enclosure by a fixture installed as per ch. SPS 382 or by providing commercially bottled drinking water.

(6) DIAPER CHANGING STATION. (a) Except as permitted in par. (b), all toilet rooms providing the required sanitary fixtures shall be equipped with a diaper changing station.

(b) Diaper changing stations are not required in toilet rooms exclusively serving therapy pools.

(7) SPECTATOR ACCESS. Spectator walkways, restrooms, dressing rooms and seating areas shall be separated from pool patron required deck.

Table 390.19
Minimum Number of Sanitary Fixtures Required at Public Pools and Water Attractions

Facility (example of location and type)[a]	Cumulative Area of Surface Water (in square feet)	Number of							
		Public Toilets		Public Urinals	Public Lavatories		Public Showers		Public Drinking Fountains
		F	M	M	F	M	F	M	
1. Swimming pools, wading pools and whirlpools in conjunction with sleeping or dwelling units having plumbing, except for items 2. to 5. No open swim lessons permitted. (i.e., apartment, hotels, motels, condos and mobile home parks)	< 2000	One unisex		0	One unisex		0	0	1[a]
	2000 – 7500	1	1	0	1	1	1	1	1
	> 7500	See note [b] below for requirements.							
2. Swimming pools, wading pools and whirlpools without living units, except for items 3. to 5. Swimming pools, wading pools and whirlpools with sleeping or dwelling units where open swim or lessons are permitted and water attractions where lessons are conducted. (i.e., municipal pools and campgrounds)	< 2000	1	1	0	1	1	1	1	1
	2000 – 3999	3	1	2	1	1	2	2	1
	4000 – 5999	4	2	2	2	2	4	4	1
	6000 – 7499	4	2	2	2	2	5	5	1
	7500 – 8999	8	2	2	3	2	5	5	2
	9000 – 9999	10	2	3	4	3	6	6	2
	10000 – 12999	12	3	3	4	3	6	6	2
	13000 – 15000	14	3	4	5	4	7	7	3
	>15,000	See note [b] below for requirements.							
3. Water attractions and water attraction complexes with sleeping or dwelling units. No open swim or lessons permitted. Use 300 sq. ft. for slides without basins (i.e,. activity pools, waterslide plunge pools, leisure river or tubing pools and wave pools)	< 7500	1	1	0	1	1	1	1	1
	7500 – 9999	4	1	1	2	2	2	2	2
	10000 – 14999	8	2	2	2	2	2	2	2
	15000 – 22499	12	3	3	3	3	3	3	3
	22500 – 29999	12	3	3	3	3	3	3	3
	30000 – 37500	16	4	4	4	4	4	4	4
	>37500	See note [b] below for requirements.							
4. Water attractions and water attraction complexes without sleeping or dwelling units. No lessons permitted. Use 300 sq. ft. for slides without basins. (i.e., activity pools, waterslide plunge pools, leisure river or tubing pools and wave pools)	< 7500	2	1	1	1	1	1	1	1
	7500 – 9999	6	2	1	2	2	2	2	2
	10000 – 14999	8	2	2	2	2	2	2	2
	15000 – 22499	12	3	3	3	3	3	3	3
	22500 – 29999	16	4	4	4	4	4	4	4
	30000 – 37500	20	5	5	5	5	5	5	5
	>37500	See note [b] below for requirements.							
5. Splash pad (independent of any other pool or attraction)		One unisex		0	One Unisex		One rinse off shower		1
	Patron Load								
6. Therapy/exercise pools.	Up to 10	One Unisex							
	11 – 20	2	1	1	1	1	2	2	1
	21 – 30	2	1	1	2	2	3	3	1
	> 30	Per department approval							

F = female; M = male; < = less than; > = greater than

[a] For pools with spectator areas, see Appendix A−390.16 regarding chs. SPS 361 to 366 that contain the requirements for sanitary facilities.

[b] For water attractions in excess of 37,500 sq ft., use the following additions:

- For each 7,500 sq. ft. or fraction thereof add one sanitary unit – 0.7 male water closets, 1.0 male urinal, 0.85 male lavatories, 1.0 male showers, 0.6 drinking fountains, 4.0 female water closets, 1.0 female lavatory and 1.0 female shower.

For pools in excess of 7,500 sq. ft. and Type 1 above, and for pools in excess of 15,000 sq. ft. and Type 2 above, use the following additions:

- For each 4,000 sq. ft. or fraction thereof, add one sanitary unit – 1.0 male water closet, 1.0 male urinal, 1.0 male lavatory, 4.0 male showers, 1.0 drinking fountain, 4 female water closets, 1.0 female lavatory, 4.0 male showers.

For the requirements listed for additional sanitary facilities each fraction represents an additional fixture.

History: CR 08−056: cr. Register February 2009 No. 638, eff. 3−1−09; correction in (5) (a), (b) 1., 2., Table 390.19 made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

The Wisconsin Administrative Code on this web site is current through the last published Wisconsin Register. See also Are the Codes on this Website Official?

Subchapter III — Wading Pools, Whirlpools, Interactive Play Attractions and Cold Soak Pools — Special Requirements

SPS 390.20 Wading pools. Wading pools shall be in compliance with the applicable requirements of ss. SPS 390.04 to 390.19 and with this section:

(1) The maximum depth of water in a wading pool may not exceed 24 inches.

(2) The maximum depth of water at the accessible perimeter of a wading pool may not exceed 18 inches.

(3) A piping system may be used to allow a wading pool to be filled using pool water from an adjacent basin, other than a whirlpool, when the water quality meets the requirements in ch. DHS 172 prior to use.

Note: See the appendix for filling options.

(4) Obstructions extending from the walls or bottom of the wading pool are not permitted except with the approval of the department based on design safety.

History: CR 08−056: cr. Register February 2009 No. 638, eff. 3−1−09; correction in (3) made under s. 13.92 (4) (b) 7., Stats., Register February 2009 No. 638; correction in (intro.) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 390.21 Whirlpools and cold soak pools. Whirlpools and cold soak pools shall be in compliance with the applicable requirements of ss. SPS 390.04 to 390.19 and with this section:

(1) All walls within 5 feet of the whirlpool or cold soak pool shall be constructed of impervious material to a height of at least 3 feet above the deck.

(2) (a) 1. Except as provided in subd. 2. or 3., an observation window shall be provided if a whirlpool is located in a separate, enclosed room to allow the owner or operator a clear observation of the whirlpool or cold soak pool from outside the room.

2. A private guest room equipped with a telephone.

3. A whirlpool or cold soak pool room where a camera and remote observed monitor is provided.

(b) Where a camera is provided as in par. (a) 3., signage shall be installed to notify patrons of the camera's use.

(3) (a) Except as provided in par. (b), whirlpools or cold soak pools may not be located:

1. Within 11 feet of a basin where the water exceeds 5 feet in depth.

2. Within 11 feet of a basin whose water depth is 6 inches deeper than that of the whirlpool or cold soak pool.

(b) Whirlpools or cold soak pools may be located adjacent to a pool or water attraction basin if a common wall constructed in accordance with s. SPS 390.11 (5) separates the two basins.

(4) The maximum water depth of a whirlpool or cold soak pool shall be 4 feet measured from the water line.

(5) If the water depth exceeds 24 inches in a whirlpool or cold soak pool, stairs shall be provided.

(a) Stairways shall be recessed and may not extend past a bench installed in the basin.

Note: See appendix for more information.

(b) Recessed stairways shall have a minimum unobstructed horizontal tread depth of 10 inches, with a riser height no greater than 12 inches, and shall be uniform except that when the bottom tread is used for a seat, the bottom riser may be a maximum of 14 inches above the whirlpool floor.

(c) The minimum width of the stairways shall be 15 inches.

(d) Handrails shall be securely mounted on each side of stairways.

(e) The leading edge of deck−mounted handrails shall be located within 3 inches horizontally measured from the vertical plan of the bottom riser.

(f) The two handrails shall be separated a maximum of 3 feet.

(6) A whirlpool water agitation system shall be separate from the water circulation system.

(7) A manually controlled, 15−minute maximum, agitation system timer shall be provided within the pool enclosure.

(8) An emergency stop shall be provided that is tied to the agitation system and circulation system.

Note: See the electrical code for installation and locating requirements.

(9) (a) Except as provided in par. (b), the coping around the perimeter of the whirlpool or cold soak pool may extend vertically a maximum height of 3 inches.

(b) 1. Transfer walls may extend 16 to 19 inches above the deck.

2. Transfer wall widths shall be 12 to 16 inches measured at the top of the wall.

(10) A piping system may be used to allow a whirlpool or cold soak pool to be filled using pool water from an adjacent basin, other than a whirlpool when the water quality meets the requirements in s. DHS 172.14 (4) prior to use.

