Ind 50, 51, 59 Filed May 11, 1972
9 am

STATE OF WISCONSIN)
) SS
DEPARTMENT OF INDUSTRY,)
LABOR AND HUMAN RELATIONS)

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETINGS:

I, Stephen J. Reilly, Executive Secretary of the Department of Industry, Labor and Human Relations, and custodian of the official records of said Department, do hereby certify that the attached rules to Wisconsin Administrative Code Chapters Ind 50-59--Building and Heating, Ventilating and Air Conditioning--were adopted by the Department of Industry, Labor and Human Relations on May 1, 1972.

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

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the official seal of the Department at the Capitol, in the City of Madison, this 1 day of May, A.D., 1972

Stephen J. Reilly, Executive Secretary

ORDER OF

DEPARTMENT OF INDUSTRY, LABOR AND HUMAN RELATIONS

Pursuant to authority vested in the Department of Industry, Labor and Human Relations by sections 101.01 to 101.25, Wis. Stats., the Department of Industry, Labor and Human Relations hereby amends, repeals, recreates and adopts rules of Wisconsin Administrative Code Chapters 50-59--Building and Heating, Ventilating and Air Conditioning.

The rules attached hereto shall become effective on January 1, 1973, following publication in the Wisconsin Administrative Code as provided in Section 227, Wis. Stats., with the following exceptions:

The following identified list of rules attached hereto shall become effective on the first day of the month following publication in the Wisconsin Administrative Code as provided in Section 227, Wis. Stats.:

Subsection Ind 50.002(2)
Subsection Ind 51.001(3)
Subsection Ind 51.17(2)
Subsection Ind 51.19(4)
Subsection Ind 51.20(1)(a)
Subsection Ind 59.69(5)(c) 1. Note
Subsection Ind 59.69(5)(d) 1. Note

Section Ind 50.001 special note to be created to read:

SPECIAL NOTE
AN ASTERISK (*) FOLLOWING THE SECTION OR SUBSECTION NUMBER OR LETTER INDICATES EXPLANATORY MATERIAL ON THAT PARAGRAPH IN APPENDIX A. EXAMPLE: IND 51.01(12)*--SEE A-51.01(12) IN APPENDIX A.

Subsection Ind 50.002(2) to be amended to read:

(2) General orders on existing buildings. Buildings and structures erected prior to the effective date of the first building code (October 9, 1914) shall comply with the general orders on existing buildings, issued by the department of industry, labor and human relations.

Sections Ind 51.001, Ind 51.01, Ind 51.02 and Ind 51.03 to be repealed effective January 1, 1973.

Ind 51.001 Fire-resistive construction. (1) 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, all as specified in this section.

(2) All exterior and inner court walls shall be of not less than 4-hour fire-resistive construction, as specified in section Ind 51.04, except that nonload bearing exterior walls which face streets, alleys, outer or inner courts 20 feet or more in width may be constructed of noncombustible panels of not less than 1-hour fire-resistive construction.

(a) Non-load bearing exterior walls which face streets, alleys, outer or inner courts 30 feet or more in width may be constructed of incombustible panels with no fire-resistive rating.

Subsection Ind 51.001(3) is repealed and recreated to read:

(3) Interior partitions shall be constructed of noncombustible materials. Doors in corridor partitions shall be no less than 1-3/4 inch wood solid core as covered under section Ind 51.047.

(a) Exception: Dividing partitions in stores, offices, and similar places not exceeding 3,000 square feet in area, occupied by one tenant only, may be constructed of wood panels or similar light construction.

(b) Partitions entirely within apartments having a floor area of not more than 800 square feet shall be of one-hour fire-resistive construction but such partitions may be constructed with wood studs as specified in section Ind 51.04. Doors in such partitions may be wood panel doors.

(4) Enclosures for elevator or dumbwaiter shafts, vent shafts, stairwells, waste paper chutes and other similar vertical shafts shall be of 2-hour fire-resistive construction as specified in section Ind

51.04 with all interior openings therein protected by fire-resistive doors or windows as specified in section Ind 51.047.

(5) Structural framework shall be of structural steel or reinforced concrete. All structural steel members, not including structural members for elevators and elevator enclosures shall be thoroughly fire-protected with not less than 4-hour fire-resistive protection for columns, beams and girders and 3-hour fire-resistive protection for floors, for all buildings more than 8 stories or 85 feet in height; and with not less than 3-hour fire-resistive protection for columns, beams and girders and 2-hour fire-resistive protection for floors, for all buildings which are 8 stories or 85 feet or less in height. All such fire-resistive protection shall be as specified in section Ind 51.04.

(6) All reinforced concrete columns, beams and girders shall be thoroughly fire-protected with 4-hour fire-resistive protection, and all floors, joists and slabs shall be thoroughly fire-protected with not less than 3-hour fire-resistive protection for all buildings more than 8 stories or 85 feet in height; and with not less than 3-hour fire-resistive protection for columns, beams and girders and 2-hour fire-resistive protection for all floors, joists and slabs, for all buildings which are 8 stories or 85 feet or less in height. All such fire-resistive protection shall be as specified in section Ind 51.04.

(7) Floor construction shall consist of any approved floor system providing not less than 3-hour fire-resistive construction for all buildings more than 8 stories or 85 feet in height; and providing not less than 2-hour fire-resistive construction, for buildings which are 8 stories or 85 feet or less in height. All such fire-resistive protection shall be as specified in section Ind 51.04.

(8) Roofs shall be constructed as specified for floors, except that wood sheathing of not less than 2 inch nominal thickness may be used for buildings not more than 8 stories or 85 feet in height when all of such sheathing is more than 25 feet distant from any floor, balcony or gallery, or wood sheathing of not less than 1 inch nominal thickness may be used at any distance not exceeding 5 feet from a 2-hour fire-resistive attic floor, and when such sheathing is covered on the outside by a class "A" or equal fire-retardant roof covering, except as provided under occupancy requirements.

(9) Stairs and stair platforms shall be constructed of reinforced concrete, iron or steel. Brick, concrete, marble, tile, terrazzo or other hard incombustible materials may be used for the finish of treads and risers.

(10) Doors and windows may be of wood except as otherwise specified under occupancy requirements and in Wis. Adm. Code sections Ind 51.17, 51.19, 51.20 and 52.21.

(11) Projections from the building, including bays, oriels, and penthouses, together with other roof structures shall be constructed of incombustible material as specified in this section.

(12) Wood may be used for finished floors and also for trim, including picture molds, chair rails, wainscoting and baseboards, if spaces between wood sleepers and wood grounds are fire-stopped with incombustible materials.

(13) Acoustical materials may be used on ceilings and on walls from a level of 6 feet above the floor provided they are attached directly thereto, and all spaces between wood grounds are fire-stopped with incombustible materials.

History: 1-2-56; am. (2); (2) (a); (3); (3) (a); Register, June, 1956, No. 6, eff. 7-1-56; am. (2) intro. par., (3) (a), (4), (7) and (8), Register, February, 1971, No. 182, eff. 7-1-71; r. and recr. (2) intro. par., (3) (a), (4), (7) and (8), eff. 8-1-71 and expiring 1-1-72; cr. (2) intro. par., (3) (a), (4), (7) and (8) eff. 1-1-72, Register, July, 1971, No. 187.

Ind 51.01 Mill construction. (1) In a building of mill construction the structural frame shall consist of steel or iron which shall be fire-protected, of reinforced concrete, of masonry, or of heavy timbers, except that in buildings not exceeding one story in height the structural steel or iron may have the fire-protection omitted.

(2) Exterior and court walls shall be 2-hour fire-resistive construction as specified in section Ind 51.04, except that nonload bearing exterior walls which face streets, alleys, outer or inner courts 20 feet or more in width may be constructed of noncombustible panels of not less than 1-hour fire-resistive construction.

(a) Non-load bearing exterior walls which face streets, alleys, outer or inner courts 30 feet or more in width may be constructed of incombustible panels with no fire-resistive rating.

(3) All wood columns in the structural frame shall be directly superimposed, one above the other, and shall be provided with steel or cast iron caps, unless the floor or roof beams and girders are carried on blocks securely fastened to the columns and with the loads transmitted to the columns by metal ring or similar type connectors or by caps of otherwise suitable material. They shall not rest on wood bolsters or floor timbers. Wood bolsters may be used to support roof timbers. No wood column shall be less than 8 inches nominal in its least dimension, and no beam, girder or joist shall be less than 6 inches nominal in its least dimension nor less than 45 square inches in cross-sectional area. Where wood arches or wood trusses are used to support roof loads, the framing members shall not be less than 4 inches by 6 inches, nominal dimensions. In no case shall masonry or reinforced concrete be supported on wood construction except tile or concrete floor finishes not more than 3 inches in thickness.

(4) For structural steel or iron members, the fire-protection shall be not less than 3-hour fire-resistive protection for columns and not less than 2-hour fire-resistive protection for beams, girders and floor systems, as specified in section Ind 51.04.

(5) All reinforcement in concrete columns shall be fire-protected with not less than 3-hour fire-resistive protection, and all joists, beams, girders, slabs and steel floors with not less than 2-hour fire-resistive protection outside of all steel reinforcing as specified in section Ind 51.04.

(6) Wood floor construction shall be of tongues and grooves, or splined lumber not less than 3 inches nominal thickness, with a top layer of flooring of one inch nominal thickness laid thereon, or of solid lumber placed on edge and securely spiked together to make a floor not less than 4 inches nominal thickness.

(7) Roof construction shall be as specified for floors, except that the minimum nominal thickness shall be 2 inches. Roof coverings shall be class "A" or equal fire-retardant roofing as specified in section Ind 51.04 and shall be required over all combustible roof construction.

(8) Enclosures for elevator or dumbwaiter shafts, vent shafts, stairwells, wastepaper chutes, and other similar vertical shafts shall be of 2-hour fire-resistive construction as specified in section Ind 51.04, with all interior openings therein protected by fire-resistive doors as specified in section Ind 51.047.

(9) Stair construction may be of wood in buildings not exceeding 3 stories in height. In buildings 4 or more stories in height all stairs and stair construction shall be as required for fire-resistive construction specified in section Ind 51.001.

(10) Doors and windows may be of wood except as otherwise specified under occupancy requirements in this code.

History: 1-2-56; am. (2); (2) (a); Register, June, 1956, No. 6, eff. 7-1-56; r. and recr. Register, September, 1959, No. 45, eff. 10-1-59; am. (2) intro. par., (7) and (8), Register, February, 1971, No. 182, eff. 7-1-71; r. and recr. (2) intro. par., (7) and (8) eff. 8-1-71 and exp. 1-1-72; and cr. (2) intro. par., (7) and (8) eff. 1-1-72, Register, July, 1971, No. 187.

Ind 51.02 Ordinary construction. (1) A building is of ordinary construction if all enclosing walls are constructed entirely of noncombustible material, and the roof has a class "B" or equal fire-retardant covering as specified in section Ind 51.04.

(2) The interior structural framework shall be of steel, iron, reinforced concrete, masonry, or wood. Fire protection of steel, iron or wood structural members may be omitted, except that all members carrying masonry in buildings more than one story in height shall be fire protected with not less than one-hour protection as specified in section Ind 51.04.

(3) Floors, roof and partitions may be of wood but no joist, rafter, or stud shall be less than 2 inches in nominal thickness. In buildings of 4 stories or more in height, the lower side of all metal or wood floor or roof construction shall be protected by a ceiling of 1-hour fire-resistive construction as specified in section Ind 51.04, unless otherwise provided under the occupancy requirements.

(4) Stairs may be of steel, iron, reinforced concrete, masonry or wood, with enclosures as specified under occupancy requirements.

(5) Bays, oriels and similar projections from the walls shall be constructed of noncombustible materials as specified in this section. Penthouses and other roof structures shall be of not less than 1-hour fire-resistive construction as specified in section Ind 51.04.

(6) Roof coverings shall be class "B" or equal.

History: 1–2–56; r. and recr. Register, September, 1959, No. 45, eff. 10–1–59; am. (1), (3) and (5), and cr. (6), Register, February, 1971, No. 182, eff. 7–1–71; r. (6) and r. and recr. (1) (3) and (5) eff. 8–1–71 and expiring 1–1–72; and cr. (1), (3), (5) and (6) eff. 1–1–72, Register, July, 1971, No. 187.

Ind 51.03 Frame construction. (1) A building is of frame construction if the structural parts and enclosing walls are of wood, or of wood in combination with other materials. If such enclosing walls are veneered, encased or faced with stone, brick, tile, concrete, plaster or metal, the building is also termed a frame building.

(2) Roof coverings shall be class "C" or equal.

History: 1–2–56; cr. (2), Register, February, 1971, No. 182, eff. 7–1–71; eff 8–1–71; cr. (2) eff. 1–1–72, Register, July, 1971, No. 187.

Ind 51.04 History: 1–2–56; r. Register, February, 1971, No. 182, eff. 7–1–71; cr. Register, July, 1971, No. 187, eff. 8–1–71 and expiring 1–1–72.

