

**Wisconsin  
Administrative Code**

**Rules of  
INDUSTRY, LABOR AND  
HUMAN RELATIONS**

**EXISTING BUILDINGS**

**Cite the rules in this Code as**

**(for example)**

**section Ind 160.01 Wis. Adm. Code**

**INDUSTRY, LABOR AND HUMAN RELATIONS**

**201 East Washington Avenue**

**Madison, Wisconsin 53702**

# INTRODUCTION

## Purpose and Structure

The legislature, by section 35.93 and chapter 227, Wis. Stats., 1955, directed the publication of the rules of administrative agencies having rule-making authority in a loose-leaf, continual revision system known as the WISCONSIN ADMINISTRATIVE CODE. The code is kept current by means of new and replacement pages. The pages are issued monthly, together with notices of hearings on proposed rules, emergency rules, new rules, instructions for inserting of new material, and other pertinent information. This monthly service is called the WISCONSIN ADMINISTRATIVE REGISTER, and comes to the subscriber after the 25th of each month.

## Availability

The complete code and the upkeep service are distributed to the county law libraries; to the libraries of the University of Wisconsin Law School and Marquette University Law School; to the State Historical Society; to the Legislative Reference Bureau and to the State Law Library, and to certain designated public libraries throughout the state.

The sale and distribution of the code and of its parts is handled by Department of Administration, Document Sales and Distribution, 202 S. Thornton Ave., Madison, Wisconsin 53702.

## History Notes

Each page of the code as it was originally filed and printed pursuant to the 1955 legislation, is dated "1-2-56". A rule which is amended or created subsequent to the original printing date is followed by a history note indicating the date and number of the REGISTER in which it was published and the date on which the amendment or the rule became effective. The absence of a history note at the end of a section indicates that the rule has remained unchanged since the original printing in 1956. The date line at the bottom of the page indicates the month in which the page was released.

In some instances an *entire* code has been repealed and recreated subsequent to the original printing date. When this occurs a history note has been placed at the beginning of the chapter to contain this information. A separate history note appears after each section indicating the date when the revision became effective.

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## Chapter Ind 160

## DEFINITIONS AND GENERAL REQUIREMENTS

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**Note #1:** The word "department" referred to in these orders means the department of industry, labor and human relations.

**Note #2:** The Wisconsin state codes (building code; heating, ventilating and air conditioning code; and electrical code) referred to in these orders means the codes for the year 1956.

**Ind 160.001 Buildings affected by these orders.** (1) These orders shall apply to all buildings and structures erected prior to the effective date of the first building code (October 9, 1914) except:

(a) Private residences, and outbuildings in connection therewith such as barns, garages, etc.

(b) Flat buildings used as the residence of 2 families only, provided not more than 2 persons are accommodated who are not members of the family.

(c) Buildings used for agricultural purposes which are not within the corporate limits of a city or village.

(d) Temporary buildings or sheds used for construction purposes only.

(2) Provided, however, that if any building or structure, whether above exempted or not, is especially liable to fire, and is so situated as to endanger other buildings or property; or contains any combustible or explosive material dangerous to the safety of any building or premises or the occupants thereof, or endangering or hindering firemen in case of fire; then such building or structure shall be subject to these orders so far as may be necessary to protect adjoining or other buildings and their occupants, and firemen.

(3) Provided further, that in the case of buildings which are subject to the requirements of the state building code, the requirements of the building code shall govern.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.01 Local regulations.** These orders shall not be understood to limit the power of cities, villages and towns to make or enforce additional or more stringent regulations, provided the same do not conflict with these orders, or with any other order of the department.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.02 Fire-resistive construction.** A building is of fire-resistive construction if all the walls, partitions, piers, columns, floors, ceilings, roof and stairs are built of incombustible material, except as hereinafter provided, and if all metallic structural members are protected by an incombustible fire-resistive covering.

**Note:** See section Ind 51.001 of the Wisconsin state building code for detailed requirements for fire-resistive construction.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.03 Mill construction.** A building is of mill construction if all walls are of 4-hour fire-resistive construction as specified in section Ind 51.01 of the state building code; all wood girders and joists are at least 5½ inches thick; wood columns and posts are at least 7½ x 7½ inches; floors are at least 3 inches thick; the roof has an incombustible roof covering, and there are no concealed air spaces except such as are enclosed by incombustible material.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.04 Ordinary construction.** A building is of ordinary construction if all walls consist of incombustible material, the roof has a fire-retardant covering, but other requirements for fire-resistive or mill construction are not complied with.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.05 Frame construction.** A building is of frame construction if the structural parts and enclosing walls consist of wood. If such enclosing walls are veneered, encased or faced with stone, brick, tile, concrete, plaster, or metal, whose stability or rigidity depends upon the frame wall, the building is also termed a frame building.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.06 Basement; first floor; number of stories.** A basement is a story whose floor line is below the grade at any entrance or exit and whose ceiling is not more than 5 feet above such grade. The first floor is the floor next above the basement, or the lowest floor if there is no basement. The number of stories of a building includes all stories except the basement.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.07 Fire retardant roof covering.** A roof covering is considered fire retardant if made of 3 thicknesses of roofing felt with tar and gravel or asphalt or if made of tin, corrugated iron, galvanized iron, or other approved fire-resistive material.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.08 Fire-resistive enclosure or partition.** A fire-resistive enclosure or partition shall be of 4-hour, 3-hour, 2-hour, or one-hour construction as may be required by this code under occupancy requirements and as described in section Ind 51.05 of the state building code.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

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**Ind 160.09 Fire-resistive door.** A fire-resistive door shall consist of a wooden core not less than  $1\frac{1}{2}$  inches thick encased with metal using locked seam joints, or shall be entirely of metal and of a design approved by the department. The door frame shall be of metal or shall be metal covered. The door shall close automatically in case of fire.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.10 Fire-resistive window.** A fire-resistive window shall have a metal frame, metal sash and wired glass, of a design approved by the department. No pane shall be less than  $\frac{1}{4}$  inch thick nor of greater area than 720 square inches. The window shall be fixed or shall close automatically in case of fire.

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

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.11 One-hour fire-resistive ceiling.** A one-hour fire-resistive ceiling shall be constructed of not less than  $1\frac{5}{8}$  inch joists, spaced not more than 16 inches center to center, protected on the under side by metal or wire lath and  $\frac{3}{4}$  inch of gypsum or Portland cement plaster or by  $\frac{3}{8}$  inch perforated gypsum lath and  $\frac{1}{2}$  inch of gypsum plaster, the joints of the lath to be reinforced with 3 inch wide strips of metal lath. Other materials and methods of construction having an equivalent fire-resistive rating may be used if approved by the department, as specified under section Ind 50.12 of the state building code.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.12 Horizontal exit.** (1) A horizontal exit is either (a) an opening through a fire-resistive wall or partition, (section Ind 160.08) which separates 2 buildings or 2 divisions of a building; every such opening shall be protected by a fire-resistive door on each side of the wall; or,

(b) an exterior balcony or bridge which connects 2 buildings or 2 divisions of a building. Every such balcony or bridge, including its railings, its supporting brackets or beams, and the exits thereto, shall be constructed the same as specified for fire escapes, (section Ind 160.14-Ind 160.22); but a bridge may be built of wood if it is enclosed by walls and a roof and if it is separated from each building by a fire-resistive door. The floor shall not have a slope of more than one foot in five.

(2) If a horizontal exit takes the place of an "A" type standard fire escape, it shall be at least 2 feet 4 inches wide; if it takes the place of a "B" type standard fire escape, it shall be at least 3 feet 4 inches wide.

(3) The floor on each side of a horizontal exit shall contain at least one stairway and all passageways leading thereto shall be kept clear and unobstructed at all times.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.13 Fire escapes; location.** Every fire escape shall be so located as to lead directly to a street, alley, or open court connected

with the street. Every fire escape shall be placed against a blank wall if possible.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.14 Exits to fire escapes.** Every fire escape shall be accessible from a public passageway or shall be directly accessible from each occupied room. Each exit to a "B" type fire escape shall be a standard exit door (section Ind 160.24) at least 3 feet 4 inches in width, and the door sill shall be flush with the floor inside. Each exit to an "A" type fire escape shall be a standard exit door at least 2 feet 6 inches in width and the door sill shall be not more than 8 inches above the inside floor level, unless a stair leads from the floor to the sill, or windows may be used in place of such door if approved by the department.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.15 Material and strength.** (1) No other material than wrought iron or soft or medium steel shall be used for any part of a fire escape except for weights, separators, and ornaments.

(2) No bar material less than  $\frac{1}{4}$  inch thick shall be used in the construction of any fire escape, except for separators, ornaments, structural shapes over 3 inches and rigidly built up treads and platforms of approved design. All bolts and rivets, except for ornamental work, shall be not less than  $\frac{3}{8}$  inch in diameter.

