

spected Fire Protection Equipment and Materials" classifies their degree of fire-resistance by the letters A, B and C. Class A roof coverings have the highest resistance and Class C the lowest.

(2) Roof coverings on buildings of fire-resistive and mill construction shall be not less than Class A, or equal, those on buildings of ordinary construction shall be not less than Class B, or equal, and those on frame buildings shall be not less than Class C, or equal.

(3) The department of industry, labor and human relations will accept roof coverings for different fire-resistance values as established by, and if installed according to, the requirements of the Underwriters' Laboratories.

*Note:* The Underwriters' Laboratories "List of Inspected Materials" is obtainable from the Fire Insurance Rating Bureau and Fire Insurance Agencies.

(4) The department of industry, labor and human relations will approve, subject to the provisions of this section, any roof covering which has developed the required fire-resistance in tests as specified in the "Standard Specifications of Fire Tests of Building Construction and Materials" (A.S.T.M. Designation C19-33) when conducted by a nationally recognized testing laboratory.

**Ind 51.08 Occupancy separations.** (1) When a building is used for more than one occupancy purpose, each part of the building comprising a distinct occupancy division shall be separated from any other occupancy division as provided for under the occupancy requirements of this code.

(2) Occupancy separations shall be classed as "Absolute", "Special" and "Ordinary" and shall apply to both horizontal and vertical separations.

(a) An absolute occupancy separation shall have no openings therein and shall be of not less than 4-hour fire-resistive construction as specified in sections Ind 51.05 and Ind 51.06.

(b) A special occupancy separation shall be of not less than 3-hour fire-resistive construction as specified in sections Ind 51.05 and 51.06. All openings in walls forming such separation shall be protected on each side thereof by self-closing fire-resistive doors as specified in section Ind 51.09, and such doors shall be kept normally closed. The total width of all openings in any such separating wall in any one story shall not exceed 25% of the length of the wall in that story and no single opening shall have an area greater than 120 square feet.

1. All openings in floors forming this type of separation shall be protected by vertical enclosures extending above and below such openings. The walls of such vertical enclosures shall be of not less than 2-hour fire-resistive construction as specified in section Ind 51.05 and all openings therein shall be protected on one side thereof by self-closing one-hour fire-resistive doors as specified in section Ind 51.09 and such doors shall be kept normally closed.

(c) An ordinary occupancy separation shall be of not less than one-hour fire-resistive construction as specified in sections Ind 51.05 and 51.06. All openings in such separations shall be protected by self-

closing fire-resistive doors as specified in section Ind 51.09 and such doors shall be kept normally closed.

**History:** 1-2-56; r. and recr. (2) (c), Register, October, 1967, No. 142, eff. 11-1-67.

**Ind 51.09 Fire-resistive doors.** (1) Fire-resistive doors have no time resistance rating established by governmental agencies. It will be the policy of the department of industry, labor and human relations to approve, subject to the provisions of this section, any door given a rating by the Underwriters' Laboratories in their "Building Materials List" as class A, B, C, D and E having varying degrees of resistance, and suitable for various locations.

(2) Where fire-resistive doors are required, class A doors, or equal shall be used for all openings in 3 and 4 hour fire-resistive walls. Class B, 1½-hour fire-resistive doors, or equal shall be used for all openings in 2-hour walls. Doors for elevator shafts shall be of class B type or equal. Class C doors, or equal, shall be used in openings in corridor partitions in fire-resistive buildings and for openings in one-hour fire-resistive partitions except that wood doors of solid flush type, 1¾ inches thick may be used in such buildings which are less than 85 feet in height. Class D and E doors, or better, shall be used in outside wall openings where required for fire escapes.

(3) All required fire-resistive doors shall be equipped with a self-closing device.

**History:** 1-2-56; r. and recr. Register, September, 1959, No. 45, eff. 10-1-59; am. Register, December, 1962, No. 84, eff. 1-1-63; am. (2), Register, December, 1967, No. 144, eff. 1-1-68.

