

# INDUSTRIAL COMMISSION OF WISCONSIN

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## ELEVATOR CODE

### INTRODUCTION

The present Wisconsin Elevator Code is a complete revision of the original elevator code which became effective February 20, 1913. The first Wisconsin Elevator Code was drafted by the then existing committee on safety and sanitation composed of the following persons:—

- Representing Wisconsin State Federation of Labor:  
George Mutter, Machinist, Milwaukee.  
Fred French, Patternmaker, Milwaukee.
- Representing Milwaukee Merchants and Manufacturers' Association:  
Charles P. Bossert, Pfister and Vogel Leather Company.  
Edward J. Kearney, Kearney and Trecker Company, Chairman.
- Representing Milwaukee Health Department:  
Joseph Derfus, Chief Sanitary Inspector.
- Representing Wisconsin Manufacturers' Association:  
Thomas McNeill, Sheboygan Chair Company, Sheboygan.  
H. W. Bolens, Gilson Manufacturing Company, Port Washington.
- Representing Employers' Mutual Liability Company of Wausau:  
W. C. Landon, Wausau.
- Representing Industrial Commission of Wisconsin:  
John W. Mapel, Pfister and Vogel Leather Company.  
Fred W. McKee, Fairbanks-Morse Company, Beloit.  
C. W. Price, Assistant to the Industrial Commission and Secretary of the committee.

The following sub-committee assisted the main committee on safety and sanitation in drafting the orders:—

- C. F. Ringer, former Inspector of Buildings, Milwaukee.
- P. Jermain, Otis Elevator Company.
- George Mueller, Inspector of Elevators, Milwaukee.

Otto Fischer, Inspector of Elevators, Milwaukee.  
G. N. Chapman, Inspector of Safety, Travelers' Insurance Company.  
C. W. Price, Assistant to Industrial Commission.

The elevator code was amended first rather extensively in 1917, by an elevator code committee including the following persons.

C. F. Ringer, Architect, former Inspector of Buildings, Milwaukee.  
P. Jermain, Otis Elevator Company.  
George Mueller, Inspector of Elevators, Milwaukee.  
G. N. Chapman, Inspector of Safety, Aetna Insurance Company.  
Sidney J. Williams, Engineer, Industrial Commission.

The revision by the above committee became effective January 10, 1918. Minor details of the code were amended in 1920, becoming effective April 23, 1920. Order 499 of the previous edition of the elevator code was adopted March 23, 1920, and became effective April 24, 1920.

The present revision of the elevator code was drafted by the following elevator code committee:

George Mueller, Chairman, Elevator Inspector for Building Inspection Department, Milwaukee.  
W. C. Muehlstein, Madison, Secretary of Committee, Industrial Commission.  
C. P. Bossert, Pfister and Vogel Leather Company, Milwaukee.  
Mathew Orth, Elevator Constructor, 27 Martin Street, Milwaukee.  
\*Harrison P. Reed, General Manager, A. Kieckhefer Elevator Company, Milwaukee.  
John Rodenberg, Milwaukee Manager, Otis Elevator Company, Milwaukee.  
Thomas L. Rose, Architect, Wisconsin Chapter of American Institute of Architects, Milwaukee.  
Walter S. Smith, Wisconsin Mutual Liability Company, Milwaukee.  
Louis G. Koster, Elevator Inspector, Industrial Commission. Now Superintendent of Construction, S. Heller Elevator Company, Milwaukee.

Advisory Members:

Leo Glueckstein, President, S. Heller Elevator Company, Milwaukee.  
W. A. Rosenberg, President, F. Rosenberg Elevator Company, Milwaukee.

This edition of the elevator code is a complete revision of the requirements as applied to elevator manufacture and installation in Wisconsin, and includes the repeal of certain of the present requirements, and the addition of new orders.

\*Deceased short time before revision was completed.