(3) Each part of every fire escape (except counterweights for balanced stairways) shall be designed and constructed to carry a live load of 100 pounds per square foot of horizontal area over the entire fire escape. The minimum sections and sizes specified below shall be increased whenever necessary so that under full load the unit stresses will not exceed three-fourths of the allowable unit stresses specified in section Ind 53.24 of the state building code.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.16 Platforms.** (1) Each platform of an "A" type fire escape shall be at least 28 inches wide; each platform of a "B" type fire escape shall be at least 3 feet 4 inches wide. Such widths shall be the clear distance between stringers, measuring at the narrowest point. Each platform shall extend at least 4 inches beyond the jams of exit openings. The above minimum widths and lengths shall be increased wherever necessary, so that no exit door or window will, when open, block any part of the required width of the fire escape.

(2) Every platform shall consist of either

(a) Flat bars on edge, not less than  $1 \times \frac{1}{4}$  inch; but not less than  $1\frac{1}{4} \times \frac{1}{4}$  inch where bolts and separators are used; bars shall be not more than  $1\frac{1}{4}$  inches center to center.

(b)  $\frac{1}{2}$  inch or  $\frac{5}{8}$  inch square bars with sharp edge up, not more than  $1\frac{1}{2}$  inches center to center.

(c)  $\frac{5}{8}$  inch round bars, not more than  $1\frac{1}{2}$  inches center to center.

(3) Platform and treads may be solid if covered by a roof.

(4) The platform frame shall consist of not less than  $2 \times \frac{3}{8}$  inch flat bars on edge or equivalent, provided the brackets are not more than 4 feet apart. If brackets are more than 4 feet apart, the frame shall be correspondingly stronger and stiffer. Every platform wider than 30 inches, if made of square or round bars, shall have a third

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frame bar through the center; if made of flat bars, the platform shall have separators and bolts through the center. Frame bars shall not project more than  $\frac{1}{4}$  inch above platform bars, except around the outside of platform.

(5) There shall be a platform at each story above the first and intermediate platforms if floors are more than 18 feet apart vertically.

(6) Platforms shall not be more than 8 inches below the door sill, or not more than 18 inches below the sill of exit windows; see section Ind 160.14.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.17 Brackets.** (1) Brackets for a 28 inch or 30 inch platform, when spaced not more than 4 feet apart, shall be made of not less than  $\frac{3}{8}$  inch square bars or  $1\frac{1}{2} \times 1\frac{1}{2} \times \frac{1}{4}$  inch angles; such bars or angles shall be larger if the platform is wider or if the brackets are farther apart. Each bracket shall be fastened at the top, to the wall, by a through bolt (at least  $\frac{3}{8}$  inch diameter), nut, and washer (at least 4 inch diameter). The slope of the lower bracket bar shall be not less than 30 degrees with the horizontal. The lower bar shall have a washer or shoulder to give sufficient bearing against the wall.

**Notes:** In applying the requirements of the building code to the design of a bracket, the lower bracket bar must be designed according to the column formula. According to this formula (for example), brackets made of 1 inch square wrought iron, 4 feet apart, carrying a 3 feet 4 inches platform, are just within the limit of stiffness. If the brackets were over 4 feet apart, a heavier bar or an angle would have to be used.

(2) The strength of the wall to which brackets are to be attached shall be carefully considered in determining the spacing, shape, and inside connection of brackets, so that under full load the wall will not be unduly strained.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.18 Stairways.** (1) Each stairway of an "A" type fire escape shall be at least 24 inches wide between stringers; such stairway shall have a uniform rise of not more than 8 inches, and a uniform run of not less than 8 inches.

(2) Each stairway of a "B" type fire escape shall be at least 3 feet 4 inches wide between stringers; such stairway shall have a uniform rise of not more than 8 inches, and a uniform run of not less than 9 inches.

**Notes:** The rise is the vertical distance from the extreme edge of any step to the corresponding extreme edge of the next step. The run is the horizontal distance between the same points.

(3) Stairway stringers shall consist of either

(a) A 5 inch channel or larger.

(b) Two angles  $2 \times 2 \times \frac{1}{4}$  inch or larger.

(c) Two flat bars  $2 \times \frac{3}{8}$  inch or larger.

(d) One flat bar  $6 \times \frac{1}{4}$  inch or larger.

(4) If 2 angles or 2 flat bars are used, they shall be properly tied together by lattice bars, vertical as well as horizontal. If flat bars are used, every stairway of more than 10 risers shall have lateral bracing. The connection of stringers to platform, at top and bottom, shall be at least equal in strength to the stringers and shall safely carry the full live and dead loads. If stringers are carried by intermediate brackets, the stringers shall have a horizontal bearing on the brackets and shall be properly and securely connected thereto.



(5) Treads shall consist of either flat or square bars, (not round), of the size and spacing specified for platforms. An "A" tread shall consist of at least 6 square bars or 7 flat bars. A "B" tread shall consist of at least 7 square bars or 8 flat bars. A "B" tread made of flat bars shall have separators and bolt through the center. A "B" tread made of square bars shall be trussed.

Treads and platforms may be solid if covered by a roof.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.19 Balanced stairway.** (1) All "B" type fire escapes, and all fire escapes on schools, theaters, and assembly halls, either shall reach to the ground or shall have a balanced stairway reaching to the ground. "A" type fire escapes which are not on schools, theaters, or assembly halls, may terminate on a platform at least 3 feet long, located not more than 10 feet above the ground.

(2) Every balanced stairway shall conform to the requirements for other stairways except that the stringers and the top rail may be lighter if they are properly trussed. The counterbalancing device shall be attached to both sides of the stairway equally, or a special attachment shall be used to prevent warping or twisting. The counterbalancing device shall operate gradually and easily as the live load is applied.

**Note:** The use of cables and sheaves will be permitted only under exceptional conditions, as rust is almost sure to interfere with their proper operation. In such cases the sheaves shall turn on a brass pin or in brass bearings and shall be protected from the weather at the top and on all sides.

(3) Treads for "A" type balanced stairways may be made as follows: two  $1\frac{1}{4} \times 1\frac{1}{4} \times \frac{1}{4}$  inch angles at front and back; two  $1\frac{1}{4} \times \frac{1}{4}$  inch bars between, lying flatwise; one inch space between bars. Treads for "B" type balanced stairways may be made as follows: two  $1\frac{1}{2} \times 1\frac{1}{2} \times \frac{1}{4}$  inch angles at front and back; two  $1\frac{1}{2} \times \frac{1}{4}$  inch bars between, lying flatwise; one inch space between bars. All such treads shall be strongly fastened together with cross bars not more than 14 inches apart.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.20 Railings.** (1) Railings shall be provided on all open sides of platforms and stairways, and on both sides of balanced stairways. Either a railing or a handrail fastened to wall shall be provided on each side of all "B" type fire escape stairways. Railings shall be at least 3 feet high, measuring vertically from floor of platform or from nose of step.

(2) Every railing shall have posts, not more than 5 feet apart, made of not less than  $1\frac{1}{2} \times 1\frac{1}{2} \times \frac{1}{4}$  inch angles or tees, or  $1\frac{1}{4}$  inch pipe; top rail not less than  $1\frac{1}{4} \times 1\frac{1}{4} \times \frac{1}{4}$  inch angle or equivalent; center rail not less than  $1\frac{1}{4} \times 5/16$  flat bar or equivalent. All connections shall be such as to make the railing stiff; 2 bolts ( $\frac{3}{8}$  inch or larger) shall be used at the foot of each post wherever possible, or at least one  $\frac{1}{2}$  inch bolt shall be used. Railings shall be continuous. No projections on the inside of the railing shall be permitted. Where a railing returns to the wall, it shall be fastened thereto with a through bolt (at least  $\frac{5}{8}$  inch diameter), nut, and washer; or (in reinforced concrete) with an approved insert; or the railing shall be made equally secure with a diagonal brace extending at least 3 feet horizontally and 3 feet vertically.

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(3) All outside railings which are more than 60 feet above grade shall be at least 6 feet high, measuring vertically from floor of platform or from nose of step. Such railings shall be of special design approved by the department, having not less than 4 longitudinal rails, and vertical lattice bars not more than 8 inches apart, and proper stiffening braces or brackets.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.21 Ladder to roof.** (1) Every fire escape which extends higher than the second floor shall be provided with a ladder leading from the upper platform to the roof, unless the fire escape stairway leads to the roof. The ladder shall have stringers of not less than 1½ inch pipe, or not less than 2 x ¾ inch flat bars, at least 17 inches apart in the clear. The rungs shall be not less than ½ inch square or ⅝ inch round bars, 14 inches center to center. The stringers shall be securely tied together at intervals no greater than every fifth rung.

(2) The stringers of each ladder shall extend not less than 4 feet above the roof coping and return to within 2 feet of the roof with the top rung of the ladder level with the top of the parapet wall.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.22 Standpipe.** (1) A standpipe shall be attached to every fire escape on every building of more than three stories not having an automatic sprinkler system; except that buildings requiring more than one fire escape on any side thereof, shall be provided with at least one standpipe on each side.