**Ind 51.10 Fire-resistive windows.** (1) Windows shall be of a design approved by the department of industry, labor and human relations for the intended use as provided under occupancy classifications. The term "window" in this section shall include the frame, sash and all other parts of a complete assembly. Approved wire glass ¼ inch in thickness shall be used for glazing.

(2) Windows shall be limited to sizes for which effective fire-resistance has been demonstrated by actual fire test, and which in no case exceed 84 square feet in area and 12 feet in greatest dimension. Such windows may be combined in multiple assemblies when separated by approved metal mullions, which shall be considered non-bearing.

(3) Individual glass lights shall not exceed 720 square inches in area, and 54 inches in vertical and 48 inches in horizontal dimension.

**Note:** It will be the policy of the department of industry, labor and human relations to approve, subject to the provisions of this section, any window bearing the inspection manifest of the Underwriters' Laboratories for the situation of installation.

**Ind 51.11 Glass block.** (1) **USE.** Approved glass block may be used in non-load bearing panels in walls where ordinary glass will be permitted, unless specifically prohibited by occupancy requirements of this code.

(2) **INSTALLATION.** Glass block panels shall not exceed 144 square feet in unsupported area, with a maximum height of 20 feet and a maximum width of 20 feet. The horizontal and vertical mortar joints between each block shall be composed of one part of Portland cement, one part of lime and 4 parts of sand, or its equivalent.

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specified in sections Ind 51.05 and 51.06, except that this requirement shall not apply to buildings where jacketed stoves or school room heaters are permitted. All openings shall be protected by self-closing fire-resistive doors as specified in section Ind 51.09.

**Ind 56.16 Sanitary equipment. (1) TOILETS.** School buildings shall have the following toilet equipment:

(a) In high schools, one water-closet for every 30 females or fraction.

(b) One water-closet for every 60 males or fraction and one urinal for every 30 males or fraction.

(c) In junior high and elementary schools, one water-closet for every 25 females or fraction, one water-closet for every 50 males or fraction and one urinal for every 25 males or fraction.

(2) **DRINKING WATER.** One drinking fountain shall be installed in each story and basement, for each 6000 square feet of classroom floor area, or fraction. Drinking fountains shall not be installed in toilet rooms.

(3) **WASHING FACILITIES.** Lavatories shall be provided in connection with toilet rooms in the ratio of one lavatory for every 60 persons of each sex in high schools and one lavatory for every 50 persons of each sex in junior high schools and elementary schools.

(4) **WRAPS.** It shall be necessary to provide facilities for the placing and storage of wraps of all occupants in every school building. The above facilities shall be constructed and arranged to facilitate cleaning.

(a) This prohibits the use of corridors and vestibules for cloak room purposes unless ventilated lockers, wardrobes, or open front wardrobes are provided. Open hooks and hangers in the corridors will not be approved.

**History:** 1-2-56: am. (2), (3), (4) and (4) (a). Register, September, 1959, No. 45, eff. 10-1-59, r. and recr. (4), intro. par., Register, December, 1967, No. 144, eff. 1-1-68.

**Ind 56.17 Lighting. (1) ELECTRIC LIGHTING.** Every class, study or recitation room shall be equipped with sufficient electrical lighting units to maintain the illumination required in Wis. Adm. Code chapter Ind 19, illumination code.

(2) **GENERAL.** All other rooms and spaces in school buildings shall be equipped with means for supplying electric illumination in the quantity required for the purpose for which the room or space is used. All electrical work shall be installed to conform to the requirements of the Wisconsin state electrical code.

(3) **WINDOWS. (a)** All classrooms and spaces in elementary school buildings used for instruction or study purposes shall be provided with side wall clear glass or other approved transparent material, vision panels or windows opening directly upon a street, alley, or open court as specified in section Ind 56.05 except gymnasiums, auditoriums, cafeterias, lunch rooms, libraries, audio-visual rooms, science rooms, homemaking rooms, art rooms, music rooms, vocational shops and similar areas.

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(b) The windows or vision areas shall have a total glass area of not less than 40 square feet. The sill height shall not exceed 3'6" above the floor and the horizontal width of the vision area shall not be less than 5 feet. A minimum of 10 square feet of the aggregate glass area shall be arranged to open.