Sections Ind 51.001, Ind 51.01, Ind 51.02 and Ind 51.03 to be recreated to become effective January 1, 1973.

SPECIAL NOTICE!

THE FOLLOWING RULES FOR "DEFINITIONS AND STANDARDS," SECTIONS IND 51.001, IND 51.01, IND 51.02 AND IND 51.03, WILL BECOME EFFECTIVE JANUARY 1, 1973.

Ind 51.001 Scope. This section covers minimum standards for common types of building designs currently being constructed. This section does not specifically include classification for uncommon building designs such as shells, domes, space frames, inflatable and similar types of designs. The standards contained herein shall be used as a guide for such uncommon building designs to achieve the degree of safety intended by these standards.

Ind 51.01 Definitions.

(1) Air Conditioning. The process of treating air to control simultaneously its temperature, humidity, cleanliness and distribution to meet the requirements of the conditioned space.

(2) Alley. Any legally established public thoroughfare less than thirty (30) feet in width but not less than ten (10) feet in width whether designated by name or number.

(3) Approved. Approval granted by the department under the regulations stated in this code.

(4) Area (gross). The maximum horizontal projected area within the perimeter of the outside surface of walls or supports of the building or structure. Exterior cantilever open balconies are not included.

(5) Area (net). The occupied or usable floor area in a building but not including space occupied by columns, walls, partitions, mechanical shafts or ducts.

(6) Attic. The space not used for human occupancy located between the ceiling of uppermost story and the roof.

(7) Automatic. Automatic as applied to a fire protective device, is one which functions without human intervention and is actuated as a result of the predetermined temperature rise, rate of rise of temperature, combustion products or smoke density such as an automatic sprinkler system, automatic fire door, automatic fire shutter, or automatic fire vent.

(8) Balcony (exterior). An elevated platform attached to a building and enclosed on one or more sides by railings.

(9) Balcony (interior). An open intermediate level or stepped floor. Also see "Stories, Number of."

(10) Basement. See "Stories, Number of."

(11) Bearing Wall. See "Wall (bearing)."

(12) Building.* A structure for support, shelter or enclosure of persons or property.

(13) Building Height. See "Height (building)."

(14) Buttress. A structural projection which is an integral part of a wall, primarily to provide resistance to lateral forces.

(15) Cavity Wall. See "Wall (cavity)."

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*See Appendix A for further explanatory material.

(16) Ceiling Protection. The fire protection membrane suspended beneath the floor or ceiling construction which, when included with the construction, develops the fire-resistive rating for the overall assembly.

(17) Closing Device (fire door). A closing device is one which will close the door and be adequate to latch and/or hold hinged or sliding door in a closed position.

(a) Automatic. An automatic closing device is one which functions without human intervention and is actuated as a result of the predetermined temperature rise, rate of rise of temperature, combustion products or smoke density.

(b) Self-closing. A self-closing device is one which will maintain the door in a closed position.

(18) Combustible Construction. An assembly such as a wall, floor or roof having components of combustible material.

(19) Combustible Material. All materials not classified as "noncombustible" are considered combustible. This property of a material does not relate to its ability to structurally perform under fire exposure. The degree of combustibility is not defined by standard fire test procedures.

(20) Concrete. See "Types of Concrete," subsection Ind 51.045(1)(a).

(21) Construction. Includes all labor and materials used in the framing or assembling of component parts in the erection, installation, enlargement, alteration, repair, moving, conversion, razing, demolition or removal of any appliance, device, building, structure or equipment.

(22) Corridor. An enclosed passageway in a building for public ingress and egress to and from dwelling units, rooms or other areas and leading to a lobby, foyer or exit discharge.

(23) Court (exit). An exterior court providing a pathway for public egress from an exit to a public thoroughfare.

(24) Court (inner). An open air shaft or court surrounded on all sides by walls.

(25) Court (inner lot line). A court bounded on 3 sides by walls and on the remaining side by a lot line or property line.

(26) Court (outer). A court bounded on 3 sides with walls and on the remaining side by a street, alley or other open space not less than 15 feet wide.

(27) Court (outer lot line). A court with one side on a lot line or property line and opening to a street or open space not less than 15 feet wide.

(28) Curtain Wall. See "Wall (curtain)."

(29) Department. Means the department of industry, labor and human relations.

(30) Division Wall. See "Wall (division)."

(31) Duct. Any pipe, flue, or tunnel used to convey air, gases and entrained materials. An underground duct is any part of a duct that is below the surface of the ground.

(32) Duct Furnace. See "Furnace (duct)."

(33) Elevator. See Wis. Adm. Code, Chapter Ind 4.

(34) Equipment. Self-contained systems and apparatus attached to or built into the building and used for mechanical or electrical processing, comfort, safety, sanitation, communication or transportation within a building.

(35) Exhaust Ventilating System. See "Ventilating System (exhaust)."

(36) Existing. A building, structure, or equipment completed or in the course of construction or use or occupied prior to the effective date of applicable rules of this code.

(37) Exit Court. See "Court (exit)."

(38) Exit Discharge Grade. See "Grade (exit discharge)."

(39) Exit (vertical). See "Vertical Exit."

(40) Exterior Balcony. See "Balcony (exterior)."

(41) Exterior Wall. See "Wall (exterior)."

(42) Family.* Means 2 or more individuals who are related to each other by blood, marriage, adoption or legal guardianship. For purposes of this code a group of not more than 4 persons not necessarily related by blood or marriage, living together in a single living unit will be considered equivalent to a single family.

(43) Fire Door. A door so constructed as to give protection against the passage of fire.

(44) Fire Door Assembly. The assembly of fire door and its accessories, including all hardware, frames, closing devices and their anchors, so constructed as to give protection against the passage of fire.

(45) Fire Door Closing Device. See "Closing Device (fire door)."

(46) Fire Resistance and Fire-Resistive Material. Having the property to withstand fire or give protection from it. As applied to elements of building, it is characterized by the ability to confine a fire or to continue to perform a given structural function, or both.

(47) Fire-Resistive Classification. Fire-resistive classification is the time in hours during which a material or assembly continues to exhibit fire resistance under conditions of tests and performance as specified in ASTM E-119, ASTM E-152 and ASTM E-163.

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*See Appendix A for further explanatory material.

(48) Fire-Resistive Protection. An insulating material applied directly, attached to, or suspended from a structural assembly, to maintain the structural integrity of a member or system for the specified time rating.

(49) Fire-Resistive Protection, Directly Applied. A coating material applied directly to the structural element for the purpose of fire protection.

(50) Fire-Resistive Rating. Refer to fire-resistive classification.

(51) Fire-Retardant Roof Coverings. Roof coverings shall be classified on the basis of protection provided against fire originating outside the building or structure on which they have been installed.

(a) Class A roof coverings are those which are effective against severe fire exposures (meeting the 3 methods for fire tests of class A roof coverings [ASTM Standard E-108]) and possess no flying brand hazard.

(b) Class B roof coverings are those which are effective against moderate fire exposures (meeting the 3 methods for fire tests of class B roof coverings [ASTM Standard E-108]) and possess no flying brand hazard.

(c) Class C roof coverings are those which are effective against light fire exposures (meeting the 3 methods for fire tests of class C roof coverings [ASTM Standard E-108]) and possess no flying brand hazard.

(52) Fire Retardant--Treated Wood. Fire-retardant wood includes lumber or plywood that has been treated with a fire-retardant chemical to provide classifications (flame-spread [FSC] and fuel contributed [FCC]) of 25 or less by ASTM method E-84, shows no progressive combustion during 30 minutes of fire exposure by this method, and is so labeled. Fire-retardant wood for decorative and interior finish purposes provides reduced flame-spread classification (FSC) by ASTM method E-84 as specified by the code for materials used in the particular applications.

(53) Fire Window Assembly. A fire window includes glass, frame, hardware and anchors constructed and glazed to give protection against the passage of flame.

(54) First Floor. See "Stories, Number of."

(55) Flame-Spread Classification. Flame-spread classification (FSC) is a comparative rating of the measure of flame-spread on a surface of a material or assembly as determined under conditions of tests and performance as specified in ASTM E-84.

(56) Flame-Spread Rating. Refer to flame-spread classification.

(57) Floor Area. See "Area (net)."

(58) Foyer. An enclosed space and passageway into which aisles, corridors, stairways, or elevators may exit and from which the public has access to exits.

(59) Front Yard. See "Yard (front)."

(60) Fuel Contributed Classification. Fuel contributed classification (FCC) is a comparative measure of the fuel contribution of a material or an assembly in the flame-spread test per ASTM E-84.

(61) Furnace. A completely self-contained direct-fired, automatically controlled, vented appliance for heating air by transfer of heat of combustion through metal to the air and designed to supply heated air through ducts to spaces remote from the appliance location.

(62) Furnace (duct). A suspended direct-fired heating appliance normally installed in air ducts. Air circulation is provided by a blower not furnished as part of the appliance.

(63) Grade (at building). Elevation of surface of paved or unpaved ground adjacent to wall of a building.

(64) Grade (exit discharge). The elevation of finished exterior surface of paved or unpaved ground at any exit discharge doorsill.

(65) Gravity Exhaust Ventilation. See "Ventilation (gravity exhaust)."

(66) Gross Area. See "Area (gross)."

(67) Ground Floor. See "Stories, Number of."

(68) Hazardous Piping. See "Piping (hazardous)."

(69) Heating System. Any combination of building construction, machinery, devices or equipment, so proportioned, arranged, installed, operated, and maintained as to produce and deliver in place the required amount and character of heating service.

(70) Height (building). Height of a building is measured from the average of the exit discharge grade elevation of all required first story exits to the top of a level roof or to a point 1/2 of the distance between the intersection of the exterior wall surface (extended) with the roof surface, and the highest part of the roof but not to include penthouses.

NOTE: For exceptions to penthouses see definition "Stories, Number of."

(71) Hollow Bonded Wall. See "Wall (hollow bonded)."

(72) Inner Court. See "Court (inner)."

(73) Inner Lot Line Court. See "Court (inner lot line)."

(74) Intake (outside air). See "Outside Air Intake."

(75) Interior Balcony. See "Balcony (interior)."

(76) Jacketed Stove. See "Stove (jacketed)."

(77) Lobby. An enclosed space into which aisles, corridors, stairways, elevators or foyer may exit and provides access to exits.

(78) Lot Line. A legally established line dividing one lot, plot of land or parcel of land from an adjoining lot or plot of land or parcel of land.

(79) Major Apparatus. Central air-handling equipment supplying more than one occupancy or rooms and heat-producing equipment generating heat for the heating and ventilating system.

(80) Masonry. A construction composed of separate units such as brick, block, hollow tile, stone or approved similar units or a combination thereof, laid up or built unit by unit and bonded by approved manner.

(81) Mechanical Ventilation. See "Ventilation (mechanical)."

(82) Mezzanine or Mezzanine Floor. An intermediate floor, either open or enclosed. Also see "Stories, Number of."

(83) Net Area. See "Area (net)."

(84) Nonbearing Wall. Refer to "Wall (exterior)" or "Partition."

(85) Noncombustible Construction. An assembly such as a wall, floor or roof having components of noncombustible material.

(86) Noncombustible Material. A noncombustible material is one which, in the form in which it is used, meets one of the requirements (a), (b) or (c) listed below. Materials used adjacent to or in contact with heat-producing appliances, warm air ducts, plenums and chimneys shall be classified as noncombustible only on the basis of requirement (a). Noncombustible does not apply to the flame-spread characteristics of interior finish or trim materials. No material shall be classed as noncombustible building construction material which is subject to increase in combustibility or flame-spread classification (FSC) beyond the limits herein established through the effects of age, moisture or other atmospheric conditions.

(a) Materials which pass the test procedure of ASTM E-136 for defining noncombustibility of elementary materials when exposed to a furnace temperature of 1,382 degrees F. for a minimum period of 5 minutes, and do not cause a temperature rise of the surface or interior thermocouples in excess of 54 degrees F. above the furnace air temperature at the beginning of the test and which do not flame after an exposure of 30 seconds.

(b) Materials having a structural base of noncombustible material as defined in paragraph (a), with a surfacing not more than 1/8 inch thick which has a flame-spread classification (FSC) not greater than 50 when tested in accordance with the method of test for surface burning characteristics of building materials (ASTM E-84).

(c) Materials other than defined in paragraphs (a) and (b), having a flame-spread classification (FSC) not greater than 25 without evidence of continued progressive combustion, and of such composition that surfaces that would be exposed by cutting through the material in any way would not have a flame-spread classification (FSC) greater than 25 when tested in accordance with the method of test for surface burning characteristics of building materials (ASTM E-84).

(87) Occupancy or Use. The purpose for which a building, structure, equipment, materials, or premises, or part thereof, is used or intended to be used as regulated in this code.

(88) Occupied. Refers to any room or enclosure used by one or more persons for other than incidental maintenance.

(89) Open Spaces. Front (setback), rear and side yards, exit courts, outer courts, and outer lot line courts on the same property with a building as regulated by this code.