(2) Every standpipe shall extend from a point within 5 feet of the ground to a point 3 feet above the roof or cornice, and shall be securely fastened to and accessible from each platform. The standpipe shall be made of not less than 3 inch wrought iron pipe, with 2½ inch outlet hose valve at each floor and at roof, and a double Siamese valve at the base of the pipe. All connections shall conform to the size and patterns used by the local fire department, and the entire standpipe shall conform to all requirements of such department.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.23 Other types of fire escape.** Sliding or chute fire escapes may be used, upon the approval of the department, in place of "A" type or "B" type fire escapes. Every sliding fire escape shall be provided with a ladder constructed as in section Ind 160.21, extending from 5 feet above grade, to 4 feet above the roof coping.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.24 Standard exit doors.** (1) Every door which serves as a required exit from a public passageway, stairway or building, or which forms a horizontal exit, shall be a standard exit door. See also sections Ind 161.06, 162.06, 163.04, 164.07.

(2) Every standard exit door shall swing outward or toward the natural means of egress (except as below and as in section Ind 164.07). It shall be so hung that, when open, it will not block any part of the required width of any other doorway, passageway, stairway, or fire escape. No revolving door (unless collapsible) and no sliding door, (except where it opens onto a stairway enclosure, or serves as a

horizontal exit) shall be considered as a standard exit door. Where revolving doors are used, they shall be of a type and make approved by the department.

(3) A standard exit door shall have such fastenings or hardware that it can be opened from the inside without using a key, by pushing against a single bar or plate, or turning a single knob or handle; it shall not be locked, barred, or bolted at any time while the building is occupied.

*Note:* For theaters, schools, large factories and hotels, etc., the "panic bolt" which operates by pressure against a bar or plate is recommended.

(4) An approved type, illuminated, transparent exit sign shall be provided and operated over all exit doors in accordance with sections Ind 161.06, 162.14 and 164.08. Exit lights shall be installed as required by the Wisconsin state electrical code.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.25 Location and maintenance of exits.** Every required exit (including stairways, fire escapes, horizontal exits, and doors) shall lead to a street, alley or open court connected with a street. All such exits, and all passageways leading to and from the same, shall be kept in good repair and unobstructed at all times.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.26 First aid standpipes.** (1) For the number and location of first aid standpipes required in buildings of various classes, see sections Ind 161.09, 163.07.

(2) Standpipes shall be sufficient in number so that any part of every floor area can be reached within 20 feet by a nozzle attached to not more than 75 feet of hose connected to a standpipe.

(3) No required standpipe shall be less than 2 inches in diameter, and not less than 2½ inches in diameter for buildings 5 stories or more in height. An approved 1½ inch hose valve shall be located in each story, not more than 5 feet above the floor level; valves of the gate type shall be equipped with a suitable open drip connection. An approved pressure-reducing device shall be installed at hose valves where pressure would otherwise be over 50 pounds.

(4) Not more than 75 feet of hose shall be attached to each outlet. Hose shall be of unlined linen construction, 1½ inches in diameter, with a ½ inch nozzle attached, and shall be located in approved cabinets or racks.

(5) Water supply shall be automatic, and be designed for 70 gallons per minute for 30 minutes with 25 pounds flowing pressure at the top outlet. Such supply may be from city connection, gravity tank, pressure tank or pump.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.27 Fire extinguishers.** (1) Where fire extinguishers are required, they shall be of a type approved by the department. All fire extinguishers shall be charged in accordance with the instructions of the manufacturer.

(2) Extinguishers shall be conspicuously located where they will always be readily accessible and so distributed as to be immediately available in event of fire. They shall be hung on hangers or set on

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brackets or shelves so that the top of the extinguisher is not more than 5 feet above the floor.

*Note:* The department will ordinarily approve any installation which is approved by the National Board of Fire Underwriters.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.28 Automatic sprinklers.** (1) Required automatic sprinkler systems shall be designed and constructed in conformity with good established practice. Only materials and devices approved by the department may be used. Re-installation of used sprinkler heads is prohibited, and other second hand devices may be installed by special permission only.

(2) Where an automatic sprinkler system is required throughout a building, supply shall be from a city water main, or from a gravity or pressure tank. If the city water supply is inadequate in either pressure or volume, a tank of not less than 5,000 gallons capacity shall be provided. The bottom of a gravity tank shall be not less than 35 feet above the under side of the roof.

(3) Where automatic sprinklers are required in a basement only, the supply shall be from a city water main. Where there is no city water supply, such basement sprinklers need not be installed, but at such time as a city supply becomes available, such required basement sprinklers shall be installed.

(4) Every basement sprinkler system shall also include sprinklers in all shafts (except elevator shafts) leading to the story above.

(5) Every sprinkler system shall have a suitable audible alarm and an approved Siamese connection marked "To Automatic Sprinklers".

*Note:* The department will ordinarily approve any installation which is approved by the National Board of Fire Underwriters.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.29 Fire alarm systems.** (1) Interior fire alarm systems required under sections Ind 161.11, 163.08 and 164.18 shall be designed and constructed in conformity with the following requirements.

(2) All such alarm systems shall consist of 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 except as stated in section Ind 163.08 and 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.

(4) In buildings more than three 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.

(4m) **Exception.** In apartment buildings less than 6 stories in height and having less than 5,000 square feet area per floor, non-coded, electrically supervised, continuous ringing 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 department.

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

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

(10) 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.

(11) 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 three 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 three stories in height shall be #14, AWG or #16 AWG for buildings not over three 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 cut-out or equivalent.

*History:* 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.30 Boilers, furnaces and stoves.** (1) **PROTECTION OF FLOOR.** Except as provided in sections Ind 161.13, 162.31, 163.09 and 164.20, every existing boiler, furnace or oven shall be placed on a fire-resistive floor projecting at least 2 feet on all sides. Such floor shall also be provided for every coal, wood, or oil stove or range which is more than 16 square feet in horizontal area or which has a flame at the bottom. If any such floor rests on or is in contact with any combustible material, then the fire-resistive floor layer shall be at least 3 inches thick and shall be hollow, with air spaces running horizontally through the

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same. The air spaces shall be open at both ends and shall be so placed that air can circulate through them; their horizontal area shall equal at least one-half the horizontal area of the fire-resistive slab.

*Note:* The purpose of these air spaces is to permit air to circulate through the fire-resistive slab and keep down its temperature. When a range or a heater rests on a solid layer of brick or concrete, it has been found that after several months the heat strikes through to the wood below. Many fires have been caused in this way.

(2) **AIR SPACES.** The air spaces may be secured by using hollow tile placed end to end; or by imbedding wrought or sheet iron pipes (say 3 inch diameter or larger) in a layer of concrete. The air spaces should run parallel to the short dimension of the slab.

(3) **FIRE-RESISTIVE FLOOR LAYER.** If the stove, range, etc., is raised at least 6 inches above the floor and such air space is not enclosed, then the fire-resistive floor layer may be reduced to not less than 2 inch solid thickness, without air spaces, provided it is covered with sheet metal.

(4) **COAL, WOOD, OIL STOVE.** Every coal, wood or oil stove or range not more than 16 square feet in horizontal area and not having a flame at the bottom shall, if placed on a combustible floor, be raised at least 6 inches above the floor, and such air space shall not be enclosed. Such floor shall be protected with a stove board of sheet metal or asbestos, projecting at least one foot on all sides.

(5) **GAS STOVE.** Gas stoves shall be protected as above specified, except that

(a) A three inch solid fire-resistive floor layer, projecting at least 6 inches on all sides shall be sufficient protection if the stove has a false bottom at least 3 inches above such fire-resistive floor; and

(b) If the stove is less than 16 square feet in horizontal area and has a false bottom at least 5 inches above the floor, no fire-resistive floor shall be required.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.31 Protection of walls and ceiling; repair; fireplaces.** (1) Except as otherwise provided in section Ind 160.30, every combustible wall, partition or ceiling which is less than 24 inches distant from a boiler, furnace, oven, stove, or range, shall be protected with at least  $\frac{1}{4}$  inch asbestos board covered with galvanized sheet metal, or with equivalent protection as specified in section Ind 160.11, or shall be protected with a metal shield with at least 4 inches air space behind the same, except as provided below. If the wall, partition, or ceiling is less than 12 inches distant from the boiler, furnace, oven, stove or range, then the woodwork and studs shall be cut away and replaced with incombustible material; or shall be otherwise protected as required by the department or the fire department.

(2) The above distances may be reduced one-half in the case of stoves and ranges less than 16 square feet in area, and also in the case of gas ranges of greater area if proper insulation is incorporated in the back of the range.

(3) The top of every boiler, furnace or oven, shall be covered with asbestos, sand, or other heat resisting material, or the required distance above same shall be increased 100 per cent.

(4) All cracked, broken or otherwise defective stoves, furnaces and

boilers, shall be repaired forthwith, and made safe, or shall be replaced with new ones.