History: CR 08−056: cr. Register February 2009 No. 638, eff. 3−1−09; correction in (10) made under s. 13.92 (4) (b) 7., Stats., Register February 2009 No. 638; correction in (intro.), (3) (b) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 390.22 Interactive play attractions. Interactive play attractions shall be in compliance with the applicable requirements of ss. SPS 390.04 to 390.19 and with this section.

(1) DESIGN AND MATERIALS. (a) All materials for walking surfaces on an interactive play attraction shall be slip−resistant.

(b) 1. A splash zone of an interactive play attraction shall be sloped to drain to the surge tank or pool within the same basin.

2. All exterior walking surfaces shall be sloped to drain away from the splash zone.

(2) WATER SUPPLY, PIPING, CIRCULATION AND FILTRATION. (a) The circulation system of an interactive play attraction may not be connected with the feature pump system unless otherwise approved by the department.

(b) All nozzles that spray from the ground shall be flush with the floor so as to not create a tripping hazard.

(c) The total water volume of a balance tank, including associated piping, shall be at a minimum of 4 times the combined flow rate of all the attraction pumps and of a sufficient volume so as to allow operation through all cycles of filtration operation.

(d) All aboveground piping shall automatically drain. Gravity drains shall be of a capacity of at least 125 percent of the discharge.

(e) The suction intake of the circulation pump shall be located in the lowest point of the balance tank.

(3) VEGETATION. Plants or vegetation may not be located in the splash zone area.

History: CR 08−056: cr. Register February 2009 No. 638, eff. 3−1−09; correction in (intro.) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

Subchapter IV — Play Features and Slides

SPS 390.30 Play features. (1) GENERAL. Structures and devices not intended for patron activities such as climbing, walking and hanging shall be either designed or supervised to prevent such action.

(2) IN−WATER PLAY FEATURES. (a) In−water play features installed shall be subject to this subsection.

Note: Examples of in−water play features include, but are not limited to, floating boats and trucks, floatable walks, floatables, spray pad features not in conjunction with a pool or water attraction with a circulation system and other permanently installed features.

(b) 1. Floating play features may not be installed in pools with water depths of less than 36 inches.

2. a. Except as provided in subd. 2. b., a minimum 3 feet of water depth shall be maintained at least 6 feet in every direction from any tethered play feature.

b. A tethered play feature may be located within 6 feet of a wall when that portion of the wall is padded to a point 6 feet from the play feature.

Note: Padding need only cover the wall above the waterline.

(c) The means of anchoring of tethered play features shall be configured in such a manner as to minimize circumstances of possible entrapment of patrons, bodies, hair, limbs or appendages when in contact with any element of the play feature or its anchors.

Note: The use of jacketed chains or cables meets this requirement.

(d) All in−water play features shall be designed and installed to prevent injury to the user and constructed so as not to create a safety hazard.

(e) 1. Except as permitted in subd. 2., the length and width of a tethered, in−water play feature shall not exceed 42 inches.

2. A tethered, in−water play feature may exceed 42 inches in length when the width, excluding appendages, does not exceed 24 inches.

3. The height of a tethered, in−water play feature shall not exceed 20 inches.

(f) 1. When more than one pad walk is located in the same pool basin, a minimum separation of 10 feet between pad walks shall be provided.

2. All deck or basin obstructions within 6 feet of a pad walk shall be padded or encased so as to protect users from abrasion, laceration or contusion.

(g) Two floatables, other than two pads within a pad walk, shall be separated by a minimum of 10 feet.

(3) ON−DECK PLAY FEATURES. (a) Play features permanently installed on decks shall be designed and installed to minimize injury to the user and constructed so as not to create a safety hazard.

Note: Examples of on−deck play features include basketball hoops, volleyball nets and other water games.

(b) Spray features may not be located so as to spray on the required deck area of a basin.

History: CR 08−056: cr. Register February 2009 No. 638, eff. 3−1−09.

SPS 390.31 Slides. (1) GENERAL. All slides installed as an appurtenance to a public swimming pool or water attraction shall be designed, manufactured and permanently installed so as to provide a safe and healthy environment for the rider and other occupants of the facility.

Note: For accessibility information, refer to the final accessibility guidelines for recreational facilities, Federal Register, Vol. 67, No. 170, as published Tuesday, September 3, 2002.

(2) DESIGN AND MANUFACTURING. (a) The total water volume of a separate balancing tank serving runout slides shall be a minimum of 2 times the combined flow rate of the pumps or of a sufficient volume based on velocity and time of the propulsion system and backwash requirements.

(b) Pool slides, drop slides and waterslides shall be so designed that parts with external surfaces that may come in contact with a person using the slide are assembled, arranged and finished so that they are smooth and continuous with and will not cut, pinch, puncture or cause an abrasion to any person.

(c) All slide flumes shall be designed and constructed so as each person using the waterslide remains inside the flume path during normal use.

(d) All curves, turns and tunnels on the path of a flume shall be designed and constructed so as not to present a hazard to any person using the slide under normal use.

(e) Pool slides, drop slides and waterslides shall be designed to support the intended use.

(f) On−site constructed towers, stairs, platforms and elevated decks providing access to slides shall conform to chs. SPS 361 and 362.

(g) 1. Slides installed in facilities without a lifeguard staffing plan shall occupy no more than 10 percent of the pool perimeter.

2. Slide structures shall have a maximum individual obstruction width of 20 feet.

(h) For waterslides and runout slides, all closed curved flumes shall be a minimum of 32 inches in diameter.

(i) For all other slides listed in Table 390.31−1, the slide terminus shall be designed to not allow riders to cross into the path of another rider.

(3) INSTALLATION. (a) All slide installations shall comply with the parameters as specified in Table 390.31−1.

Note: See the appendix for further explanation.

(b) Except where a lifeguard staffing plan has been approved by the department of health services, children's slide obstructions shall comply with all of the following requirements:

1. The side view of the obstruction, as viewed from any point, shall be less than 50 square feet.

2. The square footage of the obstruction shall be measured to a height of 6 feet above the water line.

3. Individual obstructions shall have at least a 10−foot horizontal separation.

4. No more than 20 percent of the pool basin shall be occupied by obstructions.

Table 390.31−1
Installation Parameters by Slide Type[a]

Slide Type	Maximum Slide Height Measured Vertically From the Slide Entrance (in feet)	Slide Terminus Drop to Water Level (in inches)	Water Depth Allowed for Slide Installation (in feet)	Minimum Clear Space In Front of Slide Terminus and Pool Wall (in feet)	Minimum Distance from Slide Flume or Entry to Side Obstructions, unless protected (in feet)	Minimum Separation Distance Between Slides in Same Structure Measured from Side of Sliding Surface, unless protected (in feet)	Maximum Overhang Distance for Deck−mounted Slides (Slide terminus extension into pool) (in feet)
Children's slide	≤ 4 to slide terminus	≤ 6	≤ 2	≥ 7.5	≥ 4	As per manufacturer's recommendation	N/A
Pool slide	≤ 4 to deck	≤ 6	≤ 2	≥ 7.5	≥ 4	As per manufacturer's recommendation	N/A
Pool slide, discharging into water ≤2 feet deep	> 4 and ≤ 6 to deck	≤ 6	≤ 2	≥ 10	≥ 5	As per manufacturer's recommendation	2
Pool slide, discharging into water ≤2 feet deep	> 6 to deck	Not permitted.					
Pool slide, installed in water ≥ 3 feet deep	≤ 6	≤ 6	≥ 3	≥ 15	≥ 5	≥ 5	≤ 2
Pool slide, installed in water ≥ 3 feet deep	> 6	≤ 6	≥ 3	≥ 20	≥ 5	≥ 5	No maximum
Drop slide, short drop	No limitation	20 to < 30 [b]	3.5 to 6 [b]	≥ 15	≥ 5	≥ 5	No maximum
Drop slide, long drop	No limitation	30 to 60	6 to 12 [b]	≥ 15	≥ 5	≥ 5	No maximum
Waterslide[c]	No limitation	≤ 6 or as per manufacturer's recommendation	≥ 3	≥ 20	≥ 5[e]	≥ 5	No maximum
Runout slide	No limitation	N/A	N/A	For deceleration area, as per manufacturer's recommendation	≥ 5[e]	≥ 3	—

N/A = not applicable; ≥ = greater than or equal to; ≤ = less than or equal to.

[a] Slide installation as per manufacturer's requirements if more stringent. For slide types not specifically listed in this table, contact the department.

[b] Interpolation would be used for increasing drop and increasing depth proportionally.

[c] Water slides with a drop shall comply with drop slide requirements in this table.