(90) Outdoor Openings. May be doors, windows or skylights located in outside walls or roof and can be opened to provide natural ventilation to the occupied space.

(91) Outer Court. See "Court (outer)."

(92) Outer Lot Line Court. See "Court (outer lot line)."

(93) Outlet (supply opening). An opening, the sole purpose of which is to deliver air into any space to provide heating, ventilating or air conditioning.

(94) Outside Air. Air that is taken from outside the building and is free from contamination of any kind in proportions detrimental to the health or comfort of the persons exposed to it.

(95) Outside Air Intake. Includes the ducts and outdoor openings through which outside air is admitted to a ventilating, air conditioning or heating system.

(96) Panel Wall. See "Wall (panel)."

(97) Partition. An interior nonbearing vertical element serving to enclose or divide an area, room or space.

(98) Party Wall. See "Wall (party)."

(99) Penthouse. An enclosed or partially enclosed structure extending above the main roof of a building or structure and/or enclosing a stairway, tank, elevator, machinery, mechanical equipment or other apparatus and not used for human occupancy.

(100) Pier. An isolated column of masonry or concrete. A section of bearing wall not bonded on the sides into adjoining masonry shall be considered to be a pier when its horizontal dimension measured at right angles to the thickness does not exceed 4 times the thickness.

(101) Pilaster. A projection of masonry for the purpose of bearing concentrated loads, or to compensate for reduction of wall section by chases, openings or recesses, or for the purpose of stiffening the wall against lateral forces. (See also "Buttress.")

(102) Piping (hazardous). Any service piping conveying oxygen, flammable liquids, flammable gases or toxic gases.

(103) Porch. An unenclosed exterior structure at or near grade attached or adjacent to the exterior wall of any building, and having a roof and floor. (See also "Terrace" and "Balcony.")

(104) Property Line. A legally established line dividing one lot, plot of land or parcel of land under one ownership from an adjoining lot or plot of land or parcel of land under another ownership.

(105) Public Thoroughfare. Any legally established street or alley as defined herein.

(106) Required. A term for mandatory use under the provisions of this code.

(107) Restrained Support. A flexural member where the supports and/or the adjacent construction provides complete or partial restraint against rotation of the ends of the member and/or partial restraint against horizontal displacement when subject to a gravity load and/or temperature change.

(108) Retaining Wall. See "Wall (retaining)."

(109) Return (or exhaust opening). Any opening, the sole purpose of which is to remove air from any space being heated, ventilated or air conditioned.

(110) Roadway. That portion of a public thoroughfare devoted to vehicular traffic, or that part included between curbs.

(111) Roof. The structural cover of a building with a slope range bearing from horizontal to a maximum of 60 degrees to the horizontal.

(112) Roof Covering. Refers to the covering applied over the roof construction for the purpose of weather or fire resistance.

(113) Roof Coverings (fire-retardant). See "Fire-Retardant Roof Coverings."

(114) Room. A space within a building completely enclosed with walls, partitions, floor and ceiling, except for openings for light, ventilation, ingress and egress.

(115) Setback.* Refers to the open space between the property line or public thoroughfare and the nearest part of the building. Unenclosed terraces, slabs, or stoops without roofs or walls may project into this open space or setback.

(116) Shaft. A vertical opening in a building extending through one or more stories and/or roof, other than an inner court.

(117) Shall. A term for mandatory use under the provisions of this code.

(118) Signs. A structure that is intended, designed, or used for advertising, display, identification, announcements, or related purposes; this includes signs, screens, billboards, and other advertising devices of any type.

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*See Appendix A for further explanatory material.

(119) Simple Support. A flexural member where the supports and/or the adjacent construction allows free rotation of the ends of the member and horizontal displacement when subject to a gravity load and/or a temperature change.

(120) Space Heater (gravity or circulating type). A vented, self-contained free standing or wall recessed heating appliance using liquid or gas fuels. (Also see definition for "Stove (jacketed).")

(121) Stories, Number of.*

(a) The first floor is the highest level of a building which meets the following conditions:

1. Contains all required exit discharges for the first story and all stories above.

2. Is not over 6 feet above exit discharge grade.

3. Has sills of all required exit discharges 3 feet or less above exit discharge grade.

(b) A ground floor is that level of a building on a sloping or multi-level site which has its floor line at or not more than 3 feet above exit discharge grade at one or more exit discharges.

(c) A basement floor is that level below the first or ground floor level with its entire floor below exit discharge grade.

(d) An interior balcony or mezzanine floor which exceeds 25,000 square feet or one-third (1/3), whichever is least, of the net area enclosed within exterior walls and/or fire division walls shall be counted as a story.

NOTE: See occupancy sections of code for more restrictive limitations.

(e) The number of stories of a multistory building includes all stories except the basement(s), ground floor(s), attic or interior balcony(ies) and/or mezzanine floor(s) as limited in para. (d) above. Penthouse(s) with a total area that exceeds 50% of the roof area shall be counted as a story.

NOTE: For exception, see Ind 51.02(3)(b) 1. b.

(122) Story. The space in a building between the surfaces of any floor and the floor next above or below, or roof next above, or any space not defined as basement, ground floor, mezzanine, balcony, penthouse or attic. (Also see "Stories, Number of.")

(123) Stove (jacketed). A vented, self-contained free standing, non-recessed heating appliance, using solid, liquid or gas fuels. The effective heating is dependent on a gravity flow of air circulation over the heat exchanger. (Also see definition for "Space Heater.")

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*See Appendix A for further explanatory material.

(124) Street. Any legally established public thoroughfare 30 feet or more in width whether designated or not by name or number such as avenue, boulevard, circle, court, drive, lane, place, road or way. All-weather hard-surfaced areas 30 feet or more in width and extending at least 50% of the length of that side of building and accessible to fire-fighting equipment will be acceptable in lieu of streets.

(125) Structure. An assembly of materials forming a construction for occupancy or use (including, among others, buildings, stadiums, gospel or circus tents, reviewing stands, platforms, stagings, observation towers, radio and television towers, water tanks, trestles, piers, wharves, open sheds, coal bins, shelters, fences, and display signs).

(126) Support (restrained). See "Restrained Support."

(127) Support (simple). See "Simple Support."

(128) Tempered Air. Air transferred from heated area of building.

(129) Tempered Outside Air. Outside air heated before distribution.

(130) Terrace. An unenclosed exterior structure at or near grade having a paved, floored, or planted platform area adjacent to an entrance or to the exterior walls for a building or structure and having no roof.

(131) Treated Wood (fire-retardant). See "Fire Retardant--Treated Wood."

(132) Unit Heater (high static pressure type). A direct-fired suspended or floor standing, self-contained, automatically controlled and vented, heating appliance having an integral means for circulation of air against 0.2 inch or greater static pressure.

(133) Unit Heater (low static type). A direct-fired suspended, self-contained automatically controlled, vented heating appliance, having integral means for circulation of air by means of a propellor fan or fans.

(134) Veneered Wall. See "Wall (veneered)."

(135) Ventilating System (exhaust). Any combination of building construction, machinery, devices or equipment, designed and operated to remove harmful gases, dusts, fumes or vitiated air, from the breathing zone of employes and frequenters.

(136) Ventilation. The process of supplying or removing air by natural or mechanical means, to or from any space.

(137) Ventilation (gravity exhaust). A process of removing air by natural means, the effectiveness depending on atmospheric condition, such as difference in relative density, difference in temperature or wind motion.

(138) Ventilation (mechanical). The process of supplying or removing air by power-driven fans or blowers.

(139) Vertical Exit. A means of egress used for ascension or descension between 2 or more floors, or other levels, and shall include approved exterior stairways, automatic (moving) stairways, fire escapes, ramps, stairways, and smokeproof stair towers.

(140) Wall. A structural element which is vertical or within 30 degrees of vertical, serving to enclose space, form a division, or support superimposed weight.

(141) Wall (bearing). Any wall which supports a load in addition to its own weight.

(142) Wall (cavity). A wall built of masonry units or of plain concrete, or a combination of these materials, so arranged to provide an air space within the wall, and in which the facing and backing (inner and outer parts) of the wall are tied together with metal ties.

(143) Wall (curtain). An exterior nonbearing wall.

(144) Wall (division).

(a) Building division. A wall used for separation between 2 buildings on the same property identical in construction to a party wall.

(b) Fire division. A wall extending from the lowest floor level to or through the roof to restrict the spread of fire.

(145) Wall (exterior). Any outer enclosing wall of a building or structure.

(146) Wall (framing). Wall framing shall include columns, studs, beams, girders, lintels and girts.

(147) Wall (hollow bonded). Wall built of masonry units with or without any air space within the wall, and in which the facing and backing of the wall are bonded together with masonry units.

(148) Wall (nonbearing exterior). Wall which supports no vertical load other than its own weight.

(149) Wall (panel). An exterior nonbearing wall in skeleton construction.

(150) Wall (parapet). That part of a wall entirely above the roof line.

(151) Wall (party).* Walls used for separation between 2 buildings on the property line between adjoining properties.

(152) Wall (retaining). Wall used to resist laterally imposed pressures.

(153) Wall (veneered). Wall having facing which is attached to the backing but not so bonded as to exert common action under load.

(154) Yard (front). An open, unoccupied space unobstructed to the sky, extending across the full width of a lot, or plot of land between the street line and the base of a front building wall. Unenclosed terraces, slabs or stoops without roofs or walls may project into this open space.

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*See Appendix A for further explanatory material.

Ind 51.02 General requirements. (1) The fire-resistive ratings shown in "Classes of Construction" table 51.03-A are to satisfy the structural integrity end point for the time specified. For heat transmission end point requirements see subsection Ind 51.042(5).

(2) Substitution of a building element fire-resistive rating will be permitted in any class of construction providing it is equal to or better than the required fire-resistive rating as specified in table 51.03-A.

(a) Construction requiring the use of noncombustible material shall not be replaced by combustible construction regardless of fire-resistive rating.

(b) Noncombustible construction may be substituted for combustible construction provided the fire-resistive rating indicated in table 51.03-A is equal to or better than that noted for combustible construction.

(3) Exterior wall construction.

(a) All exterior walls which are in contact with the soil shall be of masonry or concrete.

(b) Exposed exterior walls between the first floor structural system and grade shall be of masonry or concrete except as follows:

1. Walls may be constructed of material other than masonry or concrete providing the following conditions are satisfied:

a. The construction shall meet the requirements of table 51.03-A for specified class of construction.

b. Any portion of exposed wall above grade and below the first floor structural system, when other than masonry or concrete, shall be counted as a story, and is also considered when determining height of wall.

(4) Roof coverings, skylights and skydomes.

(a) There shall be no restriction in use of glass or other noncombustible material when satisfying minimum requirements for roof coverings.

(b) Where combustible plastic is used in roof openings it shall not exceed an area greater than 20% of the roof area except as permitted under occupancy sections.

1. No individual dome or group of domes or skylights shall exceed 100 square feet.

a. Domes or groups of domes or skylights shall be separated from each other by at least 8 feet laterally and 10 feet along the slope of the roof.

(5) Building locations.

(a) When the distance between buildings located on the same property is less than 10 feet, the following shall apply:

1. Where the combined gross area for these buildings is less than that allowable for one building the exterior wall shall satisfy minimum requirements listed for class of construction in table 51.03-A.

a. Buildings classified as wood frame under subsections Ind 51.03 (7) or (8) shall have exterior walls with a fire-resistive rating of not less than that required for these buildings when satisfying the 10 feet to 30 feet distance to property line shown in table 51.03-A.

2. Where the combined gross area for these buildings is greater than that allowable for one building, one of the opposing walls shall be not less than a 4-hour fire-resistive rated fire division wall or building division wall, whichever applies. Where buildings are of different classes of construction, the lesser allowable gross area shall apply.

(6) Interior balcony or mezzanine. Interior balconies or mezzanine floors shall have fire-resistive ratings as required for the story in which it is located.

(7) No pipes, wires, cables, ducts or other service equipment shall be imbedded lengthwise in the required fire-resistive protection of any structural member except as allowed in approved fire rated assemblies.

(8) Exposed exterior structural columns and framing. The required fire-resistive hourly rating may be omitted on noncombustible columns and framing when the building does not exceed 2 stories and the fire separation to the center of a street, or to the property line or buildings on the same property, is greater than 30 feet.

(9) Stairways, elevators and vertical shafts which serve 3 or more floor levels shall be enclosed with fire-resistive rated construction equal to or better than requirements specified in table 51.03-A.

(10) Parapet walls.

(a) Parapet walls not less than 8 inches in thickness and 2 feet in height shall be provided on all exterior walls of masonry or concrete, where such walls connect with roofs other than roofs that are of noncombustible construction throughout; but this section shall not apply to:

1. Buildings where type No. 7 and No. 8 construction would be permitted under the provisions of this code;

2. Walls which face streets or alleys;

3. Walls where not less than 10 feet of vacant space is maintained between the wall and the property line;

4. Walls which are not less than 10 feet from other buildings on the same property.

(b) All parapet walls shall be properly coped with noncombustible weather-proof material.