(5) All open fireplaces shall be protected by substantial wire screens.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.32 Smoke pipes.** (1) No smoke pipe shall pass through any floor, outside window or door, nor through any combustible roof or combustible outside wall, nor through any closet, attic or similarly concealed space.

(2) Every smoke pipe passing through a non-fire-resistive partition shall be encased with incombustible material at least 4 inches thick or with a double safety thimble made of two concentric rings of sheet metal with at least one inch open air space between and with outer ring covered with at least  $\frac{1}{4}$  inch asbestos.

**Note:** The double thimble is of no value unless it is kept free from dirt. The best protection is a casing of solid masonry, with  $\frac{1}{4}$  inch space between the masonry and the pipe.

(3) No part of any smoke pipe shall be placed nearer to any combustible partition or wall than the diameter of the pipe, nor nearer to any combustible ceiling than one and one-half times the diameter; but the above distances may be reduced by one-half, if the wall or ceiling is covered with not less than  $\frac{1}{4}$  inch asbestos board covered with galvanized sheet metal, or with equivalent protection as specified in section Ind 160.11.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.33 Hot air pipes.** Every hot air pipe contained in or passing through a combustible partition or floor, shall be covered with asbestos, or all wood within 2 inches of such pipe shall be protected with asbestos covered with sheet metal, unless such hot air pipe is double.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.34 Chimneys.** (1) No chimney shall rest upon a flooring of wood, nor shall any wood or other combustible material be built into or left in contact with any chimney.

(2) All chimneys which are defective by reason of settling, cracking, disintegrating of mortar, or from any other cause, shall be repaired or rebuilt forthwith and made safe.

(3) All chimneys constructed of tile, terra cotta, or brick on edge, shall be replaced by a substantial brick chimney.

(4) All chimneys shall be thoroughly cleaned at least once each year.

**Note:** For requirements applying to the construction, remodeling and repair of chimneys, see the state building code issued by the department.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.35 Gas and oil lamps; gas service.** (1) Gas and oil lamps shall not be used where electricity is available.

(2) Gas and oil lamps shall be placed at least 6 feet above the floor level, at least 6 inches from any combustible partition or wall, and at least 2 feet (measured from top of flame) below any combustible ceiling unless properly protected by a metal shield with at least 2 inches of air space above. Swinging brackets shall be provided

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with a guard or stop so that the light cannot come nearer to the partition or wall than one foot. In aisles and public passageways, every such light shall be protected by an incombustible guard unless the light is at least 7 feet above the floor. Gas and oil lights shall be kept at least 2 feet from any drape or window curtain.

(3) Every gas supply main shall have a service cock outside of the building, so placed and maintained that it can be shut off at any time without entering the building.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.36 Electrical work.** (1) All new electrical work shall conform to the Wisconsin state electrical code of the department.

(2) All electrical wiring and installation which by reason of insufficient supports, defective insulation, contact with combustible materials, or with conductors of electricity, deterioration, faulty materials or from any other cause, is liable to cause fire, shall forthwith be overhauled, repaired or replaced, and made safe, and all such repair work shall be done as required by said Wisconsin state electrical code.

(3) Electric cords shall not be hung on or be fastened with or come in contact with nails, staples, hooks, gas or water pipes, machinery or other metal supports.

(4) Pendant lamps must be free from contact with furniture, machinery, posts or other fixtures.

(5) Where portable electric lights must be used, the same shall be equipped with socket of non-combustible, non-absorbent insulating material, large handle of non-absorbent insulating material, basket guard, proper reflector and special heavy duty cord of the reinforced or similar type.

**Note:** For fire prevention requirements, see general orders on fire prevention issued by the department.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 160.37 Combustible drapes, decorations.** (1) No drapes, curtains or decorations (except within a private apartment or a hotel guest room) of paper, cotton, cloth or any other combustible material shall be used in any building covered by this code unless effectively flame-proofed in an approved manner.

(1m) **Exception.** This requirement does not apply to drapes and decorations on display in retail establishments.

(2) Where drapes, curtains or decorations are of a permanent or semi-permanent nature, there shall be affixed thereto a tag or other indication stating the date on which the flame-proofing was done and signed by the firm or person doing the work.

**Note:** The ordinary methods of flame-proofing are only effective for a period of from 6 months to a year and for this reason the flame-proofing treatment must be renewed within this period.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.



## Chapter Ind 161

## FACTORIES, OFFICE AND MERCANTILE BUILDINGS

Ind 161.001	Scope	Ind 161.08	Lighting
Ind 161.01	Exits	Ind 161.09	Standpipes and extinguishers
Ind 161.02	Fire escapes	Ind 161.10	Automatic sprinklers
Ind 161.03	Stairways	Ind 161.11	Fire alarm
Ind 161.04	Total width of stairways	Ind 161.12	Floor loads
Ind 161.05	Capacity of buildings	Ind 161.13	Heating plants
Ind 161.06	Exit doors		
Ind 161.07	Passageways		

The requirements of the following sections apply to buildings of this classification only. For other general requirements, see Ch. Ind 160.

**Ind 161.001. Scope.** Under this classification are included 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.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 161.01 Exits.** (1) **MINIMUM NUMBER.** Every building and every story thereof in this classification shall have at least 2 exits. In large buildings, or where a large number of persons are employed, or where there is an especially hazardous condition, additional exits shall be provided as directed, so as to afford safe egress for all the occupants.

(2) **TYPE.** The exits herein required shall be either stairways or fire escapes or horizontal exits (see section Ind 160.12). But in every non-fire-resistive building more than 2 stories in height, at least one exit shall be a fire escape or a horizontal exit, unless the building is equipped throughout with an approved automatic sprinkler system, or unless there are at least 2 stairways enclosed with not less than one-hour-fire-resistive partitions and fire-resistive doors. (Sections Ind 160.08-160.09)

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 161.02 Fire escapes.** Fire escapes shall be stairway fire escapes as described in sections Ind 160.13-160.23. On buildings which accommodate more than 50 persons above the second story, such fire escape shall be a "B" type fire escape. Existing stairway fire escapes will be accepted if strongly and properly built and in good condition. Fire ladders will not be accepted as exits.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

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**Ind 161.03 Stairways.** (1) Every stairway in buildings more than 3 stories in height shall be enclosed with not less than one-hour fire-resistive partitions and fire-resistive doors. (Sections Ind 160.08-160.09)

(1m) **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 fire-resistive partitions, as specified above.

(2) Outside stairways heretofore constructed on buildings not more than 2 stories in height will be accepted if properly constructed and in good condition.

(3) Existing inside stairways at a steeper angle than 45 degrees with the horizontal, or less than 3 feet in width, will not be accepted as exits.

(4) All stairways and steps of more than 3 risers shall have at least one handrail. Stairways and steps which are 5 feet or more in width, or which are open on both sides, shall have a handrail on each side. Rails shall be not less than 2 feet 6 inches vertically above nose of treads or 3 feet above platform.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 161.04 Total width of stairways.** (1) In a building not provided with horizontal exits, the total width of stairways (if enclosed) and stairway fire escapes shall not be less than the following:

(2) In ordinary or frame buildings:

Sprinklered ----- 40 in. per 100 persons  
Not Sprinklered ----- 60 in. per 100 persons

In fire-resistive or 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
	30	50	40	60	but in no case shall such total width be less than in. per 100 persons on any one floor

(3) This table is based on the assumption that in buildings over three stories in height the inside stairways will be enclosed with not less than one-hour fire-resistive partitions and fire-resistive doors (sections Ind 160.08-160.09) and that the fire escapes are located as required by section Ind 160.13.

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(4) If horizontal exits 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 width of such exits, provided such increase shall not exceed 100 per cent of the number of persons accommodated by the stairways and fire escapes.

*Note:* To facilitate calculations under this order in buildings where the same number of persons are to be accommodated on each floor, the following table shows the number of persons who may be accommodated for each foot in width of enclosed stairways and protected fire escapes, or for each two feet in width of unenclosed stairways and unprotected fire escapes:

Frame and ordinary buildings, 20 persons total, above first story, if not sprinklered; 30 if sprinklered.

(5) Fire-resistive and mill buildings:

Height of Building	Fire-Resistive Sprinklered	Fire-Resistive Not Sprinklered	Mill Sprinklered	Mill Not Sprinklered	
2 stories.....	40	24	30	20	Persons on each floor
3 stories.....	27	16	20	13	Persons on each floor
4 stories.....	21	13	16	11	Persons on each floor
5 stories.....	18	11	14	9	Persons on each floor
6 stories.....	17	10	13	8	Persons on each floor
More than 6 stories...	16	10	12	8	Persons on each floor

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 161.05 Capacity of buildings.** (1) In calculating the aggregate width of exits, the capacity of buildings shall be established as follows:

(2) In wholesale mercantile establishments and warehouses, by the maximum number of persons employed therein plus an equal number of customers.

(3) In retail mercantile establishments, the capacity shall be determined by allowing one person per 100 square feet of gross floor area, excluding elevators and stairways, and no greater number of persons shall be permitted therein.

