Chapter Ind 54

FACTORIES, OFFICE AND MERCANTILE BUILDINGS

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Ind 54.001 Scope. This classification includes all factories and workshops (including all places where manual labor is employed), office buildings, telegraph and telephone offices, mercantile establishments where commodities are bought or sold, taverns, warehouses, railroad stations, exhibition buildings, and places where not more than 100 persons assemble for recreation, entertainment, worship, or dining purposes.

Ind 54.01 Construction, height and allowable area. (1) Buildings in this classification shall be of the type of construction, and shall not exceed the number of stories as specified in this section. The floor area of any such building shall not exceed that permitted for the corresponding type of construction and number of stories.

Types of Construction	Number of Stories	Maximum Floor Areas (Sq. Ft.) When Building Fronts on		
		1 Street	2 Streets	3 or more Streets
Fire-Resistive	No Restrictions			
Mill Construction	6 or 7 stories	6,000	9,000	12,000
	4 and 5 stories	10,000	15,000	18,000
	2 and 3 stories	15,000	18,000	20,000
	1 story	20,000	25,000	30,000
Ordinary Construction	4 stories	6,000	9,000	12,000
	2 and 3 stories	7,500	11,000	15,000
	1 story	12,000	15,000	20,000
Frame Construction	2 stories	5,000	6,000	7,000
	1 story	10,000	12,000	14,000

(2) When the entire building is protected by an automatic sprinkler system, the above areas may be increased 66⅔%. There shall be no area restriction in one story mill constructed buildings protected by an approved automatic sprinkler system. In one story buildings of

ordinary construction, whose contents are incombustible, and whose floors, roofs, and structural framing are of incombustible material there shall be no area restriction.

(3) No building shall be limited in area when divided into sections which do not exceed the maximum areas tabulated in this section by division walls. Such division walls shall have not less than a 4-hour fire-resistive rating as specified in Wis. Adm. Code section Ind 51.05 and shall extend 3 feet above the roof unless the roof is of fire-resistive construction. All openings in such walls shall be protected by fire-resistive doors as specified in section Ind 51.09. Such doors may normally remain open if held in that position by fusible links.

History: 1–2–56; am. (2) and (3), Register, September, 1959, No. 45, eff. 10–1–59.

Ind 54.02 Number and location of exits. (1) Every building and every story thereof shall have at least 2 exits, with the following exceptions:

(a) First and second story storage rooms not over 3000 square feet in area.

(b) The second story of a 2 story building, provided such story is used only for offices; is not over 3000 square feet in area; and has a stairway enclosed with not less than one-hour fire-resistive construction, as specified in section Ind 51.05, leading directly to the outside and not leading to the basement. Such enclosure shall be unpierced except for the entrance and exit doors.

(c) Only one exit will be required for a retail establishment or office occupancy having a floor area of not more than 600 square feet provided the entrance door opens directly to the outside, and no part of the room is more than 50 feet from the exit.

(2) Additional exits shall be provided so that no part of any factory or mercantile building having contents which are liable to burn with extreme rapidity or from which poisonous fumes may be liberated or explosions occur in case of fire, will be more than 75 feet distant from an exit. In other buildings in this classification this distance may be increased to 100 feet and where approved sprinklers are provided throughout the building, a further increase to 150 feet will be permitted. All of the above distances are to be measured along public passageways and aisles.

(3) Exits in all buildings of this classification shall be so located and distributed so as to afford the best possible egress.

History: 1–2–56; cr. (1) (c), Register, September, 1959, No. 45, eff. 10–1–59.

Ind 54.03 Type of exits. (1) At least one-half of the exits above required shall be stairways as specified in sections Ind 51.16–51.18. The other exits shall be either stairways or horizontal exits as specified in section Ind 51.19, or fire escapes as specified in section Ind 51.20. No fire escape, however, will be accepted as a required exit on any building more than 5 stories or 55 feet in height. In a 2 story building, an outside wooden stairway may be used as an exit.

(2) Every building which will accommodate more than 50 persons above the second story shall have at least 2 stairways.

(3) Wherever stairways are required under this classification, ramps with a slope not greater than one foot in 6 feet may be substituted. Ramps shall comply with all the requirements for stairways as to construction, enclosures, width, landing and lighting, and shall be surfaced with an approved non-slip material. Handrails shall not be required where the slope of the ramp is less than one foot in 10 feet.