The changes are based on study of elevator accidents throughout the country, and are intended to parallel the Safety Code for Elevators which was prepared under the general auspices of the American Engineering Standards Committee.

The orders contained in the elevator code are adopted by the commission under authority of Sections 101.01 to 101.28, inclusive, of the statutes of Wisconsin, and apply to all places of employment and to all public buildings, as defined by the statutes. The statutes specifically authorize the charging of fees for elevator inspections as described in Order 407.

#### Administration

The elevator code will be enforced by the Industrial Commission in cooperation with local officials, who are required by law to enforce all orders of the commission which are germane to their respective duties (Section 101—28), and in cooperation with inspectors and insurance companies.

#### Appeal

Any person who considers any part of the elevator code, or any interpretation of the code to be unreasonable, may appeal to the commission to modify or suspend the same. (See Sections 101.15 to 101.17 inclusive).

#### Penalty for Violation of an Order

Section 101.18 of the Wisconsin statutes provides that "every day during which any person, persons, corporation, or any official, agent, or employee thereof, shall fail to observe and comply with any order of the commission, or to perform any duty enjoined by Sections 101.01 to 101.29 inclusive, shall constitute a separate and distinct violation of such order, or of said sections, as the case may be".

Section 101.28 of the statutes provides that any employer or other person who violates an order, or fails or refuses to comply with a requirement of the elevator code shall forfeit and pay into the state treasury the sum of not less than \$10, nor more than \$100 for such violation.

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## Part I

### DEFINITIONS

#### SECTION I. DEFINITIONS.

##### Order 400.—Definitions.

1. An elevator is an elevating and lowering device, other than a dumbwaiter, provided with a platform and cage which is located in a permanent shaftway and is designed or used to carry persons or materials.
2. A dumbwaiter is an elevating and lowering device provided with a platform which is located in a permanent shaftway, is designed and used to carry materials only, is not more than 9 square feet in area and not more than 4 feet high, and has a carrying capacity of not more than 500 pounds.
3. A passenger elevator is an elevator used chiefly for carrying persons.
4. A freight elevator is an elevator used chiefly for carrying materials.
5. A carriage type elevator is an elevator which is supported by cables attached to the platform at four or more points.
6. A sidewalk elevator is an elevator located below a sidewalk or other public thoroughfare, and which has no lifting or counterweighting mechanism above the top landing level.
7. A hand power elevator is an elevator which is operated by hand power only.
8. A power elevator is an elevator which is operated by machinery and this classification includes all elevators which are not classed as hand power elevators.
9. An automatic push button elevator is an elevator the operation of which is controlled by buttons, at the landings and in the car, in such a manner that all landing stops are automatic.
10. An escalator is a moving, inclined, continuous stairway, or runway, used for raising or lowering persons.

11. A full automatic door, or a full automatic gate, is one which is opened by the action of the elevator car approaching the landing and is closed by gravity as the car leaves the landing.

12. A semi or half automatic door, or a semi or half automatic gate, is one which must be opened by hand, but which closes by gravity when the car leaves the landing.

13. An independently operated door, or an independently operated gate, is one which is opened and closed manually, or by power, from a source in no way derived from the motion of the car.

14. The travel of an elevator is the vertical distance from the lowest to the highest landing.

15. The term speed as applied to the movement of an elevator car means the average of the maximum speeds attained, in the up and down directions with 50 per cent of the capacity load on the car, in making a complete return trip between terminal landings.

16. The depth of pit is the vertical distance from the lowest landing to the bottom of the shaftway.

17. The overhead clearance is the vertical distance between nearest points of contact between the car and the overhead construction when the car is at the highest landing.

18. A basement is a story whose floor line is below the grade at any entrance, and whose ceiling is not more than 9 feet above such grade at any entrance.