[d] No minimum separation distance where slide exit prevents exiting over adjacent slide path

[e] Minimum distance may be reduced if slide terminus is designed and installed to restrict patron exit angle.

(4) SLIDE FLUME WATER. (a) Except for waterslides, water for flume lubrication shall be a maximum of 10 percent of the circulation flow.

(b) The balance tank for runout slide flume lubrication systems shall be at a minimum of 2 times the combined flow rate of the water attraction pump and of a sufficient volume to allow operation through all cycles of filtration operation.

History: CR 08−056: cr. Register February 2009 No. 638, eff. 3−1−09; correction in (2) (f), (i), (3) (a) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

Subchapter V — Incorporation of Standards

SPS 390.40 Incorporation of standards by reference. (1) CONSENT. Pursuant to s. 227.21 (2), Stats., the attorney general has consented to the incorporation by reference of the standards listed in sub. (3).

Note: Copies of the adopted standards are on file in the offices of the department and the Legislative Reference Bureau. Copies of the standards may be purchased through the respective organizations listed in Tables 390.40−1 to 390.40−2.

(2) ALTERNATE STANDARDS. (a) 1. Alternate standards that are equivalent to or more stringent than the standards referenced in this code may be used in lieu of the referenced standards when approved by the department or if written approval is issued by the department in accordance with par. (b).

2. Upon receipt of a fee as specified in ch. SPS 302 and a written request, the department may issue an approval for the use of the alternate standard.

3. The department shall review and make a determination on an application for approval within 40 business days of receipt of all forms, fees and documents required to complete the review.

(b) Determination of approval shall be based on an analysis of the alternate standard and the standard referenced in this code, prepared by a qualified party.

(c) The department may include specific conditions in issuing an approval, including an expiration date for the approval. Violations of the conditions under which an approval is issued shall constitute a violation of this code.

(d) If the department determines that the alternate standard is not equivalent to or more stringent than the referenced standard, the request for approval shall be denied in writing.

(e) The department may revoke an approval for any false statements or misrepresentations of facts on which the approval was based.

(f) The department may reexamine an approved alternate standard and issue a revised approval at any time.

(3) ADOPTION OF STANDARDS. The standards referenced in Tables 390.40−1 to 390.40−2 are hereby incorporated by reference into this chapter.

Note: The tables in this section provide a comprehensive listing of all of the standards adopted by reference in this code. For requirements or limitations in how these standards are to be applied, refer to the code section that requires compliance with the standard.

Table 390.40−1

ANSI	**American National Standards Institute, Inc.** **11 W 42nd Street** **New York, New York 10036** **Phone: (212) 642−4980** **Web: www.ansi.org/public/std_info.html**
Standard Reference Number	**Title**
ANSI/NSF 50−2001	Circulation System Components and Related Materials for Swimming Pools, Spas/Hot Tubs

Table 390.40−2

ASME	**American Society of Mechanical Engineers** **3 Park Avenue** **New York, New York 10016−5990** **Phone: (800) 843−2763** **Web: www.asme.org/catalog/**
Standard Reference Number	**Title**
ANSI/ASME A112.19.8−2007	Suction Fittings for Use in Swimming and Wading Pools, Spas and Hot Tubs

History: CR 08−056: cr. Register February 2009 No. 638, eff. 3−1−09; correction in (2) (a) 2., (3) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

Chapter SPS 390

APPENDIX

The material contained in this appendix is for clarification purposes only. The notes, illustrations, etc., are numbered to correspond to the number of the rule as it appears in the text of the code.

A–390.03 (26) Plan submittal and fees. The following is a listing of when the department may waive submittal of pool plans and fees for the reconstruction and alteration of existing pools.

1. A disinfection system equipped with a positive displacement pump is replaced by an approved pass−through (erosion) type system[a] or vise versa, the replacement of a gas chlorine system with a positive displacement pump or approved pass−through feeder[a].

Note: The installation of a gas chlorine system will require plan submittal and a fee.

2. A circulation pump is replaced by another pump from a different manufacturer provided that the new pump is the same make and model or equivalent[a].

3. A filter is replaced with an approved filter of the same make and model or equivalent[a].

4. The replacement of metal piping and fittings with the same size PVC piping and fittings used to repair a small section of the circulation system (less than 10 feet).

5. A supplemental disinfecting system[a] is installed (e.g., Ozone, Ultraviolet Light, etc.) provided that the halogen residual is maintained as stated in ch. DHS 172 and that there is no decrease in the required water circulation flow rate.

6. For the installation of a slide 6−foot or less in height, a slide structural plan review in accordance with ch. SPS 361 is not required. Such slides shall meet the guidelines listed in Table 390.30–1.

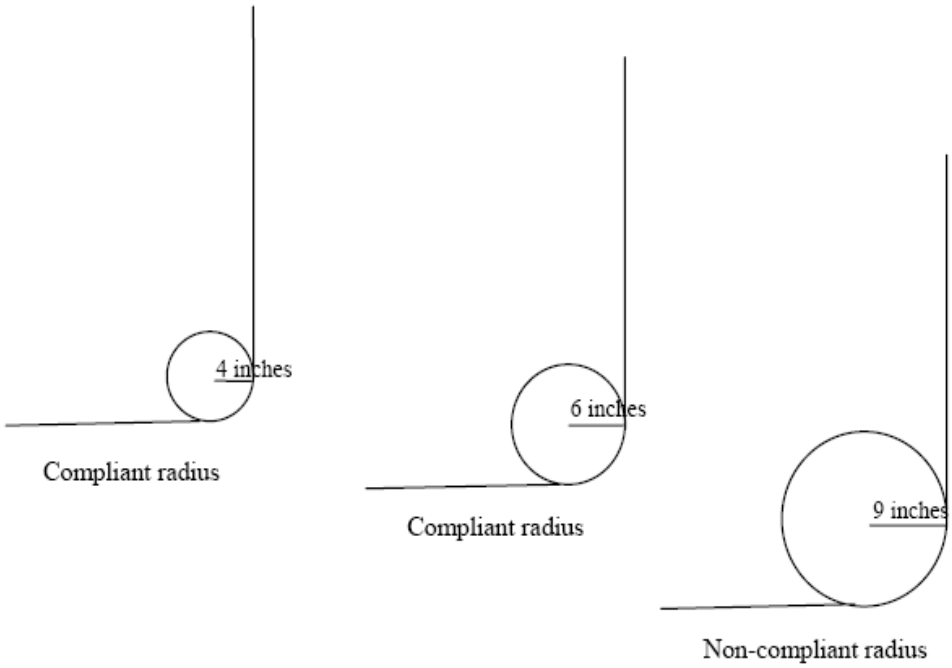
7. Minor repair of basin or deck.

[a] All equipment under the scope of NSF 50 must be listed to comply with NSF 50.

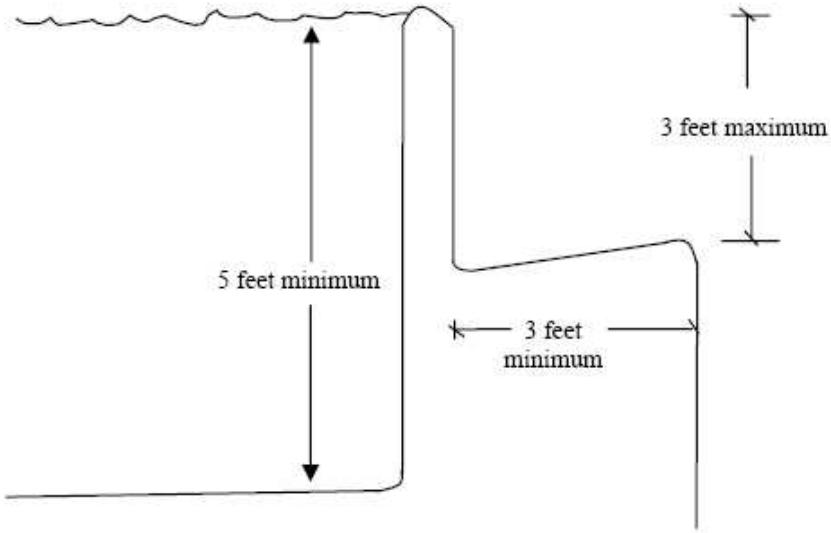
A–390.05 (3) Authorized inspection agents. In addition to department staff, the department has authorized representatives to conduct inspections of construction or modification of any public swimming pool or water attraction that require approval under s. SPS 390.04. The cities of Madison, Milwaukee and Racine do inspections for those installations located within their jurisdiction.

Note: The department maintains a list on the Safety and Buildings Division Web page at http://dsps.wi.gov/SB that is subject to change.