Ind 54.04 Total width. (1) In a building not provided with horizontal exits, the total width of stairways shall be not less than the following:

(a) In ordinary or frame buildings, 60 inches per 100 persons; if sprinklered, 40 inches per 100 persons.

(b) In fire-resistive and mill buildings:

	Fire-resistive Sprinklered	Fire-resistive not Sprinklered	Mill Sprinklered	Mill not Sprinklered	
---------	30	50	40	60	in. per 100 persons on 2nd floor
plus	15	25	20	30	in. per 100 persons on 3rd floor
plus	12	20	16	24	in. per 100 persons on 4th floor
plus	9	15	12	18	in. per 100 persons on 5th floor
plus	6	10	8	12	in. per 100 persons on 6th floor
plus	3	5	4	6	in. per 100 persons on 7th floor
plus	0	0	0	0	in. per 100 persons on 8th floor and above
	but in no case shall such total width be less than				
	30	50	40	60	in. per 100 persons on any one floor.

(2) Standard fire escapes (section Ind 51.20) may be substituted for stairways to the extent of not more than ⅓ of the required total width, subject to the provision of section Ind 54.02.

(3) If horizontal exits (section Ind 51.19), are provided for any floor, the number of persons accommodated on such floor may be increased at the rate of 100 persons for each 40 inches of width of such exits, provided such increase shall not exceed 100% of the number of persons accommodated by the stairways.

Example: As examples of calculations under this section where the same number of persons are to be accommodated on each floor, the following table shows the number accommodated by 2 stairways of minimum width (each 44 inches wide):

(a) Frame and ordinary buildings, 147 persons total, above first story; if sprinklered, 220 persons.

(b) Fire-resistive and mill buildings:

Height of building	Fire-resistive Sprinklered	Fire-resistive not Sprinklered	Mill Sprinklered	Mill not Sprinklered	
2 stories	293	175	220	147	Persons on each floor
3 stories	195	117	147	98	Persons on each floor
4 stories	154	92	116	77	Persons on each floor
5 stories	133	80	100	67	Persons on each floor
6 stories	122	73	92	61	Persons on each floor
More than 6 stories	117	70	----	----	Persons on each floor

(4) Where one minimum stairway and one "A" fire escape are provided, take ¾ of the above numbers; subject to the limitations of section Ind 54.02.

Ind 54.05 Capacity of buildings. (1) In calculating the aggregate width of exits, the capacity of the buildings shall be established as follows:

(a) Stores, first floor and basement	30 sq. ft. per person
(b) Stores, second floor and above	60 " " " "
(c) Dining rooms, cafes, taverns, etc.	10 " " " "
(d) Places of seated assemblage	7 " " " "
(e) Warehouses	300 " " " "
(f) Factories and offices	75 " " " "

(2) The above figures are based on the net area of each occupied space. Where dining rooms, cafes, dance halls and places of seated assemblage accommodate more than 100 persons, see section Ind 55.01.

(3) In other occupancies not specified above, the capacity shall be determined by the actual number of persons liable to be accommodated therein and no greater number of persons will be permitted therein.

Ind 54.06 Exit doors. (1) Every door which serves as an exit from a room accommodating more than 10 persons, or which is an exit from a public passageway or stairway shall be a standard exit door as specified in section Ind 51.15, except that such exit door need not swing outward if it accommodates less than 25 persons, is not located at the foot of a stairway, or is not more than 4 risers above the outside grade.

(2) Every exit doorway from each floor, other than the principal entrance on the first floor, shall be indicated by an approved illuminated sign over the door bearing the word EXIT or OUT in plain letters not less than 5 inches in height.

Ind 54.07 Passageways. Where there is not direct access to outside exit doors, safe and continuous passageways, aisles or corridors leading directly to every exit shall be maintained at all times on all floors of all buildings. Every passageway, aisle or corridor shall conform in width to the rule for width of stairways as specified in section Ind 54.04. Widths shall be measured in the clear, at their narrowest points produced by any projection, radiator, pipe or other object and the required width shall be maintained clear and unobstructed at all times.

Ind 54.08 Enclosure of stairways and shafts. (1) All stairways, ramps and elevator shafts in buildings 3 or more stories in height, including landings shall be enclosed as follows:

(a) Fire-resistive buildings, not less than 2-hour fire-resistive construction as specified in section Ind 51.05.

(b) Mill constructed buildings, not less than 2-hour fire-resistive construction as specified in section Ind 51.05.

(c) Ordinary constructed buildings, not less than one-hour fire-resistive construction as specified in section Ind 51.05.

