

Ind 51 to 57

Filed Dec 20, 1960  
11 am

STATE OF WISCONSIN )  
DEPT. OF INDUSTRIAL COMMISSION ) SS.

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETINGS:

I, Helen E. Gill, Secretary of the Industrial Commission, and custodian of the official records of said commission, do hereby certify that the attached amendments regarding Wisconsin Administrative Code - Building Code, were duly approved and adopted by this commission on December 16, 1960.

I further certify that said copy has been compared by me with the original on file in this commission and that the same is a true copy thereof, and of the whole of such original.

IN TESTIMONY WHEREOF, I have here-  
unto set my hand and affixed the  
official seal of the department  
at the Capitol, in the city of  
Madison, this 19th day of  
December, A. D., 1960.

  
Secretary

Pursuant to authority vested in the Industrial Commission by Sections 101.01 - 101.29, Wisconsin Statutes, the Industrial Commission on December 16, 1960 voted to amend the following orders of the Wisconsin Building Code.

Ind 51.24 - Fire alarm systems

*see 88B 1/4/61*

Ind 52.20 - Electrical work

Ind 55.02 - Class of construction

Ind 55.05 - Separation from other occupancies

Ind 55.09 - Stairways

Ind 55.13 - Seating

Ind 56.05 - Exposure and courts

Ind 56.06 - Number, location and type of exits

Ind 56.11 - Floor space and ceiling height

Ind 57.17 - Artificial lighting

*Corrected by Elbig Staty  
1/22/60*

Ind 57.50 - Garages

The orders in the amended form are as follows:

~~AMENDMENTS~~

~~WISCONSIN ADMINISTRATIVE CODE~~

~~BUILDING CODE~~

~~1960~~

Ind 51.24 Fire alarm systems. (1) Interior fire alarm systems required under sections Ind 54.16, Ind 56.19 and Ind 57.22 shall be designed and constructed in conformity with the following requirements:

(2) All such alarm systems shall consist of manual operating stations on each floor of the building, including the basement, with bells, horns, or other approved sounding devices which are effective throughout the building. The system shall be so arranged that the operation of any one station will actuate all alarm devices connected to the system except in the case of a presignal system. Fire alarms shall be readily distinguishable from any other signaling devices used in the building. A system designed for fire alarm and paging service may be used if the design is such that fire alarm signals will have precedence over all others.

(3) Every fire alarm system shall be electrically operated or non-combustible, non-toxic gas activated except as provided in section Ind 56.19. Electrically operated systems shall be operated on closed circuit current under constant electrical supervision, so arranged that upon a circuit opening and remaining open, or in case of a ground or short circuit in the ungrounded conductor, audible trouble signals will be given instantly. Gas activated systems shall be under constant gas pressure, so arranged that in case of a pressure drop an audible trouble signal will be given instantly. All tubing for gas activated systems shall be so arranged that crimping of or complete obstruction within the tubing will immediately give an audible trouble signal if an operating station or device is put out of service. Means shall be provided to test for serious crimping of or complete obstruction within the tubing.

(4) In buildings more than 3 stories in height, coded fire alarm systems shall be provided, and the systems shall be so arranged that the code transmitted shall indicate the location and the story of the structure in which the signal originated. Exception:

(a) In apartment buildings less than 6 stories in height and having less than 5,000 square feet area per floor, non-coded, electrically supervised or supervised non-combustible gas activated, continuous ringing or sounding fire alarm systems will be accepted.

(5) Operating stations shall be prominently located in an accessible position at all required exit doors and required exit stairways. Operating stations shall be of an approved type and shall be conspicuously identified. All such operating stations shall be of a type, which after being operated, will indicate that an alarm has been sent therefrom until reset by an authorized means. (Operating stations having a "Break Glass" panel will be acceptable. On coded systems having a device to permanently record the transmission of an alarm, "Open Door" type stations may be used.) The fire alarm operating stations shall be mounted approximately 5 feet above the finished floor as measured from the floor to the center of the box.