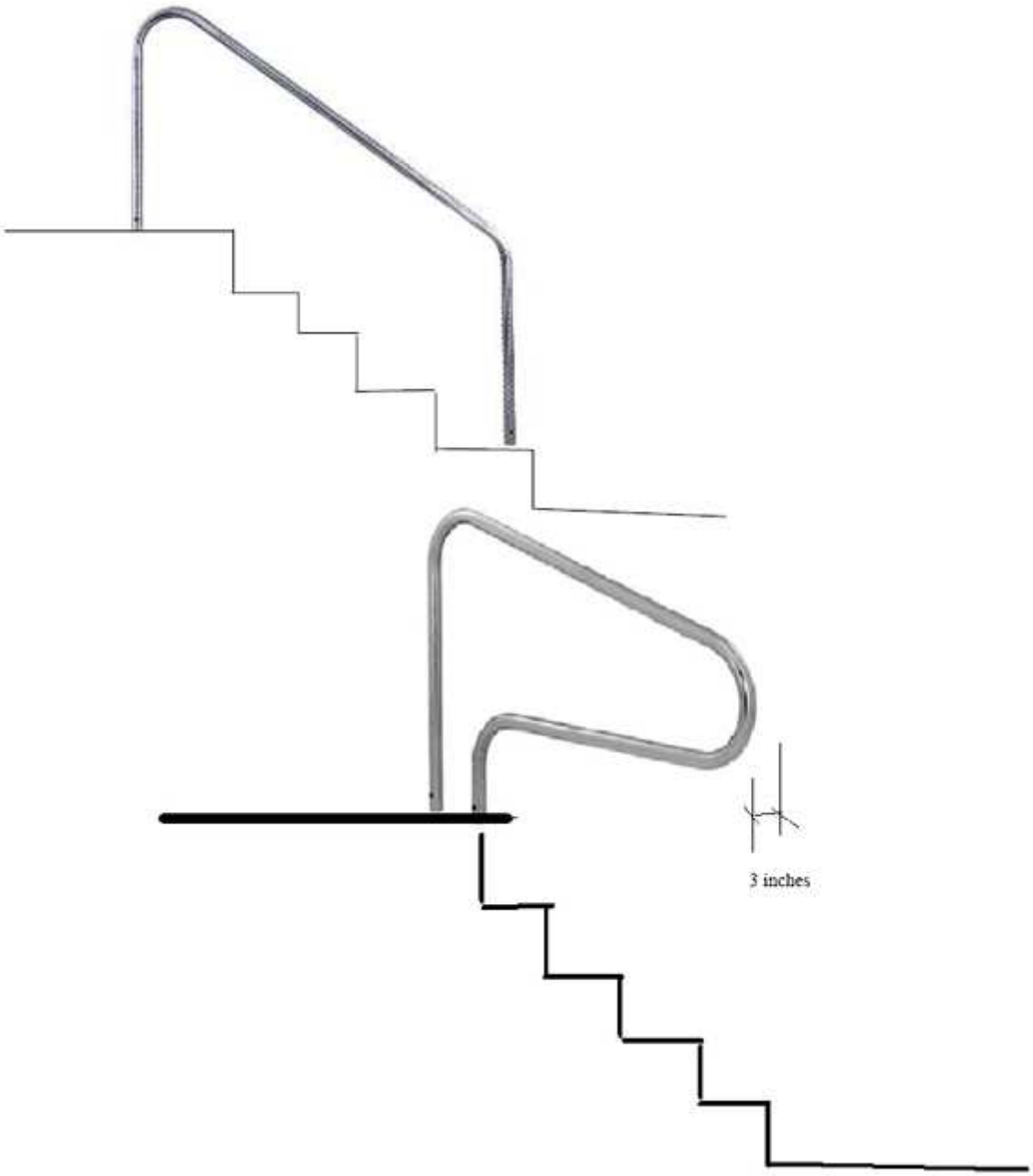
A–390.11 (8) Measuring the transitional radius between the wall and floor of a basin in less than 5 feet of water.



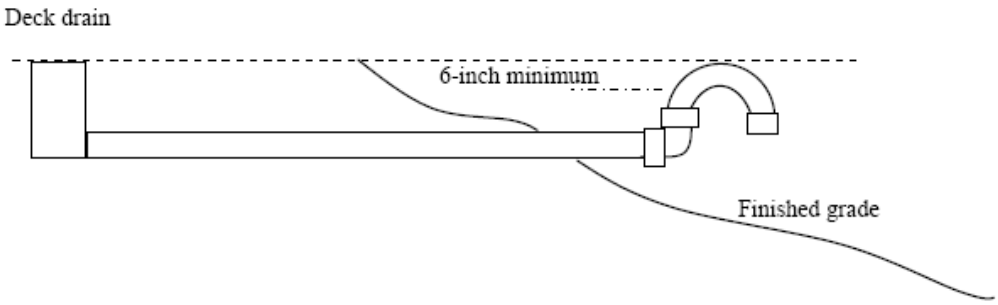
A–390.11 (10) Design of the vanishing edge basin.

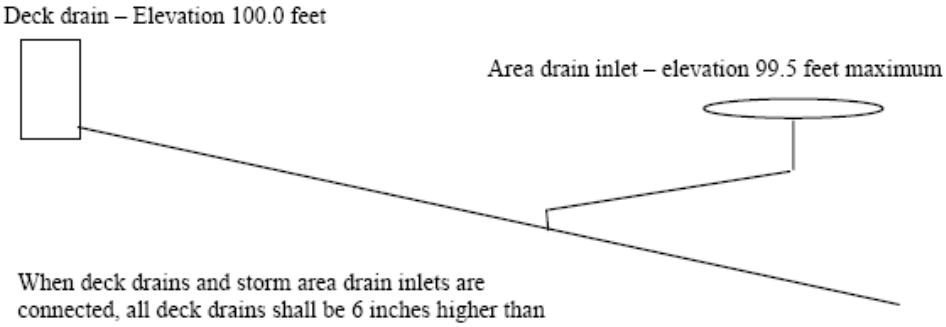


A–390.12 (3) Deck−mounted hand-rail installations.



A–390.13 (5) Outdoor pool deck drain storm sewer connection.





When deck drains and storm area drain inlets are connected, all deck drains shall be 6 inches higher than storm area drain inlets. It must be demonstrated that regardless of the location of any clogged drain, wastewater would discharge from the area drain inlet before ponding on the deck of the pool.

A–390.14 (1) Turnover rate calculation for water slides.

Imaginary Plunge Pool (IPP) = 6,700 gallons that requires one turnover recirculation.

(15 ft X 20 ft X 3 ft = 900 cu ft = 6,700 gallons)

The concept of the imaginary plunge pool is applied to a single waterslide or runout slide that is associated with a pool and uses water from the associated pool for its operation. When more than one waterslide or runout slide is associated with a pool, each additional runout slide or waterslide contributes 4,500 gallons to the imaginary plunge pool quantity of water.

(10 ft X 20 ft X 3 ft = 600 cu ft = 4,500 gallons)

Calculation examples using the IPP concept:

1. Addition of one waterslide or runout slide to a 70,000 gallon pool

70,000 gal pool =	7,600 gal 1hr IPP + 63,300 gal 6hr pool
6,700 gal ÷ 60 min =	112 gpm recirculation
63,300 gal ÷ 360 min =	176 gpm recirculation
	288 gpm total recirculation requirement
70,000 gal ÷ 288 gpm =	4 hr turnover for addition of one waterslide or runout slide

2. Addition of one waterslide or runout slide to a 170,000 gallon pool

170,000 gal pool =	7,600 gal 1hr IPP + 163,300 gal 6hr pool
6,700 gal ÷ 60 min =	112 gpm recirculation
163,300 gal ÷ 360 min =	454 gpm recirculation
	566 gpm total recirculation requirement
170,000 gal ÷ 566 gpm =	5 hr turnover for addition of one waterslide or runout slide

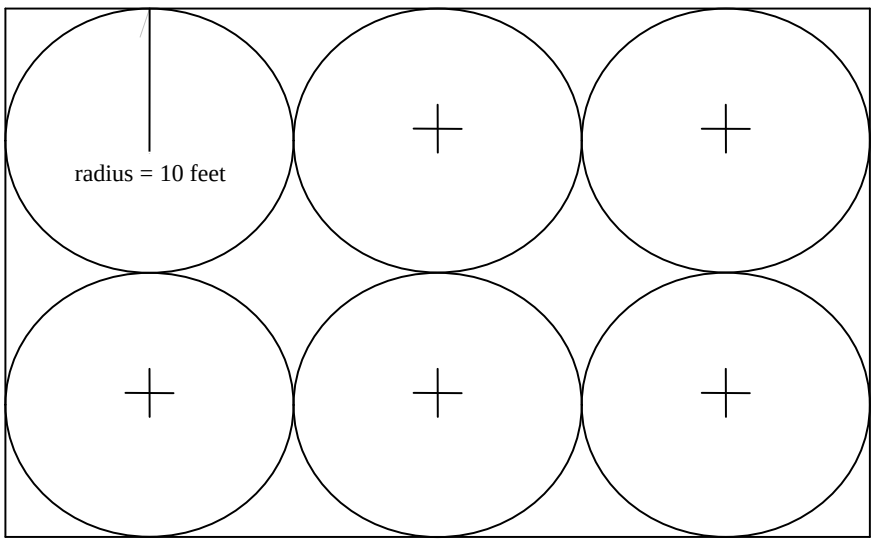
3. Addition of two waterslides or runout slides to a 170,000 gallon pool

170,000 gal pool =	11,200 gal 1hr IPP + 158,800 gal 6hr pool
11,200 gal ÷ 60 min =	187 gpm recirculation
158,800 gal ÷ 360 min =	441 gpm recirculation
	628 gpm total recirculation requirement
170,000 gal ÷ 628 gpm =	4.5 hr turnover for addition of one waterslide or runout slide

A–390.14 (13) Flows carried by inlets.

