

**5.42(2)** Notwithstanding the requirements of 16 CFR 1209.33, the manufacturer shall contract with an independent National Voluntary Laboratory Accreditation Program (NVLAP) laboratory, administered by the United States Department of Commerce, National Bureau of Standards, which is approved to perform the tests necessary for compliance with the standards.

*a.* The manufacturer shall include in the laboratory service a follow-up inspection program which will include at least six unannounced inspections per year.

*b.* The testing laboratory shall obtain enough samples from production and inventory and may also purchase sufficient bags to ensure that the samples are a representative cross section of the material being tested.

*c.* In the event that samples obtained by the testing laboratory fail to meet the test standards, the manufacturer, with the approval of the testing laboratory, shall take whatever action is necessary to correct the production process and bring the product into compliance.

**5.42(3)** In addition to the labeling requirements of 16 CFR 1209.9, the containers of cellulose insulation shall indicate that a follow-up inspection program is being carried out.

**661—5.43 to 5.49** Reserved.

These rules are intended to implement Iowa Code chapters 100 and 100A.

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## MEANS OF EXIT

**661—5.50(100) Exits.**

**5.50(1)** Scope. The fire marshal shall adopt, amend, promulgate and enforce rules and standards relating to safe exiting from new and existing buildings, facilities and structures as defined in Iowa Code section 100.35, in and for churches, lodge halls, courthouses, assembly halls, theaters, opera houses, hotels, colleges, schoolhouses, hospitals, health care facilities, amphitheaters, dormitories, restaurants, taverns, night clubs, public meeting places, apartment buildings and any other buildings or structures used for, but not limited to, such purposes as deliberation, worship, entertainment, amusement or awaiting transportation.

**5.50(2)** The standards adopted by the commissioner of labor of the state of Iowa pursuant to Iowa Code section 88.5 with regard to fire safety, fire protection, exits and exit lights, and the elimination of fire hazards as they existed on January 1, 1982, are hereby adopted as the standards applicable to buildings, facilities and structures utilized by manufacturers.

**5.50(3)** The state fire marshal may, where buildings, structures or facilities are being constructed and enforced to local, state or federal codes equivalent to or more restrictive than the rules promulgated within, accept such codes as meeting the intent of this chapter.

**5.50(4)** General requirements. Every new and existing building, structure or facility, addition to, or portion thereof shall be provided with a safe means of exit as required by the provisions within this chapter.

EXCEPTION: As provided for by the specific occupancies enforced by the state fire marshal under the state fire marshal's jurisdiction.

**5.50(5)** An approved type of fire extinguishers shall be provided on each floor, so located as to be accessible to the occupants and spaced so no person must travel more than 75 feet from any point to reach the nearest fire extinguisher.

**5.50(6)** In all buildings or structures of such size, arrangement or use, where delayed detection of a fire could endanger the occupants, the fire marshal may require an automatic fire detection and alarm system.

**5.50(7)** All fire and life safety equipment or devices shall be regularly and properly maintained in an operable condition at all times in accordance with nationally recognized standards. This includes fire extinguishing equipment, alarm systems, doors and their appurtenances, electric service, including appliances, cords and switches, heating and ventilation equipment, sprinkler systems, and exit facilities.

**5.50(8)** Excessive storage of combustible or flammable materials such as papers, cartons, magazines, paints, old clothing, furniture and similar materials shall not be permitted.

**5.50(9)** The state fire marshal shall require compliance with nationally recognized standards when the occupancy uses, stores, develops or handles hazardous materials. Equipment used in conjunction with these types of materials must be of a type designated for the use so as to provide the necessary safety to life and property.

**5.50(10)** Food preparation facilities shall be protected and maintained in accordance with the standard for the "Removal of Smoke and Grease-Laden Vapors from Commercial Cooking Equipment," No. 96, 1987 edition of the National Fire Protection Association.

**5.50(11)** Definitions. The following definitions apply to rules 661—5.50(100) to 661—5.105(100):

*a.* "Balcony," exterior exit, is a landing or porch projecting from the wall of a building, and which serves as a required exit. The long side shall be at least 50 percent open, and the open area above the guardrail shall be so distributed as to prevent the accumulation of smoke or toxic gases.

b. “*Basement*” is a usable or unused floor space not meeting the definition of a story or first story. See specific occupancies for other provisions.

c. “*Continental seating*” is the configuration of fixed seating where the number of seats per row exceeds 14 and required exits from the seating area are side exits.

d. “*Dwelling*” is any building or portion thereof which contains not more than two dwelling units.

e. “*Dwelling unit*” is any building or portion thereof which contains living facilities, including provisions for sleeping, eating, cooking, and sanitation for not more than one family.

f. “*Exit*” is a continuous and unobstructed means of egress to a public way and shall include intervening aisles, doors, doorways, corridors, exterior exit balconies, ramps, stairways, smokeproof enclosures, horizontal exits, exit passageways, exit courts and yards.

g. “*Exit court*” is a yard or court providing access to a public way for one or more required exits.

h. “*Exit passageway*” is an enclosed exit connecting a required exit or exit court with a public way.

i. “*Horizontal exit*” is an exit from one building into another building on approximately the same level or through or around a wall constructed as required for a two-hour occupancy separation and which completely divides a floor into two or more separate areas so as to