19. An incombustible material is one which will not support combustion.

20. Fireproof construction means the use of incombustible material throughout and resistant to fire action.

21. A semi-fireproof enclosure or a semi-fireproof wall consists of not less than  $1\frac{5}{8} \times 3\frac{5}{8}$  inch studding, spaced not more than 16 inches center to center, with the  $3\frac{5}{8}$  inch dimension at right angles with the plane of the wall, and having the following protection on both sides of the partition:—

(1) Metal lath and at least  $\frac{3}{4}$  inch of Portland cement or gypsum plaster or gauged plaster containing one-half lime, one-half part (or more) Portland cement, and not over four parts sand; or

(2) Good quality plaster board at least  $\frac{1}{2}$  inch thick, covered with sheet metal; or

(3)  $\frac{1}{4}$  inch asbestos board, covered with at least  $\frac{1}{2}$  inch Portland cement or gypsum plaster, or with sheet metal; or two layers of  $\frac{1}{4}$  inch asbestos board, breaking joints; or

(4) The spaces between studding may be filled with approved incombustible material, the partition being plastered with Portland cement or gypsum plaster on metal lath; or

(5) Other equivalent approved fire resistive construction.

22. A fire door consists of a door and frame constructed entirely of fire resistive metal, or of wood completely covered with fire resistive metal.

23. A shaftway door interlock or a shaftway gate interlock is a device, the purpose of which is:

(1) To prevent the operation of the elevator machine to move the car away from the landing,

(a) Unless all shaftway landing doors or gates are closed and latched within 4 inches of the fully closed position, or

(b) Unless the shaftway door or gate opposite which the car is standing is closed and latched within 4 inches of the fully closed position; and

(2) To prevent the opening of a shaftway door or gate from the landing side unless the car is at that landing.

*Note.*—Where a door is equipped with an approved door closer which will positively latch the door after being released from the hand of the operator, such door is considered latched when the 4-inch zone is reached, provided that, after the car leaves the landing, the door cannot be opened from the landing side more than 4 inches.

24. A door electric contact or gate electric contact is an electrical device, actuated by the movement of the door or gate, the function of which is to prevent the operation of the elevator machine to move the car away from the landing unless all shaftway doors or shaftway gates are closed and latched within 4 inches of the fully closed position.

25. A telescoping gate is one in which the several parts slip together without distortion.

26. A collapsing gate is one that is distorted in opening and closing.

*Note.*—An accordion or expansion bar gate is a collapsing gate.

27. New installations or elevators hereafter installed include:—

(1) Every elevator for which the contract was not let before the effective date of this code;

(2) The shaftway enclosure, guides and machine of an elevator installed after the effective date of this code;

(3) The shaftway enclosure, guides and machine of an elevator which is hereafter moved to a new location or materially changed;

(4) Any complete part of an existing elevator which is materially altered or renewed after the effective date of this code;

(5) Every elevator which, after the effective date of this code, is changed from freight to passenger service, or vice versa.

*Note*.—Ordinary repairs necessary to maintain elevators in safe condition are not considered material alterations.

28. Existing installations or elevators heretofore installed include all those elevators, or parts of elevators, which cannot be considered as elevators hereafter installed or new installations.

29. Approved means approved by the Industrial Commission.

## Part II

### SCOPE OF THE ELEVATOR CODE

#### SECTION I. SCOPE OF THE ELEVATOR CODE.

##### Order 401.—General Scope.

The provisions of this code shall apply to all elevator, dumbwaiter and escalator installations in public buildings and places of employment as defined by the statutes. The requirements apply to both existing installations and those hereafter installed unless otherwise specified.

##### Order 402.—Renewing of Elevators, Dumbwaiters and Escalators.

Any elevator, dumbwaiter or escalator which may hereafter be damaged or deteriorated by fire or other causes, including ordinary wear, so that its condition per cent is less than 50 per cent of its original condition shall not be repaired or rebuilt except in conformity with the requirements for new installations.