(4) In cafes, restaurants and taverns the capacity shall be based on 10 square feet of net floor area per person.

(5) In factory and office buildings, the capacity shall be determined by allowing one person per 75 square feet of net floor area in each occupied space.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 161.06 Exit doors.** (1) Every door which serves as the exit from a stairway shall be not more than 20 feet distant from the stairway unless the passageway from the stairway to the door is enclosed with not less than one-hour fire-resistive partitions and fire-resistive doors (sections Ind 160.08-160.09). Every such door, and also every door which serves as an exit for more than 25 persons shall be a standard exit door as described in section Ind 160.24.

(2) Exit lights and signs bearing the word EXIT or OUT in plain letters at least 5 inches in height shall be provided over every exit doorway from each floor except the principal entrance on the first

floor. Exit lights and signs shall be installed as required by section Ind 160.24.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 161.07 Passageways.** Every public passageway or aisle leading to or from a stairway, fire escape, or exit door shall be kept clear and unobstructed at all times. Where loose chairs or seats would be liable to cause confusion or obstruction, such chairs or seats must be fastened.

**Note on Elevator and Elevator Enclosures.** See general orders on elevators issued by the department.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 161.08 Lighting.** (1) All passageways and stairways shall have lights at the head and foot of each flight of stairs, and at the intersections of all corridors and passageways. Where fire escapes are required, such fire escapes shall be lighted whenever the stairways are required to be lighted. For exit lights and signs, see sections Ind 160.24 and 161.06.

(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. See also section Ind 160.35.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 161.09 Standpipes and extinguishers.** (1) For exterior standpipes, see section Ind 160.22.

(2) First aid standpipes (section Ind 160.26) or fire extinguishers (section Ind 160.27), in such number as may be required by the department, or by the local fire department shall be provided in all buildings where flammable material or any other hazardous condition is present, unless an approved automatic sprinkler system is provided.

**Note:** The term "flammable" is applied to objects which are not only combustible (i.e., can be burned) but which will burn readily or rapidly.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 161.10 Automatic sprinklers.** (1) A complete automatic sprinkler system (section Ind 160.28) 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 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.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

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**Ind 161.11 Fire alarm.** A fire alarm system complying with section Ind 160.29 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.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 161.12 Floor loads.** (1) Floors shall not be loaded beyond the safe load which corresponds to the unit stresses specified in sections Ind 53.07, 53.22, 53.24, and 53.28 of the state building code.

(2) In every factory, workshop, warehouse, or other building where material is piled, notices of a permanent 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.

(3) 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.

**Note:** For sanitation requirements applying to places of employment, see general orders on sanitation issued by the department.

For spray coating requirements, see general orders on spray coating issued by the department.

For requirements applying to window cleaning, see the general orders on safety issued by the department.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 161.13 Heating plants.** Any new installation or replacement of a heating boiler, furnace or power boiler together with the breeching and fuel room in buildings of this classification shall be enclosed in a separate room having a two-hour fire-resistive floor. The walls and ceiling shall be of one-hour fire-resistive construction or better. All openings shall be protected with self closing fire-resistive doors.

(1m) **Exception.** Space heaters, suspended furnaces and suspended direct fired unit heaters fired with various fuels may be used without an enclosure where approved by the department. 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.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

## Chapter Ind 162

## THEATERS AND ASSEMBLY HALLS

Ind 162.001	Scope, theaters	Ind 162.17	False openings
Ind 162.01	Assembly halls	Ind 162.18	Motion picture machine booths, general
Ind 162.02	Capacity	Ind 162.19	Construction of booth
Ind 162.03	Exits	Ind 162.20	Doors
Ind 162.04	Fire escapes	Ind 162.21	Openings
Ind 162.05	Stairways	Ind 162.22	Ventilation of booths
Ind 162.06	Exit doors	Ind 162.23	Relief outlets
Ind 162.07	Width of exits	Ind 162.24	Electrical wiring
Ind 162.08	Seats	Ind 162.25	Motion picture machine
Ind 162.09	Aisles	Ind 162.26	Fire protection in booth; care and use of film
Ind 162.10	Obstructions	Ind 162.27	Portable booths
Ind 162.11	Proscenium curtain	Ind 162.28	Strength of floors
Ind 162.12	Automatic smoke outlet	Ind 162.29	Maintenance
Ind 162.13	Lights, oil and gas	Ind 162.30	Toilet rooms
Ind 162.14	Exit lights and signs	Ind 162.31	Heating plants
Ind 162.15	Ventilation		
Ind 162.16	Fire extinguishers		

The requirements of the following sections apply to buildings of this classification only.

For other general requirements, see Ch. Ind 160.

**Ind 162.001 Scope. THEATERS.** Under this classification are included all buildings or parts of buildings used for theatrical, operatic, or motion picture performances.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.01 Assembly halls.** Under this classification are included all buildings or parts of buildings not included under theaters, where more than 100 persons assemble for entertainment, recreation, instruction, worship or dining purposes.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.02 Capacity.** (1) The capacity of a theater or assembly hall shall be established by the actual number of permanently fixed seats. Where permanently fixed seats are not provided, the capacity shall be established by allowing 10 square feet of floor space per person in areas used as dining rooms and dance halls, 15 square feet per person in gymnasiums, skating rinks and lodge halls, and 7 square feet per person in all places used for seated assembly. For bleachers and grandstands, one person per 18 inches of seat board will be allowed.

(2) No greater number of persons than the number thus established shall be permitted in any theater or place of assembly.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.03 Exits.** (1) **NUMBER.** Every theater or assembly hall shall have 2 or more exits, placed as far apart as practicable, and so located that if any exit is blocked, some other exit will still be accessible from every part of the theater or assembly hall. This order shall apply separately to the main floor and to each balcony or gallery which accommodates more than 50 persons, and also to the stage, dressing room section and other employes' rooms.

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(2) **TYPE.** Each exit shall be either a stairway, or a fire escape, or a horizontal exit (Section Ind 160.12), or for the first floor only an outside stairway with steps or incline to grade.

(3) **LOCATION.** If a theater or assembly hall is located above the second story, all interior stairways shall be enclosed with not less than one-hour fire-resistive partitions and fire-resistive doors (Sections Ind 160.08-160.09), each leading to a separate exit door.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.04 Fire escapes.** Fire escapes hereafter constructed shall be stairway fire escapes as described in sections Ind 160.13-160.23. If the theater or assembly hall accommodates more than 125 persons, such fire escape shall be a "B" type fire escape. Existing stairway fire escapes complying with these requirements will be accepted if strongly and properly built and in good condition. Ladders are not accepted as exits under any conditions.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.05 Stairways.** (1) Inside stairways at a steeper angle than 45 degrees with the horizontal are not accepted as exits. No stairway will be accepted as an exit if it is necessary to go up stairs in order to reach the head of the stairway.

(2) Outside stairways heretofore constructed on buildings not more than two stories in height will be accepted if properly constructed and in good condition.

(3) Stairways and steps which have more than 3 risers shall have handrails on both sides. Rails shall be not less than 2 feet 6 inches vertically above nose of treads, or 3 feet above a platform.

(4) If a closet is located under any non-fire-resistive stairway which serves as an exit from a theater or assembly hall, such closet shall not be used, but shall be kept empty and locked.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.06 Exit doors.** (1) Exit doors shall be as required by section Ind 160.24, but no rolling, sliding or revolving door shall be used as an exit from any theater or assembly hall.

(2) For exit lights and signs, see section Ind 162.14-162.15.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.07 Width of exits.** (1) The total width of exits from every theater and assembly hall, and from every part thereof, shall not be less than the following:

(a) Buildings of fire-resistive construction, 36 inches per 100 persons.

(b) Buildings of ordinary construction, 40 inches per 100 persons.

(c) Buildings of frame construction, 44 inches per 100 persons.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.08 Seats.** (1) Where fixed seats are not used, the chairs or seats shall be fastened together in groups of 4 or more. There shall be not 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.

(2) All seats, chairs and benches shall be placed not less than 32 inches back to back measured horizontally, except that this require-

ment does not apply where fixed seats have already been installed.

(3) Loose chairs or seats shall not be used unless a special permit is secured from the department.

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

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.09 Aisles.** No wall aisle shall be less than 3 feet wide and no other straight aisle shall be less than 3 feet 6 inches wide except that where fixed seats were originally installed, the above dimensions may be reduced 6 inches.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.10 Obstruction.** (1) All lobbies, aisles, passageways and doorways shall be kept free from furniture, drapes, display equipment, merchandise and other obstructions, and no person except an employe shall be allowed to stand in or occupy any of the aisles, foyers or passageways during any performance or public gathering.

(2) No vending equipment, booths or counters shall be placed in any lobby, foyer or other public space except as provided for in the state building code.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.11 Proscenium curtain.** (1) In every theater or assembly hall having a stage which is more than 6 feet higher or wider than the proscenium opening, the proscenium opening shall be provided with a rigid metal curtain or a curtain of asbestos conforming to the following specifications, or of equivalent approved construction.