(c) Parapet walls not less than 8 inches in thickness and 3 feet in height shall be provided on all division and party walls of masonry or concrete where such walls connect with roofs of other than 2-hour noncombustible fire-resistive construction, or better.

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TABLE 51.03-B

MAXIMUM TOTAL ALLOWABLE AREA OF WINDOWS OR OTHER WALL OPENINGS
WITHOUT FIRE PROTECTION IN PERCENT OF TOTAL EXPOSED EXTERIOR WALL SURFACE

Setback from Property Line, or Other Walls on Same Property*	Class of Construction				
	1. Fire-Resistive "A" 2. Fire-Resistive "B" 3. Metal Frame Protected 4. Heavy Timber 5. Exterior Masonry		6. Metal Frame Unprotected	7. Wood Frame Protected	8. Wood Frame Unprotected
	Bearing Wall	Nonbearing Wall			
Less than 5'	No Openings	No Openings	No Openings	Not Permitted	Not Permitted
5' to less than 10'	20%--Fire window rqd.†	30%--Fire window rqd.†	30%	Not Permitted	Not Permitted
10' to less than 30'	30%	40%	40%	40%	40%
30' or over	40%	No Limit	No Limit	No Limit	No Limit

Openings with approved automatic-closing, 3-hour fire door or shutter assemblies--No Limit.

Tabulated percentage of openings shall be applied to each 100 lineal feet of wall.

*Does not apply to property lines along streets.
†Fire windows shall be as required for moderate fire exposure--see Ind 51.047.
This tabulation will not allow wing walls or high parapets, etc., to be used to increase exposed wall areas and thereby increase allowable total area of openings.

Ind 51.03 Classes of construction standards. (1) Fire resistive type A (No. 1).

(a) A building is of fire-resistive construction if all the walls, partitions, piers, columns, floors, ceilings, roof and stairs are built of noncombustible material, with a fire-resistive rating as specified in table 51.03-A.

1. Concealed draft openings in columns, walls and partitions shall be firestopped with noncombustible material at each floor level.

(b) All buildings of this classification shall not be restricted in height.

(c) Stairs and stair platforms shall be constructed of noncombustible material.

(d) Doors and windows may be of wood except as otherwise specified in table 51.03-B, or the occupancy chapters of the code, or sections Ind 51.17, 51.19 and 51.20.

(e) Bays, oriels, and similar exterior projections from the walls shall be constructed of material with fire-resistive ratings as required for exterior walls.

1. Mansards shall be of noncombustible construction.

a. The wall construction behind mansard shall extend to underside of roof deck and shall have a fire-resistive rating of not less than that specified for exterior walls in table 51.03-A.

(f) Penthouses and other roof structures shall have enclosing walls of noncombustible construction and roof framing and coverings shall be equal to that specified in table 51.03-A. Wood cooling towers are permitted.

(g) Wood may be used for finished floors, trim and wall paneling if open spaces behind the material are completely firestopped with noncombustible materials unless prohibited under the occupancy requirements of this code.

(h) Acoustical materials may be used on ceilings and walls provided they are noncombustible and the open spaces between furring on walls are completely firestopped with noncombustible material.

(i) In required fire-resistive floor and roof assemblies one electric outlet box, not exceeding 16 square inches in area, may be installed in such ceilings in each 90 square feet of ceiling area. Recessed electric fixtures shall have protection boxes built above the fixture, constructed of approved fire-resistant material of rating equal to that of the ceiling, to cover the opening in case fixture is displaced. Duct openings in ceilings shall be protected by fire dampers.

(2) Fire-resistive type B (No. 2).

(a) A building is of fire-resistive construction if all the walls, partitions, piers, columns, floors, ceilings, roof and stairs are built of noncombustible material, with a fire-resistive rating as specified in table 51.03-A.

(b) All buildings of this classification shall not exceed a height of 85 feet, in which height there shall be not more than 8 stories.

(c) Roofs. Where roof framing is greater than 20 feet above the floor, or highest level of any balcony, roof decks may be:

1. Matched or splined wood roof decking of not less than 2 inches in nominal thickness; or

2. Solid lumber not less than 3 inches in nominal thickness, set on edge securely fastened together; or

3. Approved 1-1/8 inch thick plywood with exterior glue, tongue and groove with all end joints staggered and butting on centers of beams spaced not over 4 feet apart; or

4. Other forms of roof decks, if of noncombustible material.

(d) Stairs and stair platforms shall be constructed of noncombustible material.

(e) Doors and windows may be of wood except as otherwise specified in table 51.03-B, or the occupancy chapters of the code, or sections Ind 51.17, 51.19 and 51.20.

(f) Bays, oriels, and similar exterior projections from the walls shall be constructed of material with fire-resistive ratings as required for exterior walls.

1. Mansards shall be of noncombustible construction.

a. The wall construction behind mansard shall extend to underside of roof deck and shall have a fire-resistive rating of not less than that specified for exterior walls in table 51.03-A.

(g) Penthouse and other roof structures shall have enclosing walls of noncombustible construction and roof framing and coverings shall be equal to that specified in table 51.03-A. Wood cooling towers are permitted.

(h) Wood may be used for finished floors, trim and wall paneling if open spaces behind the material are completely firestopped with noncombustible materials unless prohibited under the occupancy requirements of this code.

(i) Acoustical materials may be used on ceilings and walls provided they are noncombustible and the open spaces between furring strips on walls are completely firestopped with noncombustible material.

(3) Metal frame--protected (No. 3).

(a) A building is of metal frame protected construction if the structural parts and enclosing walls are of metal, or metal in combination with other noncombustible materials, with time resistance ratings as set forth in table 51.03-A.

(b) All buildings of this classification shall not exceed a height of 75 feet, in which height there shall be not more than 4 stories.

(c) Stairs and stair platforms shall be constructed of noncombustible material.

(d) Bays, oriels and similar exterior projections from the walls shall be constructed of material with fire-resistive ratings not less than that specified for exterior walls in table 51.03-A.

1. Mansards shall be of noncombustible construction.

a. The wall construction behind mansard shall extend to underside of roof deck and shall have a fire-resistive rating of not less than that specified for exterior walls in table 51.03-A.

(4) Heavy timber (No. 4).

(a) A building is of heavy timber construction if the structural frame consists of heavy timber or heavy timber in combination with metal, reinforced concrete or masonry. The structural and enclosing wall shall be as set forth in table 51.03-A.

(b) All buildings of this classification shall not exceed a height of 75 feet, in which height there shall be not more than 4 stories.

(c) Columns.

1. Wood columns shall be not less than 8 inches, nominal, in any dimension when supporting floor loads and not less than 6 inches, nominal, in least dimension and not less than 8 inches, nominal, in other dimension when supporting roof loads only.

2. All wood columns in the structural frame shall be superimposed, end to end, one above the other, and joined by metal or wood connectors.

NOTE: See structural section Ind 53 for design requirements.

(d) Floor framing.

1. Beams and girders of wood shall be not less than 6 inches, nominal, in any dimension and not less than 45 square inches in actual cross-sectional area.

2. Wood arches which support floor loads shall be not less than 8 inches, nominal, in any dimension.

3. Framed timber trusses supporting floor loads shall have members of not less than 8 inches, nominal, in any dimension.

4. Floor framing and structural framing of material other than wood shall have a fire-resistive protection of not less than one hour.

(e) Roof framing.

1. Beams and girders of wood shall be not less than 6 inches, nominal, in any dimension and not less than 45 square inches in actual cross-sectional area.

2. Wood arches, timber trusses, purlins and rafters for roof construction shall have members not less than 4 inches, nominal, in width and not less than 6 inches, nominal, in depth. Spaced members may be composed of 2 or more pieces not less than 3 inches, nominal, in thickness when blocked solidly throughout their intervening spaces or when such spaces are tightly closed by a continuous wood cover plate of not less than 2 inches, nominal, in thickness, secured to the underside of the members. Splice plates shall be not less than 3 inches, nominal, in thickness.

3. The roof framing and structural framing of material other than wood, in a one-story building less than 20 feet above the floor, shall have a fire-resistive protection of not less than one hour.

(f) Floors.

1. Wood floor construction shall be tongued and grooved, or splined lumber not less than 3 inches nominal thickness, or of solid lumber placed on edge and securely fastened together to make a floor not less than 4 inches, nominal, in thickness. A top layer of flooring of one inch nominal thickness shall be placed over all such floor construction.

(g) Stair construction may be of wood in buildings not exceeding 3 stories in height. In 4-story buildings, all stairs, platforms and stair construction shall be constructed of noncombustible material.

(h) Roofs. Roof decks shall be:

1. Matched or splined wood roof decking of not less than 2 inches in nominal thickness; or

2. Solid lumber not less than 3 inches in nominal thickness, set on edge securely fastened together; or

3. Approved 1-1/8 inch thick plywood with exterior glue, tongue and groove with all end joints staggered and butting on centers of beams spaced not over 4 feet apart; or

4. Other forms of roof decks, if of noncombustible material.

(5) Exterior masonry (No. 5).

(a) A building is of exterior masonry construction if all enclosing walls are constructed of masonry or reinforced concrete with fire-resistive ratings as set forth in table 51.03-A.

(b) All buildings of this classification shall not exceed a height of 50 feet, in which height there shall be not more than 4 stories.

(c) The interior structural framing shall be metal, reinforced concrete, masonry or wood. Fire protection of metal or wood structural members may be omitted except that all such members supporting load-bearing masonry in all parts of buildings of more than one story shall be of metal, reinforced concrete or masonry with not less than one-hour fire-resistive protection of supporting metal.

(d) In walls where fire protection is required, the bottom of lower flange of lintels supporting load-bearing masonry shall be protected for openings exceeding 12-foot spans.

(e) Floors, roofs, partitions and stairs may be of wood but no joist, rafter, stud or stringer shall be less than 2 inches in nominal thickness.

(f) Bays, oriels and similar exterior projections from the walls shall be constructed of material with fire-resistive ratings as required for exterior walls or approved fire-retardant treated wood.

(g) Where exterior overhangs are closer than 20 feet to the adjoining property line or other building on the same property, exterior wood siding, trim and shingles of projecting canopies, cornices, roof overhangs, dormers and mansard roofs may be used if the construction complies with the following:

1. All exposed material shall be approved fire-retardant treated wood or noncombustible material.

2. Exterior masonry walls shall extend to the underside of roof rafters or joists or bearing points of beams and trusses.

3. Spaces between rafters, joists, beams or trusses shall be fire-stopped with nominal 2-inch wood blocking or rigid noncombustible material to the underside of the roof decking.

(h) Penthouses and other roof structures shall have enclosing walls of noncombustible construction and roof framing and coverings shall be equal to that specified in table 51.03-A.

(6) Metal frame--unprotected (No. 6).

(a) A building is of metal frame unprotected construction if the enclosing walls are of unprotected metal or unprotected metal in combination with other noncombustible materials and the other building elements are as set forth in table 51.03-A.

(b) All buildings of this classification shall not exceed a height of 50 feet, in which height there shall be not more than 3 stories.

(c) Stairs and stair platforms may be of wood with stringers not less than 2 inches in nominal thickness.

(d) Bays, oriels and similar exterior projections from the walls shall be constructed of material with fire-resistive ratings not less than that specified for exterior walls in table 51.03-A.

(7) Wood frame--protected (No. 7).

(a) A building is of wood frame protected construction if the structural parts and enclosing walls are of protected wood, or protected wood in combination with other materials, with fire-resistive ratings as set forth in table 51.03-A. If such enclosing walls are veneered, encased or faced with stone, brick, tile, concrete, plaster or metal, the building is also termed a wood frame protected building.

(b) Floors, roofs, partitions and stairs may be of wood but no joist, rafter, stud or stringer shall be less than 2 inches in nominal thickness.

(c) All buildings of this classification shall not exceed a height of 40 feet, in which height there shall be not more than 2 stories.

(8) Wood frame--unprotected (No. 8).

(a) A building is of wood frame unprotected construction if the structural parts and enclosing walls are of unprotected wood, or unprotected wood in combination with other materials. If such enclosing walls are veneered, encased or faced with stone, brick, tile, concrete, plaster or metal, the building is also termed a wood frame unprotected building.

(b) All buildings of this classification shall not exceed a height of 35 feet, in which height there shall be not more than 2 stories.

(c) Floors, roofs, partitions and stairs may be of wood but no joist, rafter, stud or stringer shall be less than 2 inches in nominal thickness.

NOTE: SECTION IND 51.041 TO BE REPEALED EFFECTIVE JANUARY 1, 1973.

Ind 51.041 Definitions. (1) APPROVED. Means approval granted by the department of industry, labor and human relations.

(2) AUTOMATIC. Automatic as applied to a fire protective device, is one which functions without human intervention and is actuated as a result of the predetermined temperature rise, rate of rise of temperature, combustion products or smoke density such as an automatic sprinkler system, automatic fire door, automatic fire shutter, or automatic fire vent.