##### Order 403.—Exemptions.

This code does not apply to belt, bucket, scoop, roller, or similar inclined or vertical freight conveyors, tiering or piling machines when not passing through a floor, skip hoists, man hoists, mine hoists, lumber lifts, wharf ramps or apparatus in kindred classes, amusement devices, stage curtain hoists or lift bridges, nor to elevators used only for handling building material during the period of building construction.

*Note.*—For regulations relative to the use of elevators, hoists, derricks and similar equipment during the period of construction of a building or any other structure, see orders 3526 to 3527 inclusive of the General Orders on Safety in Construction issued by the Industrial Commission and re-printed in the appendix to this code.

## Part III

### PLANS, INSPECTIONS AND TESTS

#### SECTION I. PLANS.

##### Order 404.—Plans. New Installations.

Before starting work on any new installation of an elevator, dumbwaiter or escalator, plans shall be submitted to the Industrial Commission for approval, with an application, properly filled out, on a blank form furnished by the commission. Plans shall be in duplicate. This order shall not apply in cities where elevator permits are issued by the city in a manner approved by the Industrial Commission. Every elevator manufacturer who furnishes an elevator, dumbwaiter or escalator to be installed by the owner, or an agent of the owner, shall submit plans and file an application in compliance with this order.

*Note.*—The elevator manufacturer and architect should cooperate in preparing plans to avoid discrepancy in design. See also order 464—(k).

#### SECTION II. INSPECTIONS.

##### Order 405.—Inspection by Insurance Companies.

The Industrial Commission will accept inspections of insured elevators, dumbwaiters and escalators by inspectors of insurance companies on the following conditions:

(1) Each installation shall be inspected semi-annually, as near as may be, except that in public buildings and places of employment outside the City of Milwaukee which are covered by compensation insurance policies only, an inspection shall be made at least annually.

(2) A detailed report of each inspection shall be filed with the commission within 14 days after inspection on a printed form approved by the Commission. Such report shall show all respects in which the installation fails to comply with the code requirements. If there are any special conditions which, in the inspector's opinion would re-

quire modification of any general order, the facts shall be fully stated in the report, with the inspector's recommendation.

(3) A certificate of inspection on a form approved by the commission shall be posted by the insurance company in a conspicuous place in the elevator car, dumbwaiter cage or escalator, as the case may be, and shall show the date of inspection, name of insurance company, name of inspector, safe carrying capacity (see order 452) and in the case of an elevator, whether steel cables are used. (See order 441).

(4) The insurance company shall use all reasonable diligence to secure compliance with the commission's orders. If unsuccessful, it shall so report to the commission. If it then becomes necessary for the commission to make an inspection, the statutory fee of two dollars for each elevator inspected will be charged. (See order 407).

(5) The competency of each elevator inspector shall be certified by each insurance company to the commission in writing prior to making inspections, and inspections will be approved by the commission only after receipt of acceptable evidence of competency or after a satisfactory examination has been passed.

**Order 406.—Inspection by Cities.**

In the City of Milwaukee, and in any other city which provides a competent elevator inspector, the Industrial Commission will accept inspections by such city, provided the conditions of paragraphs (1), (3), (4) and (5), order 405, are complied with, substituting "city" for "insurance company".

**Order 407.—Inspection Fees.**

A charge of two dollars (Sec. 101.10 subsection 12, Revised Statutes) will be made by the Industrial Commission for each inspection of each elevator except that no charge will be made for the inspection of any new installation made within six months following its completion, provided that notification of the completion of such new installation is given the Industrial Commission prior to the time of placing the installation into regular service. The elevator company or party putting in the installation shall give the Industrial

Commission a reasonable advance notice of the time when such installation will be ready for inspection.

**Note.**—The elevator constructor or representative of the elevator company should be present at the time a new installation is first inspected. A responsible and competent mechanic should accompany the elevator inspector while a periodic inspection is being made.

### SECTION III. TESTS.

#### Order 408.—Tests. New Installations.

A full capacity test shall be made of every elevator and dumbwaiter before being put into regular service.

For test of catching device see order 464.

For test of escalators see order 492.