(c) Glass block construction conforming with the requirements of Wis. Adm. Code section Ind 51.11 may be used in classrooms and spaces used for instruction purposes except as specified in (a) and (b).

(d) Glass block wall panels which are exposed to direct sun rays and are 5 feet or more above the floor level shall be of a type capable of directing the light rays horizontally or upward.

**History:** 1-2-56; am. Register, January, 1961, No. 61, eff. 2-1-61; cr. (3), Register, November, 1963, No. 95, eff. 12-1-63.

**Ind 56.18 Fire extinguishers.** In every building, standard fire extinguishers, as specified in Wis. Adm. Code section Ind 51.22, shall be provided in the proportion of one extinguisher to each 2500 square feet, or fraction, of floor area, but there shall be at least one fire extinguisher on each floor including basement. In addition to the fire extinguishers for general protection there shall be at least one extinguisher of appropriate type and size in each laboratory, shop or other vocational room. Every fire extinguisher shall be prominently exposed to view and always accessible.

**Ind 56.19 Fire alarms.** (1) Every building 2 or more stories in height and every one-story building with 6 or more classrooms and an assembly hall or gymnasium accommodating more than 100 persons shall be provided with a proper alarm system complying with Wis. Adm. Code section Ind 51.24. *Exception:*

(a) A hand-operated alarm if permanently installed and so arranged that it can be operated from any story, including the basement, may be used in school buildings not more than 2 stories in height and having not more than 2 standard size classrooms on the second floor.

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2. A hangar for the storage of not more than one airplane or a boat house for the storage of not more than one motor boat may be of frame construction if located at least 15 feet from any property line or other building.

(b) All walls, or parts of walls, nearer than 5 feet to a boundary line between premises or to any other building shall be unpierced; all walls, or parts of walls, nearer than 10 feet, but not nearer than 5 feet, to a boundary line between premises or to any other building shall have all openings therein protected by means of fire-resistive doors and windows as specified in sections Ind 51.09 and 51.10.

(c) Where a garage which is more than 500 square feet in area is built in connection with a building used for other purposes, it shall be separated therefrom by means of 4-hour fire-resistive walls as specified in section Ind 51.05 and unpierced 4-hour fire-resistive floors above and below as specified in section Ind 51.06. All openings in the walls to adjoining parts of the building shall be protected by means of self-closing fire-resistive doors as specified in section Ind 51.09. Stairways from garages leading to upper stories shall be separated from the garage area with walls of 4-hour fire-resistive construction as specified in section Ind 51.05 with all openings protected by means of self-closing fire-resistive doors as specified in section Ind 51.09.

(d) Where a garage which is less than 500 square feet in area is built in connection with a public building or place of employment under this code, the garage shall have walls and ceiling of not less than one-hour fire-resistive construction as specified in sections Ind 51.05 and Ind 51.06, and the openings to adjoining parts of the building shall be protected by means of fire-resistive doors as specified in section Ind 51.09.

(3) FIRE PROTECTION. Boilers, furnaces and all open flame equipment within garages and service stations shall be effectively separated from other areas by not less than 2-hour fire-resistive walls, floors and ceilings as specified in sections Ind 51.05 and 51.06. Such enclosures in basements shall have no openings into other basement areas. All stairways leading to such basement enclosures from the first floor shall be enclosed on the first floor with not less than 2-hour fire-resistive construction as specified in sections Ind 51.05 and Ind 51.06, and the opening thereto protected with a fire-resistive door as specified in section Ind 51.09.

(a) Suspended furnaces and direct fired unit heaters fired with liquid fuel or gas may be used without an enclosure where approved by the department of industry, labor and human relations. Where approved, the equipment and installation shall satisfy requirements of section Ind 59.66.

(b) In garages or service stations which are heated by a suspended furnace located in a utility room or storage room, the enclosing walls, floor and ceiling shall be of 2-hour fire-resistive construction unless one side of the room is left open.

(4) FLOOR PITS. There shall be no pits or other depressions in the floor of any garage area, except that this requirement shall not apply to the shallow depressions formed to secure floor drainage, nor to catch

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basins installed in compliance with the provisions of the plumbing code issued by the state board of health nor to floor openings for access to regular basements.