(3) CEILING PROTECTION. The fire protection membrane suspended beneath the floor or ceiling construction which, when included with the construction, develops the fire-resistive rating for the overall assembly.

(4) COMBUSTIBLE CONSTRUCTION. An assembly such as a wall, floor or roof having components of combustible material.

(5) CLOSING DEVICE (FIRE DOOR). A closing device is one which will close the door, and be adequate to latch and/or hold hinged or sliding door in a closed position.

(a) *Automatic.* An automatic closing device is one which functions without human intervention, and is actuated as a result of the predetermined temperature rise, rate of rise of temperature, combustion products or smoke density.

(b) *Self-closing.* A self-closing device is one which will maintain the door in a closed position.

(6) COMBUSTIBLE MATERIAL. All materials not classified as "noncombustible" are considered combustible. This property of a material does not relate to its ability to structurally perform under fire exposure. The degree of combustibility is not defined by standard fire test procedures.

(7) DEPARTMENT. Means the department of industry, labor and human relations.

(8) FIRE DOOR. A door so constructed as to give protection against the passage of fire.

(9) FIRE DOOR ASSEMBLY. The assembly of fire door and its accessories, including all hardware, frames, closing devices and their anchors, so constructed as to give protection against the passage of fire.

(10) FIRE-RESISTIVE CLASSIFICATION. Fire-resistive classification is the time in hours during which a material or assembly continues to exhibit fire resistance under conditions of tests and performance as specified in ASTM E-119, ASTM E-152 and ASTM E-163.

(11) FIRE-RESISTIVE RATING. Refer to fire-resistive classification.

(12) FIRE RESISTANCE AND FIRE-RESISTIVE MATERIAL. Having the property to withstand fire or give protection from it. As applied to elements of building, it is characterized by the ability to confine a fire or to continue to perform a given structural function, or both.

(13) FIRE-RESISTIVE PROTECTION. An insulating material applied directly, attached to, or suspended from a structural assembly, to maintain the structural integrity of a member or system for the specified time rating.

(14) FIRE-RESISTIVE PROTECTION, DIRECTLY APPLIED. A coating material applied directly to the structural element for the purpose of fire protection.

(15) FIRE-RETARDANT ROOF COVERINGS. Roof coverings shall be classified on the basis of protection provided against fire originating outside the building or structure on which they have been installed.

(a) Class A roof coverings are those which are effective against severe fire exposures (meeting the three methods for fire tests of class A roof coverings (ASTM Standard E-108)) and possess no flying brand hazard.

(b) Class B roof coverings are those which are effective against moderate fire exposures (meeting the three methods for fire tests of class B roof coverings (ASTM Standard E-108)) and possess no flying brand hazard.

(c) Class C roof coverings are those which are effective against light fire exposures (meeting the three methods for fire tests of class C roof coverings (ASTM Standard E-108)) and possess no flying brand hazard.

(16) FIRE RETARDANT—TREATED WOOD. Fire-retardant wood includes lumber or plywood that has been treated with a fire-retardant chemical to provide classifications (flame-spread (FSC) and fuel contributed (FCC)) of 25 or less by ASTM method E-84, shows no progressive combustion during 30 minutes of fire exposure by this method, and is so labeled. Fire-retardant wood for decorative and interior finish purposes provides reduced flame-spread classification (FSC) by ASTM method E-84 as specified by the code for materials used in the particular applications.

(17) FIRE WINDOW ASSEMBLY. A fire window includes glass, frame, hardware and anchors constructed and glazed to give protection against the passage of flame.

(18) FLAME-SPREAD CLASSIFICATION. Flame-spread classification (FSC) is a comparative rating of the measure of flame-spread on a surface of a material or assembly as determined under conditions of tests and performance as specified in ASTM E-84.

(19) FLAME-SPREAD RATING. Refer to flame-spread classification.

(20) FUEL CONTRIBUTED CLASSIFICATION. Fuel contributed classification (FCC) is a comparative measure of the fuel contribution of a material or an assembly in the flame-spread test per ASTM E-84.

(21) NONCOMBUSTIBLE CONSTRUCTION. An assembly such as a wall, floor or roof having components of noncombustible material.

(22) NONCOMBUSTIBLE MATERIAL. A noncombustible material is one which, in the form in which it is used, meets one of the requirements 1., 2. or 3. listed below. Materials used adjacent to or in contact with heat-producing appliances, warm air ducts, plenums and chimneys shall be classified as noncombustible only on the basis of requirement 1. Noncombustible does not apply to the flame-spread characteristics of interior finish or trim materials. No material shall be classed as noncombustible building construction material which is subject to increase in combustibility or flame-spread classification (FSC) beyond the limits herein established through the effects of age, moisture or other atmospheric conditions.

1. Materials which pass the test procedure of ASTM E-136 for defining noncombustibility of elementary materials when exposed to a furnace temperature of 1,382 degrees F. for a minimum period of 5 minutes, and do not cause a temperature rise of the surface or interior thermocouples in excess of 54 degrees F. above the furnace air temperature at the beginning of the test and which do not flame after an exposure of 30 seconds.

2. Materials having a structural base of noncombustible material as defined in paragraph 1., with a surfacing not more than ⅛ inch thick which has a flame-spread classification (FSC) not greater than 50 when tested in accordance with the method of test for surface burning characteristics of building materials (ASTM E-84).

3. Materials other than defined in paragraphs 1. and 2., having a flame-spread classification (FSC) not greater than 25 without evidence of continued progressive combustion, and of such composition that surfaces that would be exposed by cutting through the material in any way would not have a flame-spread classification (FSC) greater than 25 when tested in accordance with the method of test for surface burning characteristics of building materials (ASTM E-84).

(23) RESTRAINED SUPPORT. A flexural member where the supports and/or the adjacent construction provides complete or partial restraint against rotation of the ends of the member and/or partial restraint against horizontal displacement when subject to a gravity load and/or temperature change.

(24) SIMPLE SUPPORT. A flexural member where the supports and/or the adjacent construction allows free rotation of the ends of the member and horizontal displacement when subject to a gravity load and/or a temperature change.

NOTE: SECTIONS IND 51.12, IND 51.13 AND IND 51.14 TO BE REPEALED EFFECTIVE JANUARY 1, 1973.

Ind 51.12 Height of building. The height of a building is measured at the center line of its principal front, from the sidewalk grade (or, if setting back from the sidewalk, from the grade of the ground adjoining the building) to the highest part of the roof, if a flat roof, or to a point 2/3 of the height of the roof, if a gabled or hipped roof. If the grade of the lot or adjoining sidewalk in the rear or alongside of the building falls below the grade at the front, the height shall be measured at the center of the lowest side.

Ind 51.13 Basement; first floor; number or stories. A basement is that portion of a building whose floor level is more than 3½ feet below the average contact ground level at the exterior walls of the building. The next floor above shall be considered the first story. The number of stories of a building includes all stories except the basement.

History: 1-2-56; r. and recr. Register, February, 1971, No. 182, eff. 3-1-71.

Ind 51.14 Street; alley; court. (1) A street is any public thoroughfare 30 feet or more in width.

(2) An alley is any public thoroughfare less than 30 feet, but not less than 10 feet, in width.

(3) A court is an open, unoccupied space other than a street or alley and bounded on one or more sides by the walls of a building.

Subsection Ind 51.17(2) to be amended to read:

(2) The doors leading from the buildings to the balconies and from the balconies to the stairways shall be fire-resistive doors, and all openings within 10 feet of any building shall be protected with fire-resistive windows for moderate fire exposure, or fire-resistive doors as specified in section Ind 51.047.

NOTE: SUBSECTION IND 51.18(1) TO BE REPEALED EFFECTIVE JANUARY 1, 1973.

Ind 51.18 Interior enclosed stairway. (1) An interior enclosed stairway shall be completely enclosed with walls of not less than 2-hour fire-resistive construction as specified in section Ind 51.04, except that in ordinary or frame buildings and in mill or fire-resistive buildings not more than 3 stories in height 1-hour fire-resistive enclosures may be used. All doors opening into such enclosures shall be as specified in section Ind 51.047.

Effective January 1, 1973 subsection Ind 51.18(1) to be recreated to read:

(1) An interior enclosed stairway shall be completely enclosed as specified in table 51.03-A, and all doors opening into such enclosure shall be as specified in section Ind 51.047.

Subsection Ind 51.19(4) to be amended to read:

(4) All doors and windows within 10 feet of any balcony or bridge shall be fire-resistive windows for moderate fire exposure or fire-resistive doors as specified in section Ind 51.047, except that if such windows or doors are in the same plane, this requirement shall apply only to those within 5 feet of the balcony or bridge.

Subsection Ind 51.20(1)(a) to be amended to read:

(a) Every fire escape shall be placed against a blank wall if possible. If such a location is not possible then every wall opening which is less than 6 feet distant horizontally from any tread or platform of the fire escape shall be protected by a fire-resistive window for moderate fire exposure or by a fire-resistive door as specified in section Ind 51.047.

NOTE: SECTION 52.01 TO BE REPEALED EFFECTIVE JANUARY 1, 1973.

Ind 52.01 Height and class of construction. (1) All buildings higher than 75 feet above the adjacent grade shall be of fire-resistive construction.

(2) Buildings of mill construction shall not exceed a height of 75 feet in which height there shall not be more than 7 stories; provided, that the height of a building erected on sloping ground may be not to exceed 75 feet plus a vertical distance equal to the vertical change in slope along the length of any side of such building, but in no case shall such height exceed 85 feet above the adjacent finished ground level. Towers, other than tanks, spires and steeples erected as a part of the building and not used for habitation or storage may extend not to exceed 20 feet above such height limit.

(3) Buildings of ordinary construction shall not exceed a height of 50 feet in which height there shall be not more than 4 stories; provided, that the height of a building erected on sloping ground may be 50 feet plus a vertical distance equal to the vertical change in slope along and in the length of any side of such building, but in no case shall such height exceed 60 feet above the adjacent finished ground level. Towers, other than tanks, spires and steeples not exceeding 20% of the roof area, erected as a part of such building and not used for habitation or storage may extend not to exceed 15 feet above such height limit.

(4) Buildings of frame construction shall not exceed a height of 35 feet in which height there shall be not more than 2 stories, except as provided in section Ind 57.01; provided, that the height of a building erected on sloping ground may be 35 feet plus a vertical distance equal to the vertical change in slope along the length of any side of such building, but in no case shall such height exceed 40 feet above the adjacent finished ground level. Spires, towers, other than tanks, or steeples not exceeding 20% of the roof area, erected as a part of such building and not used for habitation or storage may extend not to exceed 20 feet above such height limit.

(5) In every building more than 4 stories in height, all doors, windows and other openings in outside walls shall be protected with fire-resistive doors or shutters or fire-resistive windows as specified in section Ind 51.047, unless such openings are on streets or on alleys or outer courts 20 feet or more in width.

NOTE: SECTION IND 52.04 TO BE REPEALED EFFECTIVE JANUARY 1, 1973.

Ind 52.04 Definitions of courts. (1) By inner court is meant an open air shaft or court surrounded on all sides by walls.

(2) By inner lot line court is meant a court bounded on one side and both ends by walls and on the remaining side by a lot line.

(3) By outer court is meant a court bounded on 3 sides with walls and on the remaining side by a street, alley or other open space not less than 15 feet wide.

(4) By outer lot line court is meant a court with one side on a lot line and opening to a street or open space not less than 15 feet wide.

NOTE: SUBSECTION IND 52.11(1)(a) TO BE AMENDED EFFECTIVE JANUARY 1, 1973.

(a) Public utility or industrial power plants are exempted from the protection requirements of this paragraph if they are of fire-resistive construction.

Effective January 1, 1973 subsection Ind 52.11(1)(a) to be amended to read:

(a) Public utility or industrial power plants are exempted from the protection requirements of this paragraph if they are of type No. 1 or No. 2 construction as specified in section Ind 51.03.

NOTE: SECTION IND 53.13 TO BE REPEALED EFFECTIVE JANUARY 1, 1973.

Ind 53.13 Parapet walls. (1) Parapet walls not less than 8 inches in thickness and 2 feet in height shall be provided on all exterior walls of masonry or concrete, where such walls connect with roofs other than roofs that are of incombustible construction throughout; but this section shall not apply:

(a) To buildings where frame construction would be permitted under the provisions of this code.

(b) To walls which face streets, or alleys.

(c) To walls where not less than 10 feet of vacant space is maintained between the wall and the boundary line between premises.

(d) To walls which are not less than 10 feet from other buildings on the same premises.

(2) All parapet walls shall be properly coped with incombustible, weatherproof material.

(3) Parapet walls not less than 8 inches in thickness and 3 feet in height shall be provided on all division and party walls of masonry or concrete where such walls connect with roofs of other than 2-hour fire-resistive construction, or better.

NOTE: SUBSECTIONS IND 54.01(1) AND (2) TO BE REPEALED EFFECTIVE JANUARY 1, 1973.