Inlet Sizes (In inches)	**Flow Through Inlets** (In gallons per minute)		
	5fps	**10fps**	**20fps**
3/8	1.72	3.44	6.89
1/2	3.06	6.12	12.24
5/8	4.78	9.56	19.13
3/4	6.88	13.77	27.55
7/8	9.37	18.74	37.49
1	12.24	24.48	48.97
1–¼	19.12	38.25	76.53
1–½	27.54	55.08	110.19
2	48.96	97.91	195.91

A–390.14 (13) Influence of radius illustrated.



A–390.16 (4) Water quality requirements.

Table 382.70–1
(Partial)
Plumbing Treatment Standards

Intended Use	**Plumbing Treatment Standards** [f]
4. Swimming pool makeup water	NR 811 and 812 approved sources
5. Swimming pool fill water	DHS 172 requirements

f For stormwater, the plumbing treatment standards are based on an annual average. Evaluation of research to prove compliance with this table is based on the geometric mean of the data acceptable to the department or an equivalent method.

A–390.16 (5) Wastewater discharge points and requirements.

SPS 382.33 (9) (k)
(k) Swimming pools. 1. The backwash and drain wastewater from a swimming pool, wading pool or whirlpool shall discharge in accordance with Table 382.38–1.

2. The discharge from deck drains serving indoor pools shall be directed to the sanitary sewer via an air−gap.

3. The discharge from deck drains serving outdoor pools shall be directed to the storm sewer by way of an air−gap or to grade.

4. The requirements for sewer connections as specified in ch. SPS 390 applies to all public swimming pools.

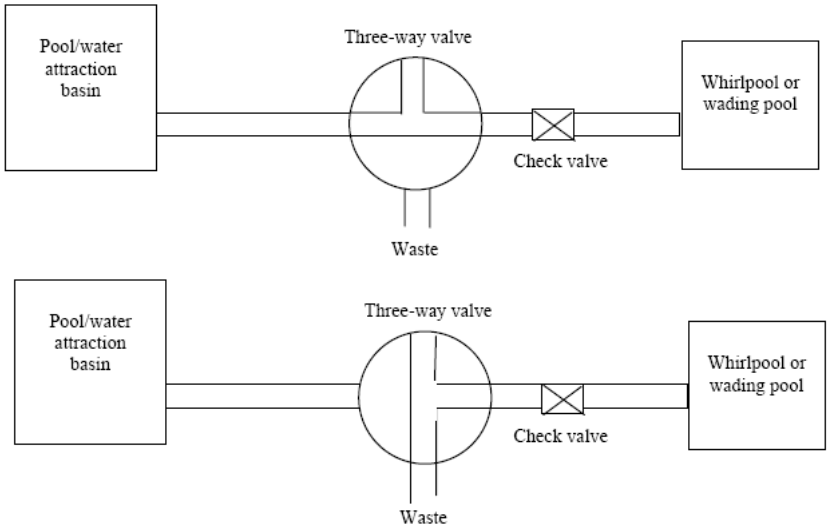
Note: An alternate system approval exists to allow backwash discharge via air break.

Table 382.38–1
(Partial)
Allowable Discharge Points by Fixture or Specific Use

Use or Fixture	Allowable Discharge Points					
	POWTS[a]	Municipal Sanitary Sewer	Municipal Storm Sewer	Ground Surface	Combined Sanitary−Storm Sewer	Subsurface Dispersal [i]
11. Stormwater, groundwater, fire sprinkler test discharge and clear water	X	X[g]	X[c]	X[b]	X	X
13. Swimming pool or wading pool – diatomaceous earth filter backwash	X	X			X	
14. Swimming pool or wading pool – drain wastewater	X	X[b]	X[b,c]	X[b,c]	X[b]	X
15. Swimming pool or wading pool – sand filter backwash	X	X[b]	X[b,c]	X[b,c]	X[b]	X
18. Whirlpool backwash drain and wastewater	X	X	X[c]	X[b,c]	X	

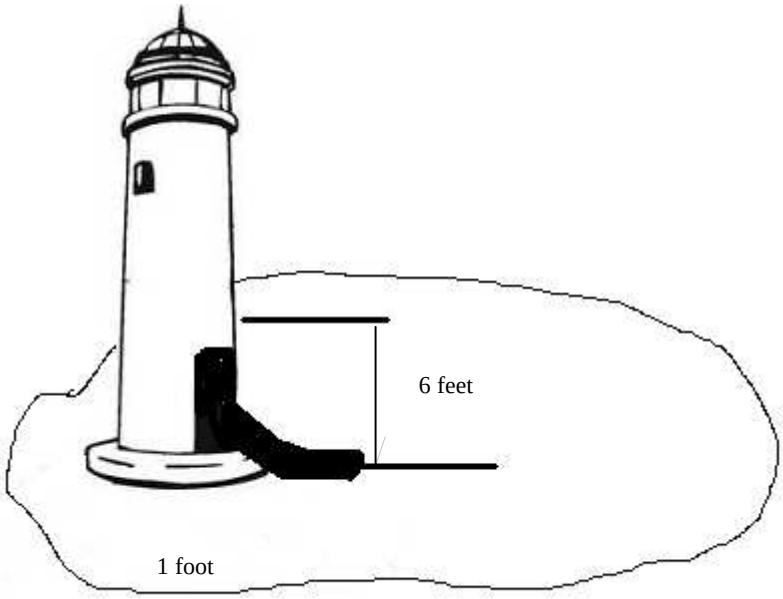
a Allowed when the POWTS is designed to include designated wastewater.
b Unless prohibited by local municipality and when no nuisance is created.
c A discharge permit may be required by the department of natural resources.
g Fifty gallons per day.
i Subsurface dispersal must comply with s. SPS 382.365.

A–390.20 Filling options for wading pools and whirlpools from other basins using a 3−way valve.



A–390.31 (3) Children's slide obstructions in wading pools.

The square footage of the obstruction between the water level to a height of 6 feet for the obstruction shown is 48 square feet. This obstruction is code compliant without a lifeguard staffing plan.



In the drawing above, the obstructed area between the water level to height of 6 feet is 3 square feet. This obstruction would be permitted in a wading pool without a lifeguard plan.

Chapter SPS 391

SANITATION

SPS 391.01	Purpose.
SPS 391.02	Scope.
SPS 391.03	Definitions.
SPS 391.04	Registrations.
SPS 391.10	Composting toilet systems.
SPS 391.11	Incinerating toilets.
SPS 391.12	Privies.
SPS 391.13	Portable restrooms.
SPS 391.14	Equal speed of access to toilets.
SPS 391.20	Incorporation of standards by reference.

Note: Chapter Comm 91 was renumbered chapter SPS 391 under s. 13.92 (4) (b) 1., Stats., Register December 2011 No. 672.

SPS 391.01 Purpose. This chapter has the following purposes:

(1) This chapter establishes minimum standards and criteria for the design, installation and maintenance of sanitation systems and devices which are alternatives to water−carried waste plumbing fixtures and drain systems so that these sanitation systems and devices are safe and will safeguard public health and the waters of the state.

(2) This chapter establishes criteria for equal speed of access to toilets for each gender in restrooms serving an amusement facility and a specialty event center where the public congregates.

Note: Chapter SPS 361 to 366 relating to commercial buildings and structures specifies the minimum number of toilet facilities for women and men.

Note: Chapter SPS 390 relating to swimming pools and water attractions contains minimum number of toilet facilities for women and men.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 04−072: am. Register July 2005 No. 594, eff. 1−1−06.