(d) Frame constructed buildings, not less than one-hour fire-resistive construction as specified in section Ind 51.05.

(2) All doors opening into such enclosures shall be as specified in section Ind 51.09, and all windows shall be of wired glass and metal frames and sash.

(3) *Exception:* Monumental stairs leading from the street floor to the second floor or to a basement used for commercial purposes need not be enclosed, provided they are effectively cut off at the second floor (and basement) by partitions having fire-resistance as specified above.

Note: **Elevators and Elevator Enclosures:** For requirements governing the installation and operation of elevators, and the construction and protection of elevator shaftways, see the elevator code issued by the department of industry, labor and human relations, which code applies to all public buildings and places of employment.

Ind 54.09 Opening to roof. Every building, or section of a building, 2 stories or more in height shall have a permanent means of access to the roof from the inside. Where such access consists of a scuttle in the roof, the opening shall be not less than 20 by 30 inches and there shall be a permanent ladder or stairway leading thereto.

Ind 54.10 Trap doors and floor openings. Every opening through any floor or through any roof used by the public or by employes shall be guarded by a substantial enclosure or rail not less than 3 feet 6 inches high. Floor openings in buildings of more than 2 stories, unless enclosed with fire-resistive enclosures as specified in section Ind 54.08 shall be protected by fire-resistive doors as specified in section Ind 51.09.

Ind 54.11 Lighting. (1) All stairways, fire escapes and exits and the passageways leading thereto when used at night shall be properly illuminated to facilitate egress. The intensity of illumination shall be not less than 2.5 foot candles.

(2) All gas jets or gas lights in factories or workshops where combustible material is used, shall be properly enclosed by globes or wire cages, or otherwise properly guarded.

Ind 54.12 Sanitary equipment. (1) Toilet facilities shall be provided and maintained in connection with every public building and place of employment under this classification.

(2) In all public buildings under this classification, separate toilet rooms shall be provided for males and females, except as in section Ind 52.51 and as otherwise provided hereunder.

(3) In public places where stimulating drinks, such as beer, wines and other alcoholic beverages, are served for consumption on the premises, except in dining rooms, restaurants and similar places where the serving of drinks is only incidental to the regular food service, and where no public bar is provided, toilet fixtures shall be provided in connection with the area served, for the sex (or sexes) served, as follows:

(a) One water-closet for every 40 females, or fraction thereof;

(b) One water-closet for every 75 males, or fraction thereof, and

(4) Where there are more than 25 males accommodated there shall be one urinal for every 50 males, or fraction thereof, in excess of 25.

(5) The numbers indicated above refer to the number of persons that can be accommodated at the same time and shall be determined on the basis specified in section Ind 54.05.

(6) In toilet rooms used by males, all water-closets shall have an elongated bowl and open front seat without cover. All urinals shall be of the type of construction specified in section Ind 52.60. Where a urinal is not provided, the water-closet shall have an elongated bowl with self-rising seat. In toilet rooms used by females, all water-closets shall have an elongated bowl and open front seats without cover.

(7) In public occupancies other than those where stimulating drinks (as defined above) are served for consumption on the premises, one water-closet of the type described above shall be provided in connection therewith for each sex accommodated. Except that a small mercantile establishment where normally not more than 25 patrons are expected to be on the premises at the same time, need have in connection therewith only one toilet room to accommodate both the public and employes.

(a) *Toilets in places of employment.* See section Ind 22.03 of the general orders on sanitation following this section.

(b) *General requirements.* For general toilet room requirements in regard to location, construction, ventilation, fixtures, etc., see sections Ind 52.50 to Ind 52.64, inclusive.

(8) Where toilet rooms used by males and females adjoin, the walls between such toilet rooms, if of studding with lath and plaster, the lath shall be of metal.

(9) DRINKING WATER. Sufficient pure drinking water piped from mains, or in sanitary containers, shall be provided in connection with every public building under this classification. Drinking fountains separate from other fixtures and constructed as provided in the state plumbing code, or individual drinking cups of a type approved by the state board of health, shall be provided, except in places where food or drink is served and in public buildings where normally not more than 25 patrons are expected to be on the premises at the same time. Drinking fountains shall not be placed in toilet rooms.

(a) For drinking water requirements in places of employment see section Ind 22.17 of the general orders on sanitation following this section. See also section 146.07, Wis. Stats., which prohibits the use of common drinking cups.