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

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

(2) When the entire building is protected by an automatic sprinkler system, the above areas may be increased 66⅔%. There shall be no area restriction in one story mill constructed buildings protected by an approved automatic sprinkler system. In one story buildings of ordinary construction, whose contents are incombustible, and whose floors, roofs, and structural framing are of incombustible material there shall be no area restriction.

Effective January 1, 1973 subsections Ind 54.01(1) and (2) to be recreated to read:

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

NOTE: See section Ind 51.03 for standards of classes of construction.

TABLE 54.01

ALLOWABLE FLOOR AREAS (Square Feet)
(Maximum gross floor area per floor)

Class of Construction	Building Frontage Street Exposure	Number of Stories								
		1	2	3	4	5	6	7	8	Over 8
1. Fire-Resistive Type A	1 2 3	NO RESTRICTION								
2. Fire-Resistive Type B	1 2 3	NO RESTRIC-TION	20,000 25,500 31,000	17,000 22,000 27,000	14,000 18,500 23,000	11,000 15,500 20,000	9,000 13,000 17,000	7,000 11,000 15,000	6,000 10,000 14,000	N.P.
3. Metal Frame Protected	1 2 3	21,000 26,500 32,000	18,000 23,000 28,000	15,000 19,500 24,000	12,000 16,000 20,000	N.P.				
4. Heavy Timber	1 2 3	17,000 22,000 27,000	14,000 19,000 24,000	11,000 16,000 21,000	9,000 13,500 18,000	N.P.				
5. Exterior Masonry	1 2 3	14,000 18,000 22,000	11,500 15,000 19,000	9,000 12,500 16,000	7,000 10,000 13,000	N.P.				
6. Metal Frame Unprotected	1 2 3	14,000 18,000 22,000	11,500 15,000 19,000	9,000 12,500 16,000	N.P.					
7. Wood Frame Protected	1 2 3	12,500 16,000 19,000	7,500 10,000 12,000	N.P.						
8. Wood Frame Unprotected	1 2 3	10,000 12,000 14,000	5,000 6,000 7,000	N.P.						

Note: N.P. means "not permitted."

(2) When the entire building is protected by an approved automatic sprinkler system, the above areas may be increased by 150% for one-story buildings and 75% for buildings of more than one story--see note 2. There shall be no area restriction in one-story type No. 3, No. 4, and No. 6 constructed buildings protected by an approved automatic sprinkler system if located 30 feet or more from the property line or any other building. If one-story buildings, whose contents are noncombustible, and whose walls, roofs, floors and structural framing are of noncombustible material, there shall be no area restriction.

NOTE 1: See section Ind 51.23 for approved automatic sprinkler system.

NOTE 2: Example:

		(from table 54.01)	(if sprinklered)		(total allowable)
1.	One story	10,000 sq. ft.	+ (1.5 x 10,000)	=	25,000 sq. ft.
2.	Two or more stories	10,000 sq. ft.	+ (.75 x 10,000)	=	17,500 sq. ft.

NOTE: SUBSECTIONS IND 54.04(1)(a) AND (b) TO BE AMENDED EFFECTIVE JANUARY 1, 1973.

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

(b) In fire-resistive and mill buildings:

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

Effective January 1, 1973 subsections Ind 54.04(1)(a) and (b) to be amended to read:

(a) In type No. 5 through No. 8 buildings, 60 inches per 100 persons; if sprinklered, 40 inches per 100 persons.

(b) In type No. 1 through No. 4 buildings:

	Type No. 1 & 2 Sprinklered	Type No. 1 & 2 Not Sprinklered	Type No. 3 & 4 Sprinklered	Type No. 3 & 4 Not Sprinklered	
--	30	50	40	60	In. per 100 persons on 2nd
Plus	15	25	20	30	In. per 100 persons on 3rd
Plus	12	20	16	24	In. per 100 persons on 4th
Plus	9	15	--	--	In. per 100 persons on 5th
Plus	6	10	--	--	In. per 100 persons on 6th
Plus	3	5	--	--	In. per 100 persons on 7th
Plus	0	0	--	--	In. per 100 persons on 8th floor and above
	but in no case shall such total width be less than				
	30	50	--	--	In. per 100 persons on any one floor

NOTE: SUBSECTIONS IND 54.04(3)(a) AND (b) TO BE AMENDED EFFECTIVE JANUARY 1, 1973.

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

(b) Fire-resistive and mill buildings:

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

Effective January 1, 1973 subsections Ind 54.04(3)(a) and (b) to be amended to read:

(a) Type No. 5 through No. 8 buildings, 147 persons total, above first story; if sprinklered, 220 persons.

(b) Type No. 1 through No. 4 buildings:

Height of Building	Type No. 1 & 2 Sprinklered	Type No. 1 & 2 Not Sprinklered	Type No. 3 & 4 Sprinklered	Type No. 3 & 4 Not Sprinklered	
2 stories	293	175	220	147	Persons on ea. floor
3 stories	195	117	147	98	Persons on ea. floor
4 stories	154	92	116	77	Persons on ea. floor
5 stories	133	80	--	--	Persons on ea. floor
6 stories	122	73	--	--	Persons on ea. floor
More than 6 stories	117	70	--	--	Persons on ea. floor

NOTE: SUBSECTION IND 54.08(1) TO BE REPEALED EFFECTIVE JANUARY 1, 1973.

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

(a) Fire-resistive buildings, not less than 2-hour fire-resistive construction as specified in section Ind 51.04.

(b) Mill constructed buildings, not less than 2-hour fire-resistive construction as specified in section Ind 51.04.

(c) Ordinary constructed buildings, not less than 1-hour fire-resistive construction as specified in section Ind 51.04.

(d) Frame constructed buildings, not less than 1-hour fire-resistive construction as specified in section Ind 51.04.

Effective January 1, 1973 subsection Ind 54.08(1) to be recreated to read:

(1) All stairways, including landings, ramps and elevator shafts, shall be enclosed as shown in table 51.03-A.

NOTE: SUBSECTION IND 54.15(1)(d) TO BE AMENDED EFFECTIVE JANUARY 1, 1973.

(d) Buildings of fire-resistive construction whose contents are not readily combustible.

Effective January 1, 1973 subsection Ind 54.15(1)(d) to be amended to read:

(d) Buildings of type No. 1 and No. 2 construction whose contents are not readily combustible.

NOTE: SECTION IND 54.16 TO BE AMENDED EFFECTIVE JANUARY 1, 1973.

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

Effective January 1, 1973 section Ind 54.16 to be amended to read:

Ind 54.16. Fire Alarm. A fire alarm system complying with section Ind 51.24 shall be provided in every factory or workshop where more than 10 persons are employed above the second story except buildings which are provided with a complete automatic sprinkler system and except type No. 1 and No. 2 buildings whose contents are practically noncombustible.

NOTE: SUBSECTION IND 55.02(1) TO BE REPEALED EFFECTIVE JANUARY 1, 1973.

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

MAXIMUM CAPACITIES

Type of Construction	With Stage	Without Stage
Fire Resistive	No limit	No limit
Mill	750	1,500
Ordinary	500	1,000
Frame	300	750

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

Effective January 1, 1973 subsection Ind 55.02(1) to be recreated to read:

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

MAXIMUM CAPACITIES

Type of Construction	With Stage	Without Stage
Type No. 1 and No. 2	No limit	No limit
Type No. 3 and No. 4	750	1,500
Type No. 5 and No. 6	500	1,000
Type No. 7 and No. 8	300	750

NOTE: SUBSECTION IND 55.02(2) (intro. par.) TO BE AMENDED EFFECTIVE JANUARY 1, 1973.

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

Effective January 1, 1973 subsection Ind 55.02(2) (intro. par.) to be amended to read:

(2) Type No. 7 and No. 8 construction. (See Ind 51.03.) Where buildings of these classifications are erected of type No. 7 or No. 8 construction, the following restrictions shall apply:

NOTE: SUBSECTION IND 55.02(3) TO BE AMENDED EFFECTIVE JANUARY 1, 1973.

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

Effective January 1, 1973 subsection Ind 55.02(3) to be amended to read:

(3) Balconies accommodating more than 100. In any theater or assembly hall, balconies which accommodate more than 100 persons shall be of type No. 1 or No. 2 construction as specified in section Ind 51.03.

NOTE: SUBSECTIONS IND 55.03(2) AND (3) TO BE AMENDED EFFECTIVE JANUARY 1, 1973.

(2) ASSEMBLY HALLS AND ROOF GARDENS ABOVE FIRST STORY. Where assembly halls are provided above the first story, the following limitation of occupancy, type of construction and exit facilities shall apply:

Type of Construction	Maximum No. of Occupants	Height Above Grade
Fire-resistive	No limit	No limit*
Mill, or Ordinary	400	2nd story or 22 feet
Mill, or Ordinary	200	3rd story or 35 feet

*One smokeproof stair tower from the level of the assembly hall leading directly to the exterior at street grade shall be provided for every 750 persons capacity, or fraction thereof. These stairways shall be at least 44 inches wide and shall be in addition to other required stairways in the building.

(3) BASEMENT ASSEMBLY HALL. An assembly hall may be placed in the basement of a fire-resistive building if the capacity does not exceed 2,500 persons or in the basement of a building of mill or ordinary construction if the capacity does not exceed 400 persons.

Effective January 1, 1973 subsections Ind 55.03(2) and (3) to be amended to read:

(2) ASSEMBLY HALLS AND ROOF GARDENS ABOVE FIRST STORY. Where assembly halls are provided above the first story, the following limitation of occupancy, type of construction and exit facilities shall apply:

Type of Construction	Maximum No. of Occupants	Height Above Grade
Type No. 1 and No. 2----------	No limit	No limit*
Type No. 3 thru No. 6----------	400	2nd story or 22 feet
Type No. 3 thru No. 6----------	200	3rd story or 35 feet

*One smokeproof stair tower from the level of the assembly hall leading directly to the exterior at street grade shall be provided for every 750 persons capacity, or fraction thereof. These stairways shall be at least 44 inches wide and shall be in addition to other required stairways in the building.

(3) BASEMENT ASSEMBLY HALL. An assembly hall may be placed in the basement of a type No. 1 or No. 2 building if the capacity does not exceed 2,500 persons, or in the basement of a building of type No. 3 thru No. 6 construction if the capacity does not exceed 400 persons.

NOTE: SUBSECTION IND 55.05(2) TO BE AMENDED EFFECTIVE JANUARY 1, 1973.

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

Effective January 1, 1973 subsection Ind 55.05(2) to be amended to read:

(2) For assembly halls of unlimited capacity located on upper floors of type No. 1 and No. 2 buildings which are served by elevators, the elevator openings may be permitted under the requirements for special occupancy separation specified in section Ind 51.08, but otherwise absolute occupancy separation is required.

NOTE: SUBSECTION IND 55.12(1) TO BE AMENDED EFFECTIVE JANUARY 1, 1973.

> **Ind 55.12 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: Buildings of fire-resistive construction, 36 inches per 100 persons. Buildings of ordinary construction, 40 inches per 100 persons. Buildings of frame construction, 44 inches per 100 persons.

Effective January 1, 1973 subsection Ind 55.12(1) to be amended to read:

(1) The total width of exits from every theater and assembly hall, and from every part thereof, shall not be less than the following: buildings of type No. 1 or No. 2 construction, 36 inches per 100 persons; buildings of type No. 3 thru No. 6 construction, 40 inches per 100 persons; buildings of type No. 7 or No. 8 construction, 44 inches per 100 persons.

NOTE: SUBSECTIONS IND 56.02(1) AND (2) TO BE AMENDED EFFECTIVE JANUARY 1, 1973.

Ind 56.02 Classes of construction. (1) Every building not more than one story in height may be of frame construction as specified in Section Ind 51.03.

(2) Every 2-story building shall be not less than ordinary class of construction as specified in Section Ind 51.02 with exception that all floors and their supports shall be at least noncombustible one-hour fire-resistive rating.

Effective January 1, 1973 subsections Ind 56.02(1) and (2) to be amended to read:

(1) Every building not more than one story in height may be of type No. 7 or No. 8 construction as specified in section Ind 51.03.

(2) Every 2-story building shall be not less than type No. 6 construction as specified in section Ind 51.03 with the exception that all floors and their supports shall be at least noncombustible one-hour fire-resistive rating.

NOTE: SUBSECTION IND 56.02(3) TO BE REPEALED EFFECTIVE JANUARY 1, 1973.

(3) Every building 3 or more stories in height shall be of fire-resistive class of construction as specified in Section Ind 51.001 except that roofs may be constructed of noncombustible 1-hour construction.

(a) Exception: The fire protection for structural steel supporting the roof may be omitted in 1-story sections of this classification provided the roof and its supports are of noncombustible or mill construction throughout.

Effective January 1, 1973 subsection Ind 56.02(3) to be recreated to read:

(3) Every building 3 or more stories in height shall be of type No. 1 or No. 2 construction as specified in section Ind 51.03.

NOTE: SUBSECTION IND 56.05(1)(a) 2. Note TO BE AMENDED EFFECTIVE JANUARY 1, 1973.