SPS 391.02 Scope. (1) This chapter has the following applications:

(a) This chapter applies to all composting toilet systems, incinerating toilets, pit privies and vault privies installed or constructed on or after the effective date of this chapter.

(b) This chapter applies to separate−gender restrooms serving an amusement facility and a specialty event center where the public congregates that are constructed or altered as specified in s. SPS 391.14.

(2) The provisions of this chapter are not retroactively applied to existing installations unless specifically stated in the administrative rule.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 04−072: am. (1) Register July 2005 No. 594, eff. 1−1−06; **correction in (1) (b) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 391.03 Definitions. In this chapter:

(1) "Amusement facility" has the meaning given in s. 101.128 (1) (a), Stats.

Note: Section 101.128 (1) (a), Stats., reads as follows:

"Amusement facility" means any zoo, state or local park, amusement or theme park, state fair park, county or other local fairgrounds, or any similar facility, as determined by department rule.

(2) "Composting toilet system" means a method that collects, stores and converts by bacterial digestion nonliquid−carried human wastes or organic kitchen wastes, or both, into humus.

(3) "Department" means the department of safety and professional services.

(4) "Facility where the public congregates" has the meaning given in s. 101.128 (1) (b), Stats.

Note: The relevant portions of section 101.128 (1) (b), Stats., read as follows:

"Facility where the public congregates" means any of the following that has a general capacity or a seating capacity of 500 or more persons:

1. An amusement facility
3. A specialty event center.

(5) "Incinerating toilet" means a self−contained device for the treatment of nonliquid carried wastes that deposits the wastes directly into a combustion chamber, reduces the solid portion to ash and evaporates the liquid portion.

(6) "Pit privy" means an enclosed nonportable toilet into which nonwater−carried human wastes are deposited to a subsurface storage chamber that is not watertight.

(7) "Portable restroom" means a self−contained portable unit that includes fixtures, incorporating holding tank facilities, designed to receive human excrement.

(8) "Specialty event center" has the meaning given in s. 101.128 (1) (g), Stats.

Note: Section 101.128 (1) (g), Stats., reads as follows:

"Specialty event center" means an open arena used for rallies, concerts, exhibits or other assemblies, with no permanent structure for such assembly.

(9) "Vault privy" means an enclosed nonportable toilet into which nonwater−carried human wastes are deposited to a subsurface storage chamber that is watertight.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 04−072: renum. (1) to (6) to be (2), (3), (5) to (7) and (9), cr. (1), (4) and (8), Register July 2005 No. 594, eff. 1−1−06; **correction in (3) made under s. 13.92 (4) (b) 6., Stats., Register December 2011 No. 672.**

SPS 391.04 Registrations. The installation of a vault privy or a pit privy to serve a state−owned facility shall be registered with the department prior to installation. The registration of a vault privy shall be accompanied by sufficient information to determine compliance with s. SPS 384.25. The registration of a pit privy shall be accompanied by sufficient soil information to determine compliance with s. SPS 383.44 (4) (b).

History: CR 02−129: cr. Register January 2004 No. 577, eff. 2−1−04; **correction made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 391.10 Composting toilet systems. (1) The materials, design, construction and performance of a composting toilet system shall conform to NSF Standard 41.

(2) All composting toilet systems shall be listed by a testing agency acceptable to the department.

Note: Listing agencies acceptable to the department include the American Gas Association; Canadian Standards Association; NSF International; Underwriter's Laboratories; and Warnock Hersey.

(3) (a) Components for the storage or treatment of wastes shall be continuously ventilated.

(b) Ventilation ducts or vents for the composting toilet system shall conform to s. SPS 382.31 (16).

Note: See appendix for a reprint of portions of s. SPS 382.31 (16).

(4) (a) The disposal of the compost shall be in accordance with EPA part 503.

(b) The disposal of any liquid from a composting toilet system shall be either to a public sanitary sewer system or a POWTS conforming to ch. SPS 383.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; **correction in (3) (b), (4) (b) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 391.11 Incinerating toilets. (1) The design, construction and installation of a gas−fired incinerating toilet shall conform to ANSI Z21.61.

(2) The materials, design, construction and performance of an electric−fired incinerating toilet shall conform to NSF Standard 41.

(3) All electric and gas−fired incinerating toilets shall be listed by a testing agency acceptable to the department.

Note: Listing agencies acceptable to the department include the American Gas Association, Canadian Standards Association, NSF International, Underwriter's Laboratories, and Warnock Hersey.

(4) (a) The disposal of the end product shall be of in accordance with 40 CFR Part 503, Standards for the Use or Disposal of Sewage Sludge.

Note: EPA materials relating to EPA 503, including, "Domestic Septage Regulatory Guidance: A Guide to the EPA 503 Rule", are available from the Office of Water Resource, US EPA, 401 M Street SW, Washington D.C. 20460.

(b) The disposal of any liquid from an incinerating toilet shall be either to a public sanitary sewer system or a POWTS conforming to ch. SPS 383.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; **correction in (4) (b) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 391.12 Privies. (1) (a) The storage chamber of a vault privy shall conform with the requirements of s. SPS 384.25 relating to holding tanks, and shall have a minimum storage capacity of 200 gallons or one cubic yard.

(b) 1. The storage chamber of a pit privy shall be sited and located in soil recognized to provide treatment and dispersal in accordance with s. SPS 383.44 (4) (b).

Note: Chapter SPS 385 establishes procedures for conducting soil evaluations and preparing soil evaluation reports. Section SPS 305.33 delineates the qualifications and certification procedures for individuals who conduct soil evaluations.

2. Governmental units may set standards for the structure above the vault or pit for one− and two−family dwellings.

3. Privies for public use shall meet the requirements of this section and chs. SPS 361 to 366.

Note: Chapters NR 811 and 812 establish minimum separation distances between a pit or vault privy and a potable well. Chapters NR 811 and 812 are administered by the department of natural resources.

(c) The storage chamber of a vault privy shall be anchored to prevent flotation caused by saturated soil conditions.

(2) (a) The storage chamber of a pit or vault privy shall be provided with a vent for the purpose of relieving explosive gases.

(b) The vent serving the storage chamber of a privy shall be:

1. At least 3 inches in diameter;

2. Installed in accordance with s. SPS 382.31 (16) (a) to (f); and

3. Fabricated or provided with screening to prevent insects from entering the storage chamber.

(3) The servicing of a vault privy relative to the pumping, transporting and disposal of the contents shall be in accordance with ch. NR 113.

(4) The abandonment of a vault privy shall be accomplished by:

(a) Having the contents of the storage chamber pumped and disposed of in accordance with ch. NR 113;

(b) Removing the entire top of the chamber; and

(c) Filling the remaining portion of the emptied storage chamber with soil or other inert material to an elevation equal to or above the surrounding grade.

(5) The abandonment of a pit privy shall be accomplished by filling the storage chamber with soil or other inert material to an elevation equal to the surrounding grade.

Note: The requirements of the commercial building code, chs. SPS 361 to 366, apply to the structures built over those privies serving public buildings and places of employment.

(6) (a) A privy may not be installed in a floodway.

(b) A privy may be installed in the floodfringe provided that the area is filled to remove it from the floodfringe designation or the vault is flood−proofed.

Note: The department of natural resources determines if filling or flood−proofing is in accordance with current rules in effect for development in a floodfringe area.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; CR 01−139: am. (1) (b) 3. Register June 2002 No. 558, eff. 7−1−02; **correction in (1) (a), (b) 1., 3., (2) (b) 2. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.**

SPS 391.13 Portable restrooms. (1) The storage chamber of a portable restroom into which human waste is to be deposited shall be watertight.

(2) The entire floor and the side walls to a height of not less than 4 inches of a portable restroom shall be of a material impervious to water.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00.

SPS 391.14 Equal speed of access to toilets. (1) APPLICATION. This section applies to the toilet fixtures in separate−gender restrooms serving an amusement facility and a specialty events center where the public congregates that are constructed or renovated on or after January 1, 2006 only if one of the following occurs:

(a) New separate−gender restrooms are constructed or separate−gender toilets are provided, in which case this section applies only to the new restrooms.

(b) More than 50% of the square footage of an existing separate−gender restroom is renovated, in which case this section applies only to the renovated portion.

Note: Under section 101.128 (1) (d), Stats., " 'renovation' means any structural remodeling, improvement or alteration of an existing facility where the public congregates. 'Renovation' does not include any of the following:

1. Reroofing.

2. Cosmetic remodeling, including painting or the installation of wall covering, of paneling, of floor covering or of suspended ceilings.