(a) Asbestos curtains shall be substantially woven of asbestos fiber not less than 95 per cent pure and shall weigh not less than 2½ pounds per square yard. There shall be incorporated into the yarn before weaving, either monel metal, nickel, brass or other metal or alloy, having no less strength than these metals at temperatures up to 1700 degrees Fahrenheit and no less resistance to corrosion at ordinary temperatures.

(b) All seams shall be vertical, shall be lapped not less than one inch and sewed in two rows with not less than 1/16 inch pure asbestos twine. At the top and bottom of the curtain a 2½ inch (or larger) steel pipe shall be placed and shall be securely fastened in and covered by the curtain. The curtain shall overlap the proscenium wall not less than 12 inches at each side and at the top, and shall be guided at each side by metallic loops or rings sliding on a ¾ inch steel cable or No. 6 U. S. Standard gauge wire.

(c) In addition to any decoration, the curtain shall be painted on both sides with a mineral paint, having a silicate of soda binder, which will completely fill the cloth. Filler paint shall have not less than 4 parts of casein in each 10 parts of silicate of soda. The paint shall be well brushed into the cloth so that no light or smoke can come through.

(d) For curtains of any type, the connections between curtain and wall shall be made as nearly smoke-proof as possible. Smoke grooves or pockets shall be of structural steel shapes and plates not less than ¼ inch thick. These grooves or pockets shall be not less than 14 inches deep and 6 inches wide and shall be set back from the face of the arch at least 6 inches. They shall extend from the stage floor to a



point 3 feet above the top of the raised curtain, and shall be securely bolted to the proscenium wall.

(e) Provisions shall be made to prevent the curtain from leaving or binding on the guides under any conditions. Appropriate limit chains shall be provided to stop the downward travel of the top of the curtain at a line not less than 12 inches above the top of the proscenium opening. No part of a curtain, nor any of the curtain guides, or equipment, shall be supported by, or fastened to, any combustible material.

(f) The hoisting apparatus for the curtain shall be designed with a factor of safety of 8 or more.

(g) Besides the regular operating mechanism there shall be an emergency device which will allow the curtain to drop by gravity. The device shall be so arranged that it can be easily operated by hand from each side of the stage and from the fly galleries, and also that its operation will be controlled by 135 degree fusible links, or other approved heat release devices, placed on each side of the stage, and when thus operated it shall descend at its normal rate of speed.

(h) The curtain and its operating mechanism shall be so designed and constructed at all points, whether specifically mentioned or not, as to form an efficient and reliable barrier against fire and smoke, according to the best practice.

(i) Detailed plans and specifications for all curtains and their operating mechanism shall be submitted to the department for approval before installation.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.12 Automatic smoke outlet.** Where a proscenium curtain is required, or provided, the stage shall be provided with one or more automatic smoke outlets, constructed of metal or other incombustible material, placed near the center and above the highest part of the stage, and having a combined area equal to not less than 8 per cent of the area of the stage floor. Vertical louver openings shall be placed not less than 3 feet above the roof and shall be not less than twice the area of the shaft. The smoke outlet shall be designed and constructed so as to open by gravity, and so as to effectively overcome the effects of neglect, rust, dirt, frost, snow, heat, twisting, or warping of the framework. The louvers or dampers, in the openings shall be held closed by cotton or hemp cords running to the stage floor close to each stage door. Fusible links, or other approved heat release devices, shall be inserted in each cord near the outlets.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.13 Lights, oil and gas.** No oil lamp or gas lighting of any kind shall be used on or about any stage containing scenery.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.14 Exit lights and signs.** (1) In every theater and assembly hall, except church auditoriums, exit lights shall be provided immediately over all exit doorways, and in such other places as may be necessary to direct the occupants to exit doorways and to a street, alley or exit court. The installation of such exit lights shall comply

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in all respects with the provisions of the Wisconsin state electrical code.

(2) Every light over an exit doorway shall be a red illuminated sign bearing the word EXIT or OUT in plain letters not less than 5 inches in height.

(3) All exit lights shall remain lighted during each occupancy and until the occupants have left the building.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.15 Ventilation.** In all theaters and assembly halls a heating and ventilating system complying with the requirements of the heating, ventilation and air conditioning code shall be provided, maintained and operated.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.16 Fire extinguishers.** (1) Standard fire extinguishers (Section Ind 160.27) shall be provided as follows:

(a) *Theaters:*

1. Two on stage (if more than 1500 square feet of scenery is used).
2. One on stage (if not more than 1500 square feet of scenery is used).
3. One in motion picture booth, or in ticket office if there is no booth.
4. One in dressing room section.

(b) *Assembly halls:*

1. One on or near stage or platform and one in or near ticket office.
2. Extinguishers shall be properly exposed to view and always accessible.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.17 False openings.** No false opening giving the appearance of a door or window, where none exists, shall be permitted in any part of a theater or assembly hall used by the public.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.18 Motion picture machine booths, general.** Every motion picture machine using nitro-cellulose film, together with all auxiliary and associated equipment, shall be enclosed in a booth so arranged as to permit the operator to walk freely on either side and in back of the machine. At least 48 square feet in area shall be provided for one machine, and 24 square feet additional for each machine over one. The ceiling height shall be not less than 7 feet.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.19 Construction of booth.** The floor of each motion picture booth shall be constructed of masonry or reinforced concrete, or shall be covered with not less than 2 inches of fire-resistive material. The walls and ceiling shall be not less than two-hour fire-resistive construction as specified in section Ind 51.05.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.20 Doors.** (1) The door to the booth shall be not larger than necessary for the safe and proper use and maintenance of the booth

and equipment, but in no case shall its dimensions be smaller than 2 feet by 5 feet or larger than 3 feet by 7 feet. The top of the door shall be not less than 12 inches below the ceiling of the booth.

(2) The door shall be a tight-fitting self-closing fire door, shall open outwardly, and shall not be equipped with any latch.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Cross Reference.** See section Ind 51.09 of building code.

**Ind 162.21 Openings.** (1) Two openings for each motion picture machine may be provided. The one for the operator's view shall not be larger than 200 square inches and the one for projection not larger than 120 square inches. Where separate stereopticon, spot, or flood-light machines are installed, not more than one opening shall be provided for each such machine for both the operator's view and the projection of light. All such openings shall be as small as practicable.

(2) Each opening shall be provided with an approved gravity shutter set into guides not less than one inch at sides and bottom, and overlapping the top of the opening by at least one inch when closed. Shutters shall be not less than No. 10 U. S. standard gauge iron or equivalent, arranged to move freely in guides of like material and thickness bolted to the wall. Each shutter shall be suspended by a cord, and shall be so arranged that closing is by gravity action. A fusible link shall be provided in the cord over each shutter. A link shall also be provided over each magazine, which on operating will close all shutters. A manual release shall be provided near each exit door by which all shutters can be closed simultaneously. Shutters shall not be blocked open nor held open in any manner except by the harness of cords and links as herein described.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.22 Ventilation of booths.** Every booth or room housing projection, sound or any other equipment which vitates good air conditions or requires the attention of an attendant shall be ventilated as required by section Ind 58.43 of the heating, ventilation and air conditioning code issued by the department. Fresh air intakes in booth walls, except for outside air, shall not exceed 72 square inches in area, nor be more than 3 inches above the floor. They shall be equipped with automatic shutters as described for projection openings.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.23 Relief outlets.** Every booth or room housing projection, sound or other equipment which constitutes a fire, smoke, explosion or fuming hazard shall be equipped with one or more gravity outlets extending upward from the ceiling through the roof. The net area of such gravity relief outlets shall be equal to one per cent of the room or booth floor area, but not less than 12 inches in diameter. Such outlets shall be constructed as sheet metal ducts having double walls with  $\frac{1}{2}$  inch air space between, or better construction. Where a relief outlet passes through, or is within 18 inches of any combustible construction, or passes through any other occupancy, approved masonry flues as specified for chimneys, shall be used. The relief outlets shall be equipped, at the booth or room outlets, with a gravity shutter which will open automatically under excessive heat condi-

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tions. The automatic shutter shall normally be tightly closed where mechanical exhaust ventilation is required in the same room.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.24 Electrical wiring.** All lights and electrical wiring, also motors, arc lamps, rheostats, and associated electrical equipment shall conform in type and arrangement to the requirements of the Wisconsin state electrical code.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.25 Motion picture machine.** Every projection machine shall be securely fastened to the floor, and together with sound head and other associated equipment, shall be of safe design. No part of the film shall be outside of a tight metal enclosure during projection, and the feed and take-up reels shall have riveted, flanged, or welded joints. A shutter shall be placed in front of the condenser, arranged so as to be closed except when held open by the operator, or by some mechanical device which will assure immediate closure when operation of the machine is stopped.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.26 Fire protection in booth; care and use of film.** (1) All shelves, furniture and fixtures shall be incombustible. No combustible material shall be permitted to be within such booth, except films and film cement not exceeding one pint. Smoking is prohibited. Heating equipment in booths shall be limited to steam, warm air, hot water or electric convection heaters with low surface temperature elements. Radiators shall be protected by  $\frac{1}{4}$  inch mesh screen with the top sloped at least 45 degrees to the horizontal.