Note: See definition section Ind 51.041 (2) for automatic.

Effective January 1, 1973 subsection Ind 56.05(1)(a) 2. Note to be amended to read:

Note: See definition section Ind 51.01(7) for automatic.

NOTE: SUBSECTION IND 56.07(1) TO BE AMENDED EFFECTIVE JANUARY 1, 1973.

Ind 56.07 Total width of exits. (1) The total width of exits from any floor shall be not less than the following rates, based on the total capacity of such floor and of the floors above.

(a) Fire-resistive buildings, 30 inches per 100 persons.

(b) Ordinary or frame buildings, 40 inches per 100 persons.

Effective January 1, 1973 subsection Ind 56.07(1) to be amended to read:

(1) The total width of exits from any floor shall be not less than the following rates, based on the total capacity of such floor and of the floors above.

(a) Type No. 1 and No. 2 buildings, 30 inches per 100 persons.

(b) Type No. 3 through No. 8 buildings, 40 inches per 100 persons.

NOTE: SUBSECTIONS IND 57.01(1), (2) AND (3) TO BE AMENDED EFFECTIVE JANUARY 1, 1973.

> Ind 57.01 Class of construction. (1) All places of abode which are more than 3 stories in height shall be of fire-resistive construction as specified in section Ind 51.001.
>
> (2) All 3-story places of abode, other than hospitals and places of detention, shall be at least of ordinary construction as specified in section Ind 51.02, except that a 3-story apartment building which will accommodate not more than one family on each floor and a 3-story hotel or rooming house which will accommodate not more than 6 persons on each floor may be of frame construction as specified in section Ind 51.03, except as provided in section Ind 57.02.
>
> (3) All places of detention shall be of fire-resistive construction throughout as specified in section Ind 51.001. All hospitals, convalescent hospitals, and nursing homes 3 or more stories in height shall be of fire-resistive construction as specified in section Ind 51.001.

Effective January 1, 1973 subsections Ind 57.01(1), (2) and (3) to be amended to read:

(1) All places of abode which are more than 3 stories in height shall be of type No. 1 or No. 2 construction as specified in section Ind 51.03.

(2) All 3-story places of abode, other than hospitals and places of detention, shall be at least type No. 6 construction as specified in section Ind 51.03.

(3) All places of detention shall be of type No. 1 or No. 2 construction as specified in section Ind 51.03. All hospitals, convalescent hospitals, and nursing homes 3 or more stories in height shall be of type No. 1 or No. 2 construction as specified in section Ind 51.03.

NOTE: SECTION IND 57.05 TO BE AMENDED EFFECTIVE JANUARY 1, 1973.

> Ind 57.05 Court walls. The walls of courts and similar interior shafts for light and air shall be of not less than 3-hour fire-resistive construction as specified in section Ind 51.04, except that when the building is permitted to be of ordinary construction, the court walls may be of 1-hour fire-resistive construction.

Effective January 1, 1973 section Ind 57.05 to be amended to read:

Ind 57.05 Court walls. For walls of courts and similar interior shafts for light and air, see table 51.03-A.

NOTE: SUBSECTIONS IND 57.07(1) AND (2) TO BE AMENDED EFFECTIVE JANUARY 1, 1973.

Ind 57.07 Number, location and type of exits. (1) There shall be at least 2 exits accessible from each room or apartment by means of stairways, ramps or horizontal exits. The number and location of such exits shall be such that in case any exit or passageway is blocked at any point, some other exit will still be accessible through public passageways from every room or apartment.

(a) In fire-resistive buildings a total area of not more than 1,200 square feet may be placed between an exit and the end of the building.

(2) Exits shall be distributed so that the entrance to each room or apartment will be not more than 50 feet distant from an exit, measuring along public passageways, if in a building of non-fire-resistive construction, or 75 feet in a fire-resistive building.

Effective January 1, 1973 subsections Ind 57.07(1) and (2) to be amended to read:

(1) There shall be at least 2 exits accessible from each room or apartment by means of stairways, ramps or horizontal exits. The number and location of such exits shall be such that in case any exit or passageway is blocked at any point, some other exit will still be accessible through public passageways from every room or apartment.

(a) In type No. 1 and No. 2 buildings a total area of not more than 1,200 square feet may be placed between an exit and the end of the building.

(2) Exits shall be distributed so that the entrance to each room or apartment will be not more than 50 feet distant from an exit, measuring along public passageways, if in a building of less than type No. 1 or No. 2 construction, or 75 feet in a type No. 1 or No. 2 building.

NOTE: SUBSECTION IND 57.12(1) TO BE REPEALED EFFECTIVE JANUARY 1, 1973.

Ind 57.12 Enclosure of stairways and shafts. (1) In 3 story buildings all stairways shall be enclosed as provided in sections Ind 51.17 or 51.18, with 1-hour fire-resistive partitions, as specified in section Ind 51.04, or better, unless the building is either of fire-resistive construction or equipped throughout with automatic sprinklers. The doors may be omitted in the stories above the basement in one stairway enclosure. In all 3 story buildings accommodating more than 2 families, or 15 persons, above the first story, all basement stairways shall be enclosed with 2-hour fire-resistive partitions as specified in section Ind 51.04.

Effective January 1, 1973 subsection Ind 57.12(1) to be recreated to read:

(1) All stairways and shafts shall be enclosed as specified in table 51.03-A, except that in all buildings 3 or more stories all basement stairways shall be enclosed with 2-hour fire-resistive partitions as specified in section Ind 51.04.

NOTE: SUBSECTION IND 57.50(2)(a) TO BE AMENDED EFFECTIVE JANUARY 1, 1973.

(2) CONSTRUCTION REQUIREMENTS. (a) All garages, except private garages, which are more than 500 square feet in area shall have walls and roof of ordinary construction, as specified in section Ind 51.02, or better, and all floors of vehicle storage rooms, salesrooms, and repair shops shall be of not less than 4-hour fire-resistive construction, as specified in section Ind 51.04.

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

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

Effective January 1, 1973 subsection Ind 57.50(2)(a) to be amended to read:

(a) All garages, except private garages, which are more than 500 square feet in area, shall have walls and roof of types No. 1 thru No. 6 construction as specified in section Ind 51.03, and all floors of vehicle storage rooms, salesrooms and repair shops shall be of not less than 4-hour fire-resistive construction as specified in section Ind 51.04.

Exception: 1. A garage not more than one story in height and 2,000 square feet in area may have walls and roof of type No. 7 or No. 8 construction if located at least 100 feet from any other building or boundary line between premises.

2. A hangar for the storage of not more than one airplane, or a boathouse for the storage of not more than one motor boat, may be of type No. 7 or No. 8 construction if located at least 15 feet from any property line or other building.

NOTE: SUBSECTIONS IND 57.51(2)(a), (b) AND (c) TO BE AMENDED JANUARY 1, 1973.

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

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

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

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

Effective January 1, 1973 subsections Ind 57.51(2)(a), (b) and (c) to be amended to read:

(a) All buildings having a service space of not more than 500 square feet in area, designed to accommodate motor-driven vehicles, and all other buildings erected within 15 feet of the dispensing equipment, shall be of types No. 1 thru No. 6 construction as specified in section Ind 51.03, except where canopies are provided over the dispensing equipment such canopies shall be of noncombustible construction throughout.

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

(b) Buildings not more than one story in height and not exceeding 500 square feet in area may be of type No. 7 or No. 8 construction if located at least 15 feet from dispensing equipment and 10 feet from the boundary lines between premises and from other buildings on the same premises.

(c) Buildings more than 500 square feet in area used as office buildings exclusively, or in connection with other nonhazardous occupancies, may be of type No. 7 or No. 8 construction if not more than one story in height and located at least 30 feet from boundary lines between premises, from other buildings on the same premises and from the dispensing equipment.

NOTE: SECTION IND 59.10 TO BE REPEALED EFFECTIVE JANUARY 1, 1973.

Ind 59.10 Definitions. (1) "Air conditioning" is the process of treating air to control simultaneously its temperature, humidity, cleanliness and distribution to meet the requirements of the conditioned space.

(2) "Combustible" refers to a material or structure made of or surfaced with wood, compressed paper, plant fibers or other material that will ignite and burn.

(3) A "duct" is any pipe, flue, or tunnel used to convey air, gases and entrained materials. An underground duct is any part of a duct that is below the surface of the ground.

(4) A"duct furnace" is a suspended direct-fired heating appliance normally installed in air ducts. Air circulation is provided by a blower not furnished as part of the appliance.

(5) An "exhaust ventilating system" is any combination of building construction, machinery, devices or equipment, designed and operated to remove harmful gases, dusts, fumes or vitiated air, from the breathing zone of employes and frequenters.

(6) "Existing buildings" shall include buildings, structurally completed, or for which drawings have been approved prior to April 11, 1936. Buildings constructed after April 11, 1936 shall comply with requirements of the code in effect at the time the drawings were approved or construction was completed.

(7) A "furnace" is completely self-contained direct-fired, automatically controlled, vented appliance for heating air by transfer of heat of combustion through metal to the air and designed to supply heated air through ducts to spaces remote from the appliance location.

(8) "Gravity exhaust ventilation" is a process of removing air by natural means, the effectiveness depending on atmospheric condition, such as difference in relative density, difference in temperature or wind motion.

(9) "Hazardous piping" is any service piping conveying oxygen, flammable liquids, flammable gases or toxic gases.

(10) A "heating system" is any combination of building construction, machinery, devices or equipment, so proportioned, arranged, installed, operated, and maintained as to produce and deliver in place the required amount and character of heating service.

(11) A "jacketed stove" is a vented, self-contained free standing, non-recessed heating appliance, using solid, liquid or gas fuels. The effective heating is dependent on a gravity flow of air circulation over the heat exchanger.

Note: See definition for "space heaters".

(12) "Major apparatus" shall be defined as central air-handling equipment supplying more than one occupancy or rooms and heat-producing equipment generating heat for the heating and ventilating system.

(13) "Mechanical ventilation" is the process of supplying or removing air by power-driven fans or blowers.

(14) The term "new building" includes buildings, additions thereto, and alterations thereof, for which complete drawings have not been approved by the department of industry, labor and human relations, or construction is not in progress, prior to February 1, 1965.

(15) "Outside air" is air that is taken from outside the building and is free from contamination of any kind in proportions detrimental to the health or comfort of the persons exposed to it.

(16) The "outside air intake" includes the ducts and outdoor openings through which outside air is admitted to a ventilating, air conditioning or heating system.

(17) An "occupied area" is any room, area or enclosure used by one or more persons.

(18) "Outdoor openings" may be doors, windows or skylights located in outside walls or roof and can be opened to provide natural ventilation to the occupied space. Natural ventilation is permitted through window openings arranged in conformance with Wis. Adm. Code section Ind 52.02.

(19) An "outlet" or supply opening is an opening, the sole purpose of which is to deliver air into any space to provide heating, ventilation or air conditioning.

(20) A "return" or exhaust opening is any opening the sole purpose of which is to remove air from any space being heated, ventilated or air conditioned.

(21) A (gravity or circulating type) "space heater" is a vented, self-contained free standing or wall recessed heating appliance using liquid or gas fuels.

Note: See definition for "jacketed stove"

(22) "Tempered outside air". Outside air heated before distribution.

(23) "Tempered air". Air transferred from heated area of building.

(24) A "unit heater". (Direct-fired low and high static type). (a) Low static type is a direct-fired suspended, self-contained automatically controlled, vented heating appliance, having integral means for circulation of air by means of a propellor fan or fans.

(b) High static pressure type is a direct-fired suspended or floor standing, self-contained, automatically controlled and vented, heating appliance having an integral means for circulation of air against 0.2 inch or greater static pressure.

(25) "Ventilation" is the process of supplying or removing air by natural or mechanical means, to or from any space.

Subsection Ind 59.69 (5) (c) 1. Note to be amended to read:

Note: Flame-retarded fabric or metal or mineral listed in Building Materials List published by Underwriters' Laboratories, Inc. are acceptable.

Subsection Ind 59.69 (5) (d) 1. Note to be amended to read:

Note: Flame-retarded fabric or metal or mineral listed in Building Materials List published by Underwriters' Laboratories, Inc. are acceptable.

Effective January 1, 1973 Appendix A of Chapters Ind 50-59--Building and Heating, Ventilating and Air Conditioning--to be created:

APPENDIX A

The following notes, bearing the same number as the text of the Building and Heating, Ventilating and Air Conditioning Code to which they apply, contain useful explanatory material to clarify the referenced definitions and rules.

A-51.01(12) Building. The intent was to consider permanent awnings as part of a building.

A-51.01(42) Family. The intent of this definition is to clarify the use of the word "family" in reference to subsection Ind 57.001(2)(a); it is not intended as a variance to requirements stated under Ind 57.001(2)(b).

A-51.01(115) Setback. The intent was to not include gutters, downspouts, outdoor lighting fixtures, signs and similar attachments as parts of a building.