3. An alteration to an electrical or mechanical system."

(2) NUMBER OF TOILET FACILITIES. When separate public restrooms or other toilet facilities are provided for males and females at an amusement facility and a specialty event center where the public congregates, the number of toilets for the females shall be provided at a ratio of 2 for every toilet and every urinal provided for the males.

History: CR 04−072: cr. Register July 2005 No. 594, eff. 1−1−06.

SPS 391.20 Incorporation of standards by reference. (1) CONSENT. Pursuant to s. 227.21, Stats., the attorney general and the revisor of statutes have consented to the incorporation by reference of the standards listed in sub. (3).

(2) COPIES. Copies of the adopted standards are on file in the offices of the department, the secretary of state and the legislative reference bureau. Copies of the standards may be purchased through the respective organizations listed in sub. (3).

(3) ADOPTION OF STANDARDS. The standards referenced in pars. (a) and (b) are hereby incorporated by reference into this chapter.

(a) American National Standards Institute, Inc., 1430 Broadway, New York, New York 10018, GAS−FIRED TOILETS, Z21.61−1983.

(b) NSF International, 3475 Plymouth Road, P.O. Box 130140, Ann Arbor, Michigan 48113−0140, NON−LIQUID SATURATED TREATMENT SYSTEMS, NSF 41−1998.

History: Cr. Register, April, 2000, No. 532, eff. 7−1−00; **correction in (2) made under s. 13.92 (4) (b) 6., Stats., Register December 2011 No. 672.**

Chapter SPS 391

APPENDIX

The material and information contained in this appendix is for clarification purposes only. Appendix material and information are numbered to correspond to the rule number as it appears in the text of the code. Material and information included in this appendix is subject to change without notice, including names, addresses, phone numbers and forms, and reflects information known at the time of publication.

A−391.10 (3) (b) Section SPS 382.31 (16) (a) to (f) reads as follows:

382.31 (16) VENT TERMINALS. All vents and vent systems shall terminate in the open air in accordance with this subsection.

(a) *Extension above roofs.* Extensions of vents through a roof shall terminate at least 8 inches above the roof. Where the roof is to be used for any purpose other than weather protection, the vents shall extend at least 7 feet above the roof.

(b) *Waterproof flashings.* The penetration of a roof system by a vent shall be made watertight with an approved flashing.

(c) *Prohibited uses.* Vent terminals shall not be used as flag poles, support for antennas or other similar purposes.

(d) *Location of vent terminals.* 1. A vent shall not terminate under the overhang of a building.

2. All vent terminals shall be located:

a. At least 10 feet from an air intake;

b. At least 5 feet from a power exhaust vent;

c. At least 10 feet horizontally from or 2 feet above roof scuttles, doors and openable windows; and

d. At least 5 feet from or 2 inches above parapet walls.

3. Where a structure has an earth covered roof extending from surrounding grade, the vent extension shall run at least 7 feet above grade and terminate with an approved vent cap. The portion of vent pipe outside the structure shall be without joints, except one fitting may be installed where the pipe leaves the top or side of the structure.

(e) *Extension through wall.* Where approved by the department, a vent may terminate through an exterior wall. Such a vent shall terminate at least 10 feet horizontally from any lot line and shall terminate downward. The vent shall be screened and shall comply with par. (d).

(f) *Extensions outside buildings.* Drain or vent pipe extensions shall not be located or placed on the outside of an exterior wall of any new building, but shall be located inside the building.

Policy for Processing High-Strength Wastewater POWTS Plans
April 2009

Subject: Designing POWTS for commercial facilities that produce high-strength wastewater or are at-risk of producing high strength wastewater discharging to a POWTS with a soil dispersal component.

The purpose of this document is to describe how the Department of Commerce will process POWTS designs submitted for review and approval for facilities that may produce influent to a POWTS soil dispersal component that exceeds the parameters set forth in s. Comm 83.44(2). This code section limits the quality of influent discharging to a soil dispersal component to be equal to or less than the following:

a) A monthly average of 30 mg/L fats, oil and grease.
b) A monthly average of 220 mg/L BOD_5.
c) A monthly average of 150 mg/L TSS.

Facilities that separate high-strength waste streams and discharge them to a holding tank are not affected by this policy.

The soil application rates in Table 83.44-2 were developed based on the assumption that typical residential strength wastewater would be applied to the soil. Generally, residential strength wastewater falls below the levels listed above. POWTS soil dispersal components that receive wastewater that exceeds these concentrations (referred to herein as high-strength wastewater) have a higher risk of failure and may cause a health hazard if human exposure to partially treated wastewater occurs.

A literature search indicates that restaurants and other food preparation/processing facilities that prepare food as a major part of the operation are expected to produce high-strength wastewater that will exceed the maximum allowable concentrations. Therefore, for plan submittal/approval purposes, unless acceptable justification is provided, the Department will presume that buildings that fall under this type of use will generate high-strength wastewater and must incorporate into the design, measures to account for it. When a replacement system is proposed to serve an existing building the designer may submit sampling data either to prove that the monthly averages are less than the values listed in s. Comm 83.44(2), or use that sampling data or the presumed values listed in this policy to incorporate adequate design measures to reduce the strength of the wastewater below the limits of s. Comm 83.44(2). Due to the difficulty in obtaining reliable samples, it is suggested that a sampling plan be developed by a professional and reviewed by department staff prior to implementing the sampling plan. The collection, storage and testing of samples shall be performed in accordance with accepted scientific methods.

New POWTS

New public/commercial POWTS that may produce wastewater exceeding the limits of s. Comm 83.44(2) will fall into one of two groups – high-strength producing or at-risk of producing high-strength wastewater. Commercial/public occupancies that are not usually expected to produce high-strength wastewater will not fall into one of these two groups and are not required to take additional measures to manage the strength of the wastewater produced from the facility. The categorization of a facility and associated review presumptions are described in further detail below.

<u>High-Strength Wastewater Producing Facilities</u> - For public/commercial buildings that have food preparation as a major part of their daily operation such as fast food and full service restaurants, dining halls, grocery stores with deli's and butcher shops, and similar facilities the department will presume that septic tank effluent will have the following strength unless data acceptable to the Department is provided:

FOG – 200 mg/L
BOD_5 – 1200 mg/L
TSS – 220 mg/L

Designs for these types of facilities must include measures to treat the wastewater to acceptable limits. This generally involves the use of pretreatment. The values listed above assume that exterior grease interceptors are installed. When pretreatment occurs, a pressure distribution system must be incorporated in the design unless otherwise approved.

At-Risk Wastewater Producing Facilities – For public/commercial buildings that have food preparation as part of their operation, but less than that of a full-service restaurant, a different approach will be accepted provided that the local governmental unit (usually the county) in which the POWTS is proposed to be located concurs in writing with the additional oversight role. This alternative approach relies less on presumptions of wastewater strength and more on monitoring the performance of the system and taking a proactive approach should persistent ponding be observed. Some examples of these types of facilities may include but are not limited to daycare facilities and schools with cafeterias. Providing pretreatment is optional, but if pretreatment is not included in the proposed design a more aggressive system monitoring protocol in the management plan will be required. The monitoring protocol will be expected to detect early signs of failure such as persistent ponding of the soil dispersal component so modifications to the design of the system or operation of the facility can be made before the system causes a potential health hazard. The management plan for these types of facilities must provide for inspections of the POWTS on a twelve month or less basis by a person qualified to perform them. A checklist of what will be monitored must be included in the management plan. Within 30 calendar days of the inspection, the inspection report shall be submitted to the governmental unit or delegated agent in accordance with s. Comm 83.55(2). The management plan must be accompanied by a detailed contingency plan which addresses what measures are likely to be taken should signs of early failure be observed.

Replacement POWTS

High-Strength Wastewater Producing Facilities - Existing facilities may submit to the Department a proposed sampling plan to determine the loads and flows of wastewater from an existing building needing a replacement POWTS for concurrence prior to implementing the plan. Review fees may be charged for reviewing the proposed sampling regimen – check with Department staff first. The collection, storage and testing of samples shall be performed in accordance with accepted scientific methods. The plan must outline which methods will be utilized and identify the qualified individual(s) who will be collecting the samples. Sampling points shall be representative of the influent to the soil dispersal component. For acceptable sampling and testing methods, refer to the Commerce-developed guidance documents associated with this policy (documents not available at time of online posting). If samples are collected, the design shall then be based upon the sampling results. If a suitable sampling location is not available, the presumed loading rates listed for new facilities may be used.