(10) WASHING FACILITIES. In every public building and in every place of employment, except as provided in section Ind 22.13, wash bowls shall be provided in connection with toilet rooms, one for every 2 water-closets or urinals, or fraction. Clean individual cloth or paper towels and soap shall be provided in connection with every lavatory installation. The installation of a towel for common use, or the use of any common towel is not permissible.

See also sections Ind 22.13 to Ind 22.15, inclusive.

History: 1–2–56; am. (3) (a) and (b) and (6), Register, September, 1959, No. 45, eff. 10–1–59.

Note: The following sections, Ind 22.03, Ind 22.13, Ind 22.14, Ind 22.15 Ind 22.17, and Ind 22.18 are taken from the general orders on sanitation issued by the department of industry, labor and human relations. For further requirements on sanitation, see that publication.

Ind 22.03 Number of closets and urinals. (1) In every place of employment, whether heretofore or hereafter constructed, one water-closet shall be provided for every 20 persons, or fraction thereof, of either sex.

(2) In addition thereto, where more than 10 males are employed, one urinal shall be provided for every 40 males, or fraction thereof. Where not more than 10 males are employed, either a urinal shall be provided or the water-closet shall have an elongated bowl and self-rising seat.

(3) The requirements in subsections (1) and (2) shall be computed on the basis of the maximum number of employes on any one shift.

(4) In all new installations, only individual urinals shall be used. Such individual urinals shall be of porcelain, vitreous china, or stainless steel, set into the floor, the floor graded to the urinal, and shall be equipped with an effective automatic tank or valve or a satisfactory foot operating flushing device.

(5) All water-closets hereafter installed shall be of the individual type having elongated bowls and open front seats.

Ind 22.13 Lavatories; location. Washing facilities shall be provided in or adjacent to every toilet room. In new installations, there shall be at least one lavatory for every 5 fixtures (closets and urinals), or fraction.

Cross reference—See section Ind 22.14 for additional requirements for places of employment.

See section Ind 22.14 on material from which lavatories shall be made and for allowable types of installations.

Note: One lavatory for every 2 or 3 fixtures is recommended.

Ind 22.14 Washing facilities for places of industrial employment. (1) LAVATORIES. (a) There shall be at least one lavatory supplied with hot and cold water provided for every 10 employes or fraction in the following places of employment:

1. In all places of employment where lead, arsenic or other poisonous or injurious materials are handled by the employes.
2. In all places of employment where food is prepared or manufactured.
3. In all other places of employment where the employes' hands become dirty or greasy.

(b) Wash rooms shall be constructed according to the requirements for toilet rooms.

(c) Twenty inches of trough wash sink, or of the edge of a circular wash fountain shall be considered the equivalent of one lavatory. The trough wash sink or circular wash fountain shall not be equipped with a plug or other stopper. Each lavatory and each 20 inches of trough wash sink shall be equipped with either a faucet or spray pipe, so connected as to supply water of the desired temperature.

(d) All lavatories shall be made of porcelain, enameled iron, or other similar impervious material.

(2) SHOWERS. Shower facilities shall be provided in accordance with the following requirements:

(a) In places of employment where poisonous or irritating materials which penetrate the clothing are handled at least one shower shall be provided for every 10 employes or fraction who handle or come in contact with such materials.

(b) In glue factories, tanneries, foundries, mines, and other places of employment where materials which penetrate the clothing are handled at least one shower for every 20 such employes, or fraction, shall be provided.

(c) Showers shall be provided with hot and cold water and be equipped with a hot and cold regulating valve. The regulating device or valve shall be plainly marked and shall be so located that the valve can be operated without standing under the shower. Supply or feed pipes to showers shall be placed overhead or protected to avoid the possibility of a person coming in contact with the hot water pipes.

(d) Each shower room or compartment shall be constructed of material impervious to moisture, and the floor under each shower head shall be of such construction, or be provided with a suitable sanitary device, so as to prevent slipping.

(3) SOAP. For all hand washing facilities in places of employment, an adequate quantity of bland, non-irritating, non-abrasive soap which shall effectively cleanse the skin shall be provided.

Ind 22.15 Towels. In all places of employment, the use of towels in common is prohibited. Where hand washing facilities are required, individual cloth towels, magazine type roll cloth towels, or paper towels shall be furnished by the employer. Electric hand dryers may be used if approved by the industrial commission.

Ind 22.17 Drinking water. (1) Every place of employment shall be supplied with sufficient pure drinking water and the faucets or outlets for the same shall be placed convenient to the employes, but not in toilet rooms. Common drinking cups are prohibited. Sanitary drinking fountains shall be installed or individual cups shall be provided by the employers.