(6) All such alarm systems shall be tested at least once a week and a record of such tests shall be kept.

(7) Existing fire alarm systems that are effective in operation will be accepted if approved by the industrial commission.

(8) The gas for operation of a non-combustible, non-toxic gas activated fire alarm system shall be taken from an approved pressure cylinder on the premises. The cylinder shall have sufficient capacity and pressure to properly operate all sounding devices connected to the system for an interval of not less than 10 minutes. The cylinder shall be removed for recharging immediately after use and shall be replaced by a fully charged cylinder.

(9) A spare cylinder shall be kept on the premises at all times for immediate replacement and separate cylinders for testing shall be incorporated in the system.

(10) Tubing in connection with non-combustible, non-toxic gas activated fire alarm systems shall be installed in rigid metal conduit, flexible metal conduit, or surface metal raceway where subject to mechanical injury. Non-corrosive metallic tubing  $\frac{1}{4}$ -inch in diameter which will withstand a bursting pressure of not less than 500 psi shall be used. The maximum length of  $\frac{1}{4}$ -inch tubing shall not exceed 1,000 feet in any one system. All tubing and other component parts shall be installed by skilled workmen in accordance with the manufacturer's specifications.

Note. The following sections are taken from the Wisconsin state electrical code:

(11) The energy for operation of electrical fire alarm systems shall be taken from sources suited to the design of the system. Primary batteries shall not be used.

(12) A 3-wire 110-220 volt service will be accepted for supervised systems, providing the operating current is secured from one ungrounded conductor and the neutral or grounded conductor and the current for operation of trouble signal or signals is secured from the other ungrounded conductor and the neutral or grounded conductor.

(13) Electrical wiring in connection with fire alarm systems shall be installed in rigid metal conduit, flexible metal conduit, electrical metallic tubing or surface metal raceway. Armored cable (metal) may be used where it can be fished in hollow spaces of walls or partitions in apartments or rooming houses not over 3 stories in height. Where the wiring is subject to excessive moisture or severe mechanical injury, rigid metal conduit shall be used. The smallest size conductor to be used in any fire alarm system in a building over 3 stories in height shall be #14 AWG or #16 AWG for buildings not over 3 stories in height. The wires shall be provided with insulation suitable for use on circuits not exceeding 600 volts. Fire alarm systems shall be connected to the line side of the service switch or to the emergency bus, where available, through an approved fire alarm cutout or equivalent.

Ind 52.20. Electrical work. All electrical work shall conform to the requirements of the Wisconsin state electrical code of the industrial commission.

Note. For the design requirements for transformer vaults, see Chapter E-450 of the Wisconsin state electrical code.

Ind 55.02 Class of construction. (1) The capacities of buildings or parts of buildings in this classification for the various types of construction shall not exceed, and shall comply, with the following requirements:

MAXIMUM CAPACITIES

<u>Type of Construction</u>	<u>With Stage</u>	<u>Without Stage</u>
Fire Resistive - - - - -	No limit	No limit
Mill - - - - -	750	1,500
Ordinary - - - - -	500	1,000
Frame - - - - -	300	750

(a) Exception. The fire protection for structural steel supporting the roof may be omitted in one-story buildings in this classification provided the roof and its supports are of incombustible or mill construction throughout.

(2) Frame construction. Where a building of this classification is erected of frame construction, the following restrictions shall apply:

(a) Not more than one story in height without a balcony and with no basement except a heating and fuel room enclosed with fire resistive construction as specified in section Ind 55.29, with all interior openings protected with self-closing fire-resistive doors as specified in section Ind 51.09.

(b) Located at least 20 feet from any other building or adjoining property line.

(c) Is not built in connection with a building used for any other purpose.

(d) Is provided with foundation walls and piers of masonry construction.

(e) Where motion picture booths are required, they shall be enclosed with ~~2~~ hour fire-resistive construction.

Exception: In places of worship, a full basement and a balcony seating not more than 30 persons may be provided.

(3) Balconies accommodating more than 100. In any theater or assembly hall, balconies which accommodate more than 100 persons shall be of fire-resistive construction as specified in section Ind 51.001.