A-51.01(121) Stories, Number of. The following illustrations are provided to give visual aid to this definition.

FACTORS

DISCHARGE GRADE REFERENCE = 0
'X' = 0' TO MAXIMUM OF 3' ABOVE GR.
'Y' = 0' TO MAXIMUM OF 6' ABOVE GR.
'Z' = MAXIMUM VARIATION FROM THE PRINCIPLE LEVEL IS 3'.

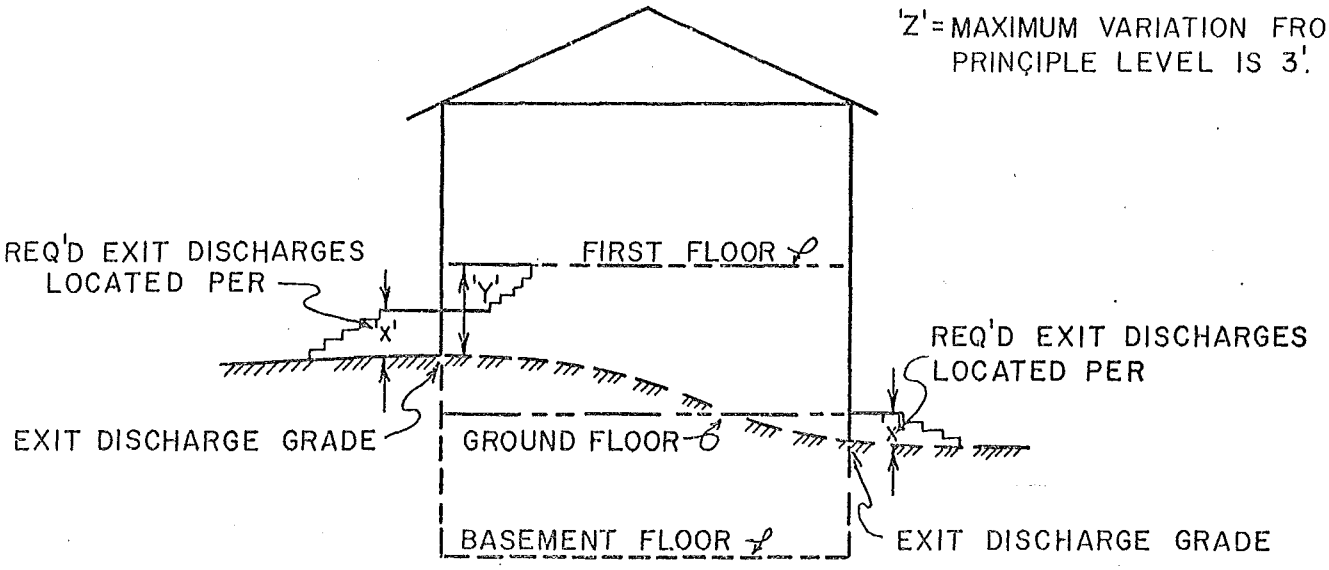


ILLUSTRATION SHOWING EXTREME ALLOWABLE CONDITION FOR FIRST FLOOR AND GROUND FLOOR

NOTE: PENTHOUSE AREAS EXCEEDING 50 % OF ROOF AREA WILL BE CONSIDERED AN ADDITIONAL STORY

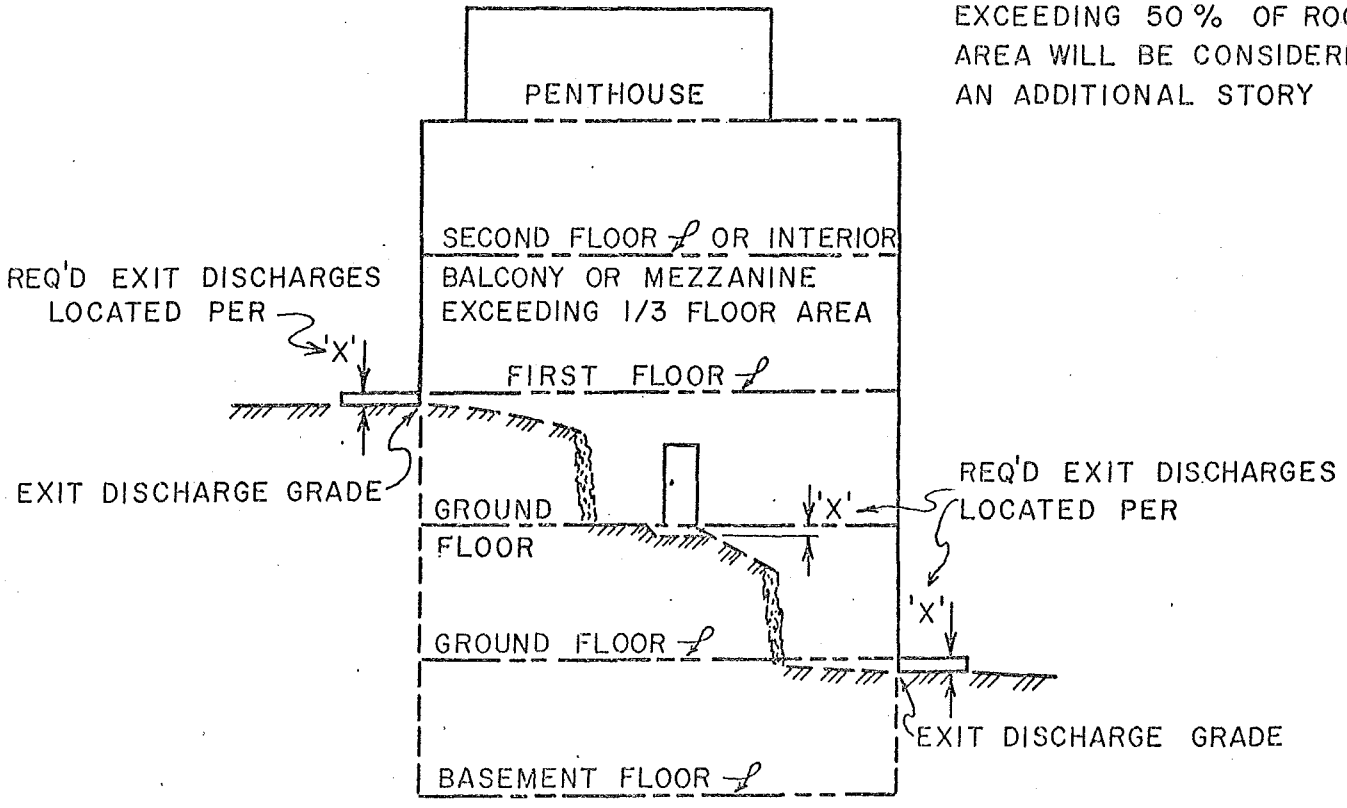
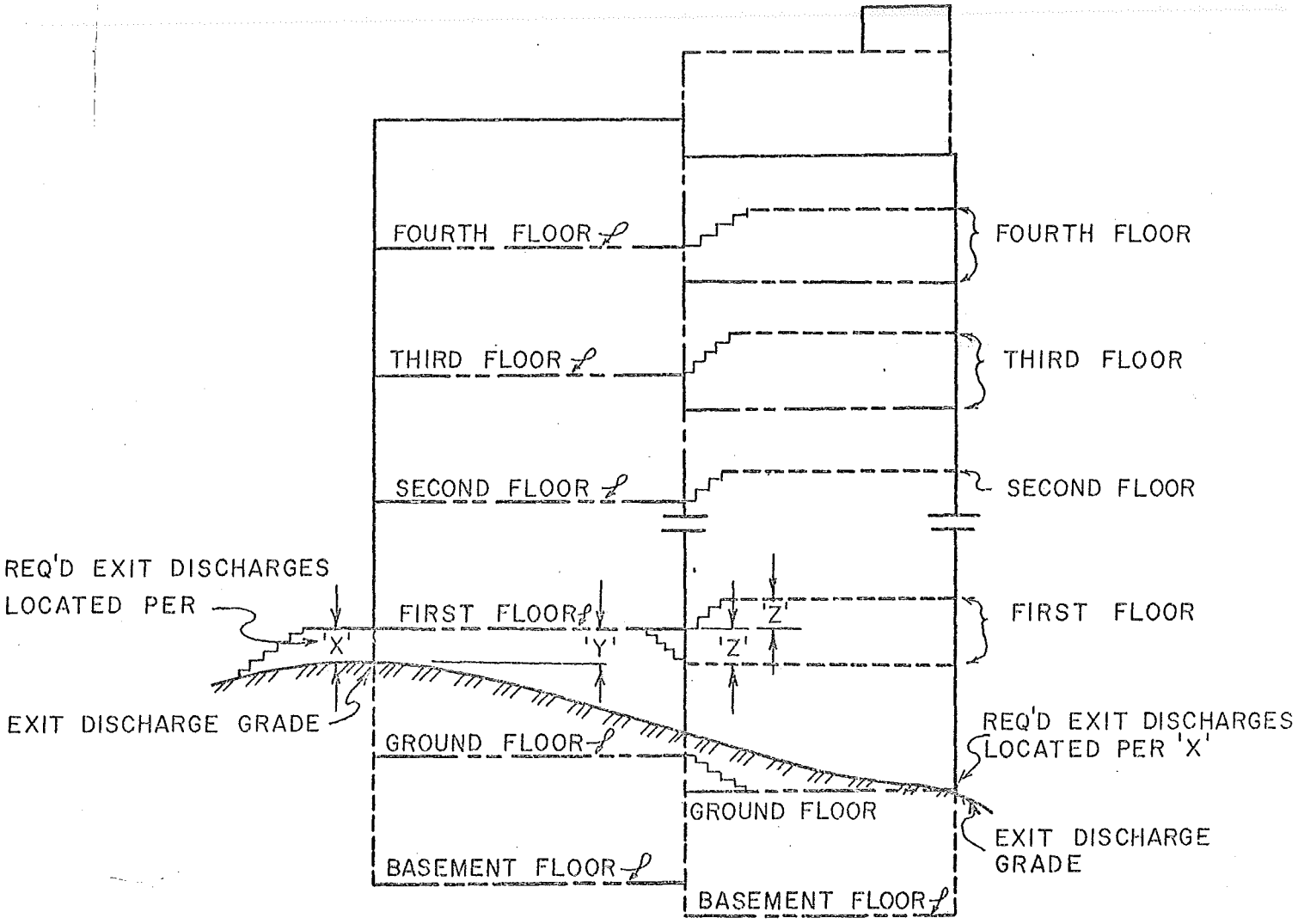


ILLUSTRATION SHOWING POSSIBLE 2 STORY CONDITION OR 3 STORY WITH PENTHOUSE

NOTE: FOR ADDITIONAL VARIATIONS TO NO. OF STORIES SEE IND. 51.02 (3)(b).



FOUR STORY BUILDING

A-51.01(151) Wall (party). It is intended that a property consisting of joining plotted subdivisions owned by one individual, that can be owned by separate individuals, is included in the definition of party wall.

DEPARTMENT OF INDUSTRY, LABOR AND HUMAN RELATIONS

Stephen J. Reilly, Executive Secretary

May 1, 1972
Date

State of Wisconsin \ DEPARTMENT OF INDUSTRY, LABOR AND HUMAN RELATIONS

310 PRICE PLACE
BOX 2209
MADISON, WISCONSIN 53701

PHILIP E. LERMAN
CHAIRMAN

JOSEPH R. KAUTZER
COMMISSIONER

JOHN C. ZINOS
COMMISSIONER

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STEPHEN J. REILLY
EXECUTIVE SECRETARY

May 10, 1972

Mr. James J. Burke
Revisor of Statutes
411 West, State Capitol
Madison, Wisconsin 53702

Dear Mr. Burke:

This letter is intended for your official file record concerning the revisions to the Wisconsin Administrative Code, Chapters 50-59--Building and Heating, Ventilating and Air Conditioning, adopted by the Department on May 1, 1972.

The adopted material includes a newly created section for definitions (Ind 51.01) which mentions references to general standards of ASTM. The definitions that mention ASTM standards do not relate to a dated standard and this was intended for a special reason. The specific ASTM standards which we have adopted are listed in only one section of the code. The rules incorporating these standards do so by referring the reader to the specific adopted standard listed under section Ind 51.25. When updating the code references involving these standards we need only to revise one section of the code (Ind 51.25), thereby avoiding changes to the definition and rule sections. The current revisions relate only to standards that are in the present code which have been formally adopted according to procedures required by section 227.025, Wis. Stats., and are now listed in section Ind 51.25.

Another matter related to revisions adopted on May 1, 1972, concerns the decision to delete the amendment to the "Note" in connection with subsection Ind 56.06 (1) (a) 2. on page 44 of the official material on file. The deletion of the amended "Note" has been according to procedures set forth in subsection 227.024 (6), Wis. Stats. The decision to delete the amendment to the "Note" was made by representatives of both of our offices in view of the fact that a forthcoming revision will correct the problem.

Sincerely,

Stephen J. Reilly
Executive Secretary

cc: Secretary of State
Morris A. Olson