(a) This will permit service openings in the floors of garages or service stations provided that the area below can be classed as regular basements and are ventilated in accordance with the requirements of the building, heating, ventilating and air conditioning code.

**History:** 1-2-56; r. and recr. (2) (c), Register, September, 1959, No. 45, eff. 10-1-59; am. Register, January, 1961, No. 61, eff. 2-1-61; am. (3) (a), Register, December, 1967, No. 144, eff. 1-1-68.

**Ind 57.51 Filling stations; buildings and structures. (1) DEFINITIONS.** (a) By filling station is meant one or more pumps, tanks, and other pieces of equipment used in the storage and dispensing of liquid fuels and arranged for the sale of such liquid fuels to the public.

(b) By dispensing area is meant any area within 15 feet of any pump or other dispensing equipment.

(c) By basement or open space under a floor or dispensing area is meant any space that does not have an outlet at its lowest level, at or above grade.

(2) **CONSTRUCTION.** (a) All buildings having a service space of more than 500 square feet in area, designed to accommodate motor driven vehicles, and all other buildings erected within 15 feet of the dispensing equipment shall be of ordinary construction as specified in section Ind 51.02, or better, except where canopies are provided over the dispensing equipment, such canopies shall be of incombustible construction throughout.

1. Pumps or other dispensing equipment serving liquid fuel to the public which are located within or under any occupied part of any building or structure shall be installed in compliance with the provisions of the flammable liquids code.

(b) Buildings not more than one story in height and not exceeding 500 square feet in area may be of frame construction if located at least 15 feet from dispensing equipment and 10 feet from the boundary lines between premises and from other buildings on the same premises.

(c) Buildings more than 500 square feet in area used as office buildings exclusively, or in connection with other non-hazardous occupancies may be of frame construction if not more than one story in height and located at least 30 feet from boundary lines between premises, from other buildings on the same premises and from the dispensing equipment.

(d) All walls, or parts of walls, in buildings under (a) which are nearer than 5 feet to a boundary line between premises or to any other building shall be unpierced; all walls, or parts of walls nearer than 10 feet, but not nearer than 5 feet, to a boundary line between premises or to any other building shall have all openings therein protected by means of fire-resistive doors and windows as specified in sections Ind 51.09 and 51.10.

(e) The main floor level of any building erected within 15 feet of equipment used to dispense liquid fuel shall not be below the level of the driveway or grade at such equipment.

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extend not less than 2 feet above the high point of the roof or parapet and shall be capped with an approved siphon type roof ventilator.

*Note:* For ventilation requirements where spray coating is done, see Wis. Adm. Code Ch. Ind 21.

*History:* Cr. Register, January, 1965, No. 109, eff. 2-1-65.

**Ind 59.53 Places of employment.** (1) **SCOPE.** This classification shall include all places of employment not classified elsewhere in this code.

(2) **VENTILATION REQUIRED.** (a) The air movement supply and distribution for all areas in this class shall conform to the requirements of Wis. Adm. Code section Ind 59.41 unless all of the following requirements have been satisfied:

1. The available floor space for each occupancy shall be at least 75 square feet per person.

2. Heat, smoke, gas, dust, spray, hazardous fumes, vapors, steam or other contamination shall not be present in sufficient quantities to obstruct the vision, or be irritating, or injurious to the health or safety of employes and frequenters.

3. The total area of outdoor openings shall be not less than 3% of floor area served, except in refrigeration plants, warehouses, cold storage buildings and processing areas where the nature of the occupancy does not permit outdoor openings.

(3) **INDUSTRIAL EXHAUST SYSTEMS REQUIRED.** (a) Industrial exhaust systems shall be installed and operated to remove harmful contaminants in conformance with Wis. Adm. Code, Ch. Ind 20.

(b) Supply a volume of tempered outside air to replace the air exhausted if the volume of air exhausted exceeds an infiltration rate of 3 air changes per hour.