(2) Films not in process of rewinding, examination or projection shall be kept in metal containers. Up to 40 pounds of film may be kept in the projection booth in interstate commerce commission shipping containers. Excess over 40 pounds shall be kept in an approved film cabinet, but the total quantity of film in any booth shall not exceed 125 pounds.

(3) Rewinding in the projection booth is prohibited unless done in an approved enclosed type rewind machine. An approved can with self-closing hinged cover shall be provided for scrap film.

(4) Up to 125 pounds of film in addition to that permitted in a projection booth, may be kept in containers as specified above, providing this excess is in a rewind room of not less than 80 square feet area, and of the construction specified in sections Ind 162.19 and 162.20. Such room shall have a vent of at least 50 square inches area extending upward to the outside of the building, with a clearance to combustible material conforming to section Ind 162.23. Furniture and heating shall be as for the projection booth, and smoking is prohibited.

**Note:** In the foregoing order the weight of a 1000 foot roll of 35 millimeter film is assumed as 5 pounds.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.27 Portable booths.** (1) Every portable booth used to confine the fire hazards of a motion picture machine shall be of approved design conforming to the requirements for permanent booths.

(2) Every booth used for more than 3 consecutive performances in one location will be considered a permanent booth.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.28 Strength of floors.** (1) No building or part thereof shall be used as a theater or public assembly hall unless the floors of the auditorium, balconies, galleries, lobbies, passageways and stairways are capable of sustaining the following live loads (pounds per square foot) in addition to the dead load, without exceeding the unit stresses permitted by the state building code (sections Ind 53.06, 53.22, 53.24, 53.28).

- (2) Auditorium with fixed seats ----- 50
- (3) Lobbies, passageways, stairways, auditorium or places of assemblage without fixed seats ----- 100

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.29 Maintenance.** All theaters and assembly halls and all parts thereof shall be kept clean, sanitary and in good repair.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.30 Toilet rooms.** Toilet facilities shall be provided in connection with theaters and assembly halls, where, in the judgment of the department, they are necessary. All toilet rooms shall be maintained in a sanitary condition.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 162.31 Heating plants.** Every boiler or furnace room including the breeching and fuel room shall be provided with a two-hour fire-resistive floor and shall be enclosed with not less than one-hour fire-resistive walls and ceiling. All openings shall be protected with fire-resistive doors.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

## Chapter Ind 163

## SCHOOLS AND OTHER PLACES OF INSTRUCTION

Ind 163.001	Scope	Ind 163.06	Seats and desks
Ind 163.01	Exits	Ind 163.07	Fire extinguishers
Ind 163.02	Fire escapes	Ind 163.08	Fire alarms
Ind 163.03	Stairways	Ind 163.09	Heating plants
Ind 163.04	Exit doors	Ind 163.10	Sanitary equipment
Ind 163.05	Classrooms; floor space		

The requirements of the following sections apply to buildings of this classification only.

For other general requirements, see Ch. Ind 160.

**Ind 163.001 Scope.** Under this classification are included all public, parochial, and private schools, colleges, universities, academies, seminaries, libraries, museums and art galleries; including all buildings or parts of buildings used for the purpose of acquiring knowledge.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 163.01 Exits.** (1) Every building more than one story in height shall have at least 2 exits from each floor. If there are more than 2 classrooms between the end of the building and the nearest exit, an additional exit shall be provided at the end of the building.

(2) The exits herein required shall be either stairways, or fire escapes, or horizontal exits (section Ind 160.14). But in every non-fire-resistive building more than 2 stories in height, at least one exit shall be a fire escape or an outside covered incombustible stairway or horizontal exit, unless the inside stairways are enclosed with fire-resistive partitions and doors (sections Ind 160.08-160.11).

(3) In buildings 2 or more stories in height, all basement stairways shall be enclosed with one-hour fire-resistive partitions and fire-resistive doors as specified in section Ind 160.08.

(4) The storage of material below stairways or stair landings is prohibited.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 163.02 Fire escapes.** Fire escapes hereafter constructed shall be stairway fire escapes as described in sections Ind 160.14-160.23; on buildings which accommodate more than 100 persons above the first floor, such fire escapes shall be "B" type fire escapes. Existing stairway fire escapes will be accepted if strongly and properly built and in good condition. Ladders are not accepted as exits under any condition.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 163.03 Stairways.** (1) Inside stairways at a steeper angle than 45 degrees with the horizontal are not accepted as exits.

(2) Every stairway which serves as an exit, shall lead to a separate exit door.

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(3) All stairways and steps of more than 3 risers shall have at least one handrail. Stairways and steps which are 5 feet or more in width, or which are open on both sides, shall have a handrail on each side. Rails shall be not less than 2 feet 6 inches vertically above nose of treads or 3 feet above platform.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 163.04 Exit doors.** Exit doors shall be as required in section Ind 160.24 but no revolving door shall be considered as an exit from a building in this classification.

**Note:** Single doors are better than double doors for school buildings.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 163.05 Classrooms; floor space.** (1) The minimum floor space for recitation or classrooms shall be 18 square feet per person.

(2) Rooms used only for study purposes shall have a minimum floor space of 15 square feet per person.

(3) 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.

(4) No greater number of persons than the number thus established shall be permitted in any classroom.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 163.06 Seats and desks.** (1) Seats, chairs and desks (except those used by teachers) in class, recitation, or study rooms seating more than 50 persons shall be securely fastened to the floor, or not less than 4 seats (or 2 seats and 2 desks) shall be fastened together.

(2) Assembly hall seats and aisles shall conform to the requirements for assembly halls (section Ind 162.08-162.10).

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 163.07 Fire extinguishers.** (1) In all buildings not provided with interior standpipes, standard chemical fire extinguishers (Section Ind 160.27) shall be provided in the proportion of one extinguisher to each 2500 square feet of floor area or fraction; but there shall be at least one fire extinguisher on each floor. All fire extinguishers shall be prominently exposed to view and always accessible.

(2) In addition to the fire extinguishers required for general protection, there shall be at least one extinguisher of appropriate size and type in each laboratory, kitchen, shop, or other vocational room.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 163.08 Fire alarms.** (1) Every building 2 stories or more in height shall be provided with a proper alarm system complying with section Ind 160.29.

(2) **Exception:** 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.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 163.09 Heating plants.** (1) In every building, all heating plants including the breeching and fuel rooms, shall be enclosed in a sepa-

rate room having a two-hour fire-resistive floor. The walls and ceiling shall be of one-hour fire-resistive construction, or better.

(2) All openings shall be protected with self-closing fire-resistive doors.

(3) **Exception:** This requirement shall not apply to buildings where jacketed stoves or school room heaters are permitted.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 163.10 Sanitary equipment.** Separate toilets shall be provided for each sex in connection with all schools, as required by sections Ind 52.62 and 56.16 of the state building code.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.



## Chapter Ind 164

APARTMENT HOUSES, HOTELS AND  
PLACES OF DETENTION

Ind 164.001	Scope; apartment houses	Ind 164.10	Windows
Ind 164.01	Hotels and places of detention	Ind 164.11	Basement rooms
Ind 164.02	Exits, number and location	Ind 164.12	Toilet rooms
Ind 164.03	Type of exits	Ind 164.13	Maintenance and house-keeping
Ind 164.04	Fire escapes	Ind 164.14	Water supply
Ind 164.05	Stairways	Ind 164.15	Cleanliness
Ind 164.06	Basement stairway enclosure	Ind 164.16	Fire extinguishers
Ind 164.07	Exit doors	Ind 164.17	Automatic sprinklers
Ind 164.08	Exit lights and signs	Ind 164.18	Fire alarm
Ind 164.09	Size of rooms	Ind 164.19	Directions for escape
		Ind 164.20	Isolation of fire hazards

The following requirements apply to buildings of this classification only.

For other general requirements, see Ch. Ind 160. For rooms which accommodate more than 100 persons, see Ch. Ind 162, theaters and assembly halls.

**Ind 164.001 Scope. APARTMENT HOUSES.** Under this classification is included every building or part of a building occupied as the residence of 3 or more families living independently, or occupied by 2 such families and also used for business purposes.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 164.01 Hotels and places of detention.** Under this classification are included all hotels, lodging and boarding houses, club houses, dormitories, convents, monasteries, hospitals, homes for the aged and infirm, nursing homes, convalescent homes, convalescent hospitals, asylums, jails and other places of detention, including every building or part of a building used for sleeping or lodging purposes by three or more persons not members of a family.

**Note:** Where the following requirements refer to "families" or "apartments", the requirements apply to apartment houses; where they refer to "persons" or "rooms", the requirements apply to hotels and other places as listed in section Ind 164.01.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 164.02 Exits. NUMBER AND LOCATION.** (1) In every apartment house there shall be at least 2 exits accessible from each apartment without passing through another apartment.