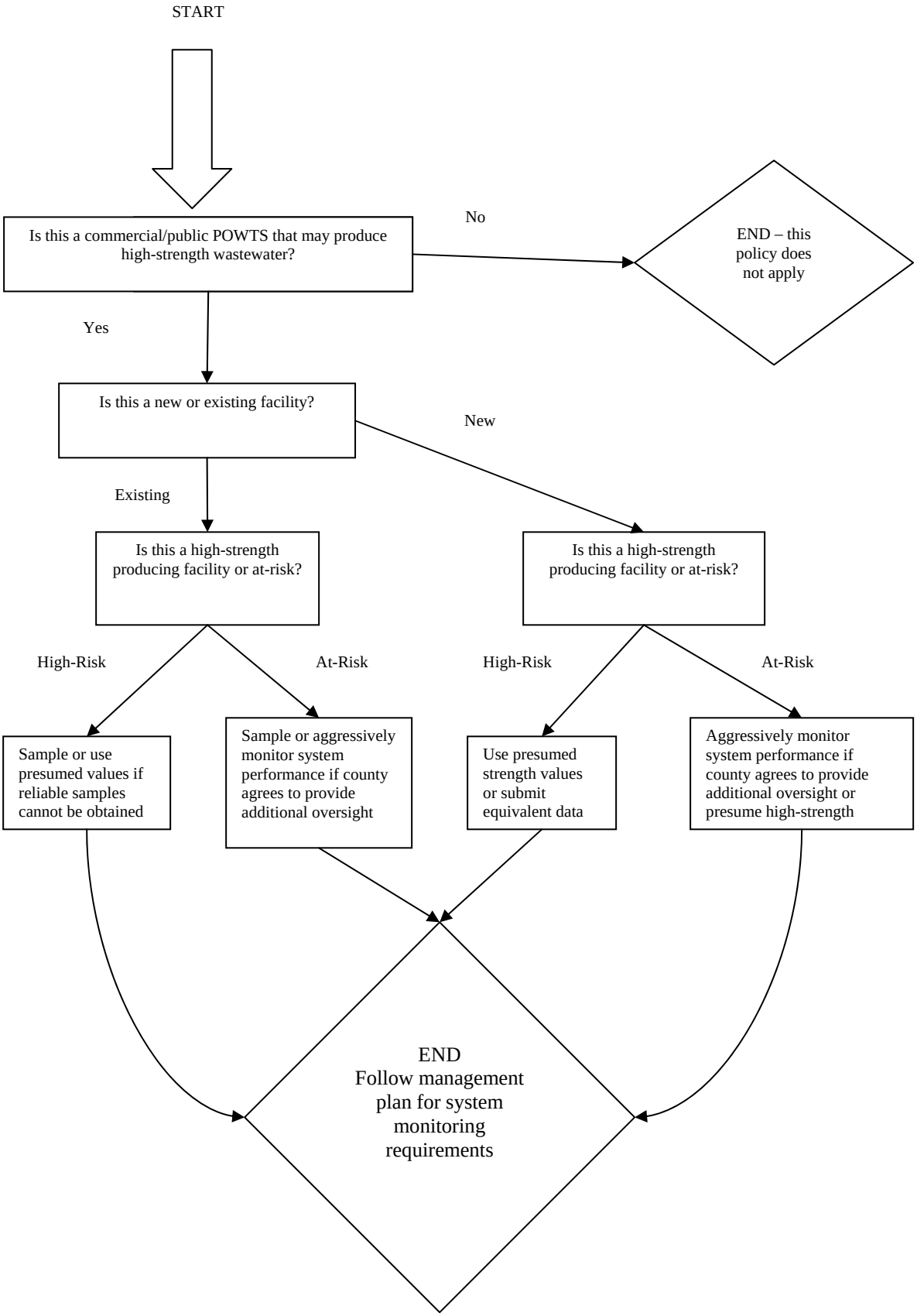
At-Risk Wastewater Producing Facilities – Existing facilities may either follow the steps for new at-risk facilities or submit a wastewater sampling plan prior to sampling. If sampling is conducted, the design shall be based upon those results. If sample results reveal that the average value exceeds the parameters set forth in s. Comm 83.44(2), then the design must include measures to ensure that the parameters are not exceeded.

This policy will be effective for plans submitted from April 1, 2009 until further notice.

DATED:_____

Bradley A. Johnson, P.E.
Integrated Services Section Chief

Roman Kaminski
POWTS Program Manager


START
Is this a commercial/public POWTS that may produce high-strength wastewater?
No
END – this policy does not apply
Yes
Is this a new or existing facility?
New
Existing
Is this a high-strength producing facility or at-risk?
Is this a high-strength producing facility or at-risk?
High-Risk
At-Risk
High-Risk
At-Risk
Sample or use presumed values if reliable samples cannot be obtained
Sample or aggressively monitor system performance if county agrees to provide additional oversight
Use presumed strength values or submit equivalent data
Aggressively monitor system performance if county agrees to provide additional oversight or presume high-strength
END
Follow management plan for system monitoring requirements

6/21/97	Code Comparison - POWTS Code Setback Encumbrances (ft)																
	Vertical Separation SAS		Horizontal Separation Soil Absorption System (SAS)								Horizontal Separation Treatment Tank[a]						
Effective Date	Ground-water	Bedrock	Well	Lake[b]	Cistern	Building	Lot Line	Swimming Pool	Water Service	Public W Main	Well	Lake[c]	Cistern	Building	Lot Line	Swimming Pool	Water Service
3/1/97	3/6[k]	3/6[k]	50	50	25	25/15/10[h]	5	15	10	25	25	25	10	5	2	5	10
3/1/94	3/6[k]	3/6[k]	50	50	25	25/15/10[h]	5	15	10	25	25	25	10	5	2	5	10
3/1/92	3/6[k]	3/6[k]	50	50	25	25/15/10[h]	5	15	10	25	25	25	10	5	2	5	10
7/1/91	3/6[k]	3/6[k]	50	50	25	25/15/10[h]	5	15	10	25	25	25	10	5	2	5	10
10/1/85	3	3	50	50	25	25/15/10[h]	5	15	10	25	25	25	10	5	2	15	10
7/1/83	3	3	50	50	25	25/15/10[h]	5	15	10	25	25	25	10	5	2	15	10
1/1/81	3	3	50	50	25	25/15/10[h]	5	15	10	25	25	25	10	5	2	15	10
6/21/80	3	3	50	50	25	25/15/10[h]	5	15	10	25	25	25	10	5	2	15	10
2/1/79	3	3	50	50	25	25/10[i]	5	25/15[j]	10	25	25	25	10	5	2	25	10
8/1/77	3[d]	3[d]	50	50	25	25/10[i]	5	25/15[j]	10	25	25	25	10	5	2	25	?
8/1/76	3[d]	3[d]	50	50	25	25/10[i]	5	25/15[j]	10	25	25	25	10	5	2	25	?
12/1/72	3	3	50	50	25	25	5	50	25		25	25	10	5	2	25	?
11/1/71	3	3	50	50	25	25	5	50	25		25	25	10	5	2	25	?
12/1/69	3	3	50	50	25	25	5	50	25		25	25	10	5	2	25	?
3/1/63		0[e]	50	25	25	25[g]	5				25		10		2		
5/1/62		0[e]	50	25	25	25[g]	5				25		10		2		
3/1/57		0[e]	50	25	25	25[g]	5				25		10		2		
9/1/54		0[e]	50	25	50	50[g]	5				25		10		2		
1948			50	25	50	50[g]					25		10		2		
1941			150[f]		50	50[g]					25		10		2		
1937			150[f]		50	50[g]					25		10		2		
1932			150[f]		50	50[g]					25		10		2		
1925			150[f]		50	50[g]					25		10		2		
1917			150[f]		50	50[g]					25		10		2		
1916			150[f]		50	50[g]					25		10		2		
1914			150[f]		50	50[g]					25		10	10	2		
Effective Date	Ground-water	Bedrock	Well	Lake[b]	Cistern	Building	Lot Line	Swimming Pool	Water Service	Public W Main	Well	Lake[c]	Cistern	Building	Lot Line	Swimming Pool	Water Service

Footnotes:

a. Includes water-tight cesspools, sewage tanks, septic tanks, dosing chambers.
b. Lake category includes lakes, streams or other watercourses.
c. Lake category includes lakes, streams, rivers, ponds, flowages and reservoirs.
d. The code required 5 feet of soil over GW or BR. It is assumed that a 3 foot separation was maintained.
e. Seepage pits shall not extend into creviced rock formations.
f. May be reduced to 50 feet if well is drilled and cased to 100 ft.
g. Means a dwelling.
h. Refers to habitable or occupied bldg with below grade foundation/habitable bldg on slab/uninhabited bldg on slab.
I. Refers to habitable buildings/uninhabited buildings.
j. Refers to below ground/above ground swimming pools.
k. Refers to normal soil/very coarse textured soil.