Ind 55.05 Separation from other occupancies. (1) Every theater and assembly hall shall be separated from any other occupancy by an absolute occupancy separation as specified in section Ind 51.08, except that a special occupancy separation as specified in section Ind 51.08 may be used between an assembly hall accommodating not more than 750 persons and any other non-hazardous occupancy. Where a special occupancy separation is permitted in this ~~order~~, <sup>Section</sup>, a single fire-resistive door may be used for the protection of openings.

(2) For assembly halls of unlimited capacity located on upper floors of fire-resistive buildings which are served by elevators, the elevator openings may be permitted under the requirements for special occupancy separation specified in section Ind 51.08, but otherwise, absolute occupancy separation is required.

(3) Where a garage which is more than 500 square feet in area, chemical laboratory or other occupancy where flammable or explosive liquids or gases are used or stored is built in connection with a building used for a theater or assembly hall 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 wall to adjoining parts of the building shall be protected by means of self-closing fire-resistive doors as specified in section Ind 51.09.

Ind 55.09 Stairways. (1) Every stairway in a theater or assembly hall except stairways from the main floor to the first balcony shall be enclosed as specified in sections Ind 51.17 and Ind 51.18. No storage closet shall be placed under any stairway, platform, or landing.

(a) A room may be placed under a stairway or stair landing of two-hour fire-resistive construction or better provided such room does not have combustible material or hazardous equipment stored or operated therein. All such rooms shall have a ceiling height of not less than 7 feet and the door thereto shall be a self-closing solid flush type wood door 1-3/4 inches in thickness or better.

(2) Stairways and steps which have more than 3 risers shall have handrails on both sides.

(3) Every stairway used by the public in a theater or assembly hall shall have a uniform rise of not more than  $7\frac{1}{2}$  inches and a uniform tread of not less than 10 inches, measuring from tread to tread and from riser to riser. No winders shall be used and there shall be not less than 3 nor more than 16 risers in any run.

Note. See section Ind 51.16 for general stairway requirements.

Ind 55.13 Seating. (1) All seats, chairs and benches shall be placed not less than 32 inches back to back measured horizontally, except that for grandstands and bleachers without back rests this dimension may be reduced to 22 inches. For benches without arms, grandstands, and bleacher seats, the seating capacity shall be established by allowing one sitting or seat to each 18 inches of length. (See section Ind 55.54)

(2) All seats, chairs, and benches, except chairs in boxes or loggias, shall be securely fastened to the floor, or if the floor is level, the seats or chairs may be fastened together in groups of 3 or more. Loose chairs or seats shall not be used unless a special permit is secured from the industrial commission.

(3) There shall not be more than 12 seats in a row between aisles, nor more than 6 seats in a row which has an aisle on one side only except that for grandstands or bleachers without back rests and with a railing along the front, these figures may be doubled. No aisles will be required for such grandstands or bleachers where the seats extend to the floor or ground without a railing along the front.

(a) The number of seats in a row may be increased to 100 where self raising seats are provided which leave an unobstructed passageway between rows of not less than 18 inches in width leading to a side aisle on each side of the auditorium in which exit doorways are located at not more than 20 feet intervals to an exit corridor or exit court.

(4) No seat bench or platform on which seats are placed shall be more than 22 inches in height of riser.

(5) No seat bench, or other platform or floor area on which seats are placed, or the top seat of any bleachers shall be nearer to the ceiling than 8 feet, nor nearer to the bottom of any truss or girder than 6 feet, 4 inches.

(6) The requirements of this order do not apply to restaurants, dining or dance halls.

Ind 56.05 Exposure and courts. No wall containing windows or vision area which light a class, study, recitation room or reading room shall be less than 20 feet away from any opposite building, structure, or lot line or opposite court wall.

Ind 56.06 Number, location and type of exits. (1) The number and location of exits shall be such that in case any exit is blocked at any point some other exit will still be accessible through public passageways, from every room used by the public or by the occupants generally. Except that in a high school, university, college, library or museum building not more than 2 classrooms of ordinary size (900 square feet area) may be placed between an exit and the end of the building, provided that the exit doors from such classrooms are not more than 10 feet beyond the exit.