(2) In every hotel, place of detention or other occupancy listed in section Ind 164.01, there shall be at least 2 exits from each floor. The number and location of such exits shall be such that in case if any exit or passageway is blocked at any point, some other exit will still be accessible through public passageways from every room, except that in fire-resistive buildings a total area of not more than 1200 square feet may be placed between an exit and the end of the building.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 164.03 Type of exits.** The exits herein required shall be either stairways, or fire escapes, or horizontal exits as described in section Ind 160.12.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 164.04 Fire escapes.** (1) Fire escapes hereafter constructed shall be stairway fire escapes as described in sections Ind 160.15-160.25. Existing stairway fire escapes will be accepted if strongly and properly built and in good condition. Fire escapes constructed on hospitals and sanitariums, and on hotels or rooming houses over two stories in height, shall be "B" type fire escapes. Access to such fire escapes shall be by standard exit doors.

(2) Every fire escape shall be placed against a blank wall if possible.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 164.05 Stairways.** (1) Inside stairways at a steeper angle than 45 degrees with the horizontal are not accepted as exits. Every new stairway shall comply with the requirements of section Ind 51.16 of the state building code.

(2) Every stairway which serves as an exit shall lead to a separate exit door.

(3) Outside stairways heretofore constructed on two-story buildings will be accepted if in good condition.

(4) All stairways and shaftways within buildings in the classification described in sections Ind 164.001-164.01 which are 3 or more stories in height shall be enclosed with partitions, including doors, of not less than one-hour fire-resistive construction.

(5) Except that one stairway may be unenclosed in the first story provided it does not lead to the basement.

(6) All stairways and steps of more than 3 risers shall have at least one handrail. Stairways and steps which are 5 feet or more in width, or which are open on both sides, shall have a handrail on each side. Rails shall be not less than 2 feet 6 inches vertically above nose of treads or 3 feet 6 inches above platform.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 164.06 Basement stairway enclosure.** In every building as listed in section Ind 164.01 more than 2 stories high, every stairway which extends from the basement to the second floor or above, shall be enclosed in the basement with not less than one-hour fire-resistive partitions and doors.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 164.07 Exit doors.** All exit doors shall be as required in section Ind 160.24 except that a door which accommodates not more than 4 families or 20 persons will not be required to swing outward.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 164.08 Exit lights and signs.** (1) In every building which accommodates more than 4 families or 20 persons, and in every building which accommodates transients, the public passageways, stairways, and exit doors shall be illuminated from one hour after sunset to one

hour before sunrise. This illumination shall include lights at all intersections of passageways, at all exits, and at the head and foot of every stairway.

(2) The lights at all exit doors shall be red lights and shall be accompanied by a sign bearing the word EXIT or OUT, in plain letters not less than 5 inches in height. Exit lights shall be installed in accordance with the requirements of the Wisconsin state electrical code and section Ind 160.24.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 164.09 Size of rooms.** Every sleeping room shall be of sufficient size to afford at least 400 cubic feet of air space for each occupant over 12 years of age, and 200 cubic feet for each occupant under 12 years. No greater number of occupants than the number thus established shall be permitted in any such room.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 164.10 Windows.** No room shall be used as a sleeping or living room unless it has a window or windows opening upon a street, alley, or yard, or upon a court connecting therewith, or above the roof of an adjoining building, or upon an inner court not less than 25 square feet in area; or unless it has a vertically-sliding pulley-hung sash window, not less than 15 square feet in area, opening into another room in the same apartment, which other room opens on a street, alley, or yard, either directly or through similar windows. Every such sash window shall be placed as nearly as possible in line with outside windows, and both halves shall be made to open readily, and the glass in the lower half shall be translucent.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 164.11 Basement rooms.** (1) No basement room shall be used as a sleeping or living room unless all the following conditions are complied with:

(a) The room shall be at least 8 feet high from floor to ceiling.

(b) The ceiling shall be at least 4 feet above the surface of the adjoining street or ground.

(c) The room shall have a window or windows opening upon a street, alley, or yard, or upon a court connecting therewith, or upon an inner court not less than 60 square feet in area; and the total window area shall be at least one-tenth of the floor area of the room, and the upper half of such window or windows shall be made to open the full width.

(d) The walls and floor shall be dampproof and waterproof.

(e) The room shall have sufficient light and ventilation and shall be fit for human habitation.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 164.12 Toilet rooms.** (1) In every apartment building where a sewer system is available, at least one water-closet shall be provided for every 2 apartments. Every such water-closet shall be located within the building, in a separate room or compartment, on the same floor with the apartments which it serves, and shall be accessible from each such apartment without passing through another apartment. All water-closets and the pipes connecting therewith shall be properly protected against frost; if located in a public hall such hall shall be

heated, if necessary, so as to prevent the closets and pipes from freezing.

(2) In every building of this classification where a sewer system is available, except apartment houses, at least one water-closet shall be provided for every 15 persons or fraction.

(3) Rooms with private water-closets shall not be considered in counting either the number of rooms or number of fixtures.

(4) Toilet rooms and fixtures hereafter installed shall comply with sections Ind 52.50-52.64 of the state building code. For details of plumbing, see state plumbing code issued by the department of health and social services.

(5) Every existing toilet room shall be ventilated by an outside window; or, where this is not possible, by a ventilating pipe approved by the department or by the local health officer.

(6) In buildings where a sewer system is not available and cannot be made available, an equal number of sanitary privies, or closets connected with a septic tank or cesspool, shall be provided in accordance with rules of the department of health and social services.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 164.13 Maintenance and housekeeping.** (1) Every building of this classification, and all parts thereof, shall be kept in good repair and the roof shall be kept so as not to leak, and all rain water shall be so drained and conveyed therefrom as not to cause dampness in the walls and ceilings.

(2) All exit doors, corridors, passageways and stairways shall be kept clear and unobstructed at all times.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 164.14 Water supply.** Where city water supply is available or can be made available, every apartment house shall be provided with proper sinks with running water, and there shall be at least one such sink within each apartment.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 164.15 Cleanliness.** Every building shall be kept clean and shall also be kept free from any accumulation of dirt, filth, rubbish, garbage, or other matter in or on the same or in the yards, courts, passages, areas or alleys connected with or belonging to the same.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 164.16 Fire extinguishers.** In every building in this classification which accommodates more than 20 persons and is not equipped with a complete automatic sprinkler system or with interior standpipes, at least one approved fire extinguisher shall be provided on each floor. Such fire extinguishers shall be located at the head of each stairway or each elevator group.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 164.17 Automatic sprinklers.** (1) Where city water supply is available, an approved automatic sprinkler system as described in section Ind 160.28 shall be provided in the basement and sub-basements of all buildings of this classification, except

- (a) Apartment houses.
- (b) Buildings not more than 2 stories high.

- (c) Buildings which accommodate not more than 40 persons.
- (d) Buildings of fire-resistive construction.

*Note:* In a summer hotel or similar building 3 stories or more in height, where the hazard is great, the department reserves the right to order a sprinkler system, even though city water supply is not available.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 164.18 Fire alarm.** (1) Every building which accommodates more than 20 persons, except hospitals and places of detention, shall be provided with a fire alarm system complying with section Ind 160.29.

(2) Every hospital which accommodates 20 or more persons shall be provided with a fire alarm system complying with section Ind 160.29 except that chimes or other approved sounding devices shall be used when within hearing distance of the patients. Visual attention compelling devices may be used in hospitals where approved by the department.

(3) A presignal fire alarm system may be installed in hospitals or hotels where not less than 4 employees are on duty at all times to respond to fire alarms.

*Note:* Where presignal systems are installed, it is recommended that the fire department be called immediately after the pre-alarm signal is received.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 164.19 Directions for escape.** In every room occupied by transients, a notice shall be conspicuously posted giving complete and plain directions for reaching at least 2 exits.

**History:** 1-2-56; renum., Register, September, 1974, No. 225, eff. 10-1-74.

**Ind 164.20 Isolation of fire hazards.** (1) All boiler or furnace rooms, including the breeching and fuel room as well as other hazardous work rooms and storage rooms, shall be provided with a two-hour fire-resistive floor and shall be enclosed with not less than one-hour fire-resistive walls and ceiling. All openings shall be protected with self-closing fire-resistive doors.

(2) The enclosure for the heating plant may be omitted in apartment buildings not more than 2 stories in height and having not more than 2 apartments on a floor and in rooming houses not more than 2 stories in height and having not more than 8 living or sleeping rooms on each floor provided no part of the building is used for business purposes and all interior stairways are enclosed in the basement with a one-hour fire-resistive enclosure or better.

(3) **Exception.** Gas-fired space heaters may be used in private apartments without an enclosure if approved by the department.

**History:** 1-2-56; renum. and am., Register, September, 1974, No. 225, eff. 10-1-74.