(4) **LOCKER ROOMS.** Locker rooms used in places of industrial employment shall be provided with a tempered air supply.

*Note 1:* See Wis. Adm. Code section Ind 59.48.

*Note 2:* Exhaust air from locker rooms may be directed through the adjoining toilet or shower room.

(5) **FIRST AID REST ROOMS IN PLACES OF EMPLOYMENT.** Ventilation shall be provided for all areas of this class to conform to the requirements of Wis. Adm. Code section Ind 59.41. Ventilation is not required where the total sash area is greater than 10% of the floor area and the openable area is greater than 5%.

*History:* Cr. Register, January, 1965, No. 109, eff. 2-1-65.

**Ind 59.55 Penal institutions and places of detention.** (1) **SCOPE.** This classification shall include corridors and areas of compulsory occupancy in penal institutions, mental hospitals and other places of detention.

(2) **VENTILATION REQUIRED.** The air movement supply and distribution for all areas of this class shall be accomplished by mechanical means and shall conform to the requirements of sections Ind 59.40 and 59.41. The air movement through the corridors shall be not less than 10 cubic feet per minute per lineal foot of corridor.

(3) **OVERNIGHT LOCK-UPS.** Where cells are provided for not more than 6 occupants for the purpose of overnight detention only, ex-

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haust ventilation shall be provided on the basis of 6 air changes per hour for the occupied area.

*History:* Cr. Register, January, 1965, No. 109, eff. 2-1-65.

**Ind 59.56 Hospitals.** (1) **SCOPE.** This classification shall include hospitals, nursing homes, public health centers, and treatment centers where medical services are provided for treatment and care of "bedfast patients".

*Note 1:* A "bedfast patient" is a person who is normally confined to a bed or chair.

*Note 2:* Refer to the State Board of Health, Hospital and Related Services, for additional requirements.

(2) **VENTILATION REQUIRED.** (a) Exhaust ventilation shall be provided from bedpan rooms, baths, janitor closets, sterilizing rooms, laboratories, soiled utility rooms, and soiled linen rooms on the basis of 2 cubic feet per minute for each square foot of floor area.

(b) Enclosed nursing stations, drug storage rooms, clean utility rooms, treatment rooms, dark rooms and X-ray rooms shall have a minimum air movement of 6 air changes per hour unless the openable window area is 3% of the floor area served. Such ventilation shall be accomplished by exhaust methods where the volume of air exhausted shall be greater than the volume of air supplied.

(c) The operating rooms, anesthesia rooms, recovery rooms, labor rooms, delivery rooms and nursery shall have a minimum air movement of not less than 6 air changes per hour. Tempered outside air shall be provided and the system shall be designed to maintain a room temperature of 75 degrees Fahrenheit. The recirculation of air is not permitted except in a nursery where part of the air may be recirculated from the area supplied. Provide mechanical exhaust ventilation equal to the volume of air supplied. Relative humidity in the anesthetizing locations shall be maintained at not less than 50%.

(d) Private, semi-private wards and day rooms shall be ventilated in accordance with the requirements of Wis. Adm. Code section Ind 59.41 unless openable sash area has been provided and the content of the space is in excess of 400 cubic feet per occupant.

*Note:* See Wis. Adm. Code sections Ind 57.17 and 57.19.

*History:* Cr. Register, January, 1965, No. 109, eff. 2-1-65; am. (2) (d), Register, December, 1967, No. 144, eff. 1-1-68.

**Ind 59.60 Outside ventilating air intakes.** (1) **LOCATION.** (a) Outside air intake openings shall be located a distance of at least 20 feet horizontally or 10 feet vertically from vents and chimney outlets.

(b) Where vents and intakes are located on adjacent walls of outside corners, the horizontal distance may be reduced to 10 feet.

(c) Outside air intake openings located in exterior walls shall be located at least 10 feet (measured in any direction) from any exhaust vent or chimney outlet.

(2) **MOUNTING HEIGHT.** (a) Outside air intake openings shall be located at least 12 inches above the outside grade or above roof.

(b) Where outside air intake openings are located in any areaway below grade, the top of the areaway shall be not less than 12 inches above the grade level.

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