Cross reference—See the state plumbing code for required construction of sanitary drinking fountains.

(2) Where running water is not available, a covered drinking water container equipped with a faucet or bubbler shall be provided. The container shall be cleaned and sterilized at frequent intervals and kept in a sanitary condition and in good repair.

Ind 22.18 Rest rooms. (1) A rest room shall be provided at the principal place of business (owned, leased, or rented), where 5 or more persons are employed.

(2) Rest rooms shall be furnished with a cot or couch, and shall be lighted, heated and ventilated in accordance with the applicable standards published in Wisconsin administrative codes.

(3) A toilet room shall not, under this rule, be construed to be nor may it serve as a rest room. A first aid room may serve as a rest room.

History: 1–2–56; r. and recr. Register, August, 1967, No. 140, eff. 9–1–67.

Ind 54.13 Isolation of hazards. (1) All heating boilers and furnaces, power boilers, fuel rooms, storage vaults for paints, oils, and similar combustibles and other similar hazards in a building shall be isolated from the rest of the building by at least a 2-hour fire-resistive enclosure as specified in sections Ind 51.05 and Ind 51.06; except that in buildings not more than 2 stories in height and having a floor area of not more than 3000 square feet per floor, a one-hour fire-resistive enclosure as specified in sections Ind 51.05 and Ind 51.06, or better, shall be provided.

(2) All openings shall be protected with self-closing fire-resistive doors as specified in section Ind 51.09.

(3) Space heaters, suspended furnaces, and direct-fired unit heaters, fired with various fuels, may be used without an enclosure where approved by the department of industry, labor and human relations. Where suspended furnaces and direct fired unit heaters are used without an enclosure, all such units shall be located at least 7 feet above the floor.

Ind 54.14 Standpipes and fire extinguishers. (1) For exterior standpipes see section Ind 51.21.

(2) Standard interior first aid standpipes, as specified in section Ind 51.21 shall be provided in all buildings of more than 2 stories and more than 3000 square feet undivided floor area, where flammable material or any other hazardous condition is present, unless an approved automatic sprinkler system is provided.

(3) Wherever water supply of sufficient pressure is not available, 2 standard fire extinguishers as specified in section Ind 51.22 shall be provided on each floor in place of each required interior standpipe.

Ind 54.15 Automatic sprinklers. (1) A complete automatic sprinkler system, as specified in section Ind 51.23, shall be provided in every building of this classification, except office buildings not used for mercantile purposes, where more than 50 persons are employed or accommodated above the third story except as provided below.

(2) In every such building where more than 50 persons are employed or accommodated above the second story, an automatic sprinkler system shall be provided in the basement and sub-basements, except where there is no city water supply.

(3) An office building in which one or more of the lower floors is used for mercantile purposes, shall be classed as a mercantile building, except that no sprinklers will be required in such portions of the building as are used for offices only.

(4) No sprinklers will be required in a building of fire-resistive construction whose contents are not readily combustible.

Ind 54.16 Fire alarm. A fire alarm system complying with section Ind 51.24 shall be provided in every factory or workshop where more than 10 persons are employed above the second story except buildings which are provided with a complete automatic sprinkler system and except fire-resistive buildings whose contents are practically incombustible.

Ind 54.17 Floor load signs. (1) In every factory, workshop, warehouse, or other building where material is piled, notices of a permament character shall be painted or otherwise prominently displayed, stating the live load in pounds per square foot which the floor is designed to carry. Such notices shall be placed in full view, on each floor.

(2) Where floors are always used for the storage of some particular material, the walls shall be marked to the height to which the material shall be piled without exceeding the safe load.

Ind 54.18 Signs indicating number of persons. In all buildings of this classification where 50 or more persons are accommodated on any floor above the second, notices shall be prominently displayed stating the maximum number of persons on each floor for whom stairways and other exits have been provided according to sections Ind 54.02–Ind 54.06. Such notices shall be placed in full view, on each floor.

Ind 54.19 No smoking signs. Smoking shall not be permitted in retail establishments where flammable materials are handled or sold. Suitable signs bearing the words "No Smoking" shall be erected in all places where such hazard exists.

Ind 54.20 Tents. All tents used for sales or storage purposes shall conform to the requirements specified for tents in sections Ind 55.58–Ind 55.63, inclusive, of this code.

History: Cr. Register, September, 1959, No. 45, eff. 10–1–59.