(a) Exits shall be so distributed that the entrance to any room used for educational purposes will not be more than 100 feet distant from an exit measuring along public passageways.

(2) In buildings of more than one story, there shall be at least 2 stairway exits, each leading directly out of doors. The remaining exits shall be either such stairways or horizontal exits as specified in section Ind 51.19. Where such stairways lead to the basement they shall be enclosed below the first floor as specified in section Ind 51.18.

(3) In buildings of more than 2 stories, all stairways shall be enclosed as specified in sections Ind 51.17-Ind 51.18.

(4) Fire escapes may only be used as exits from the temporary end of incomplete or unit type buildings, as approved in writing by the industrial commission. Such fire escapes shall be of the "B" type where more than 100 persons can be accommodated above the first story.

(5) Handrails shall be provided on both sides of all exit stairs used by pupils.

(6) No storage closet or storage space shall be placed under any stairway, platform or landing. A room may be placed under a stairway or stair landing of two-hour fire-resistive construction or better provided such room does not have any combustible material or hazardous equipment, stored or operated therein. All such rooms shall have a ceiling height of not less than 7 feet and the door thereto shall be a self-closing solid flush type wood door 1-3/4 inches in thickness or better.

Ind 56.11 Floor space and ceiling height. (1) All class and recitation rooms shall have a minimum floor space of 23 square feet per person. Rooms used only for study purposes shall have a minimum floor space of 15 square feet per person.

(2) In colleges or universities, classrooms seated with tablet arm chairs or seats without desks shall have a minimum floor space of 10 square feet per person.

(3) All rooms used for educational purposes shall not be less than 9 feet high in the clear except that school buildings which have a sloping ceiling may have a ceiling height of not less than 8 feet on the low side of the classroom provided the average ceiling height is not less than 9 feet in the clear. Beams, girders, or other structural members spaced not less than 4 feet on centers which support the ceiling construction shall not be less than 7 feet 6 inches above the floor. Toilet rooms, service rooms, store rooms and similar spaces shall not be less than 7 feet 6 inches in the clear.

Ind 56.17 Artificial lighting. (1) Every class, study or recitation room shall be equipped with sufficient electrical lighting units to maintain the illumination required by the School Lighting Code.

(2) 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.

Ind 57.50 Garages. (1) Definitions. (a) A garage is a building, or part of a building, which accommodates or houses self-propelled vehicles. For the purpose of this code the term vehicle includes land, air and water vehicles.

(b) A private garage is one used in connection with a private residence for the purpose of housing self-propelled vehicles owned by the occupant of the residence and used only for personal or family service.

(2) Construction requirements. (a) All garages, except private garages, which are more than 500 square feet in area shall have walls and roof of ordinary construction, as specified in section Ind 51.02, or better, and all floors of vehicle storage rooms, salesrooms, and repair shops shall be of not less than 4-hour fire-resistive construction, as specified in section Ind 51.06.

Exception. 1. A garage not more than one story in height and 2,000 square feet in area may have walls and roof of frame construction if located at least 100 feet from any other building or boundary line between premises.

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 Ind 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 Ind 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.

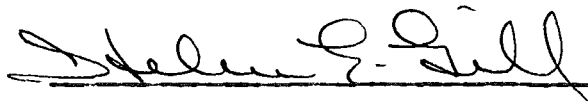
(a) Suspended furnaces and direct fired unit heaters fired with liquid fuel or gas may be used without an enclosure where approved by the industrial commission. Where suspended furnaces or direct fired unit heaters are used without an enclosure, all such units shall be located at least 8 feet above the floor.

(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.

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The amendments will become effective on February 1, 1961

INDUSTRIAL COMMISSION OF WISCONSIN

A handwritten signature in cursive script, appearing to read "Helen E. Gill", is written over a horizontal line.

Secretary

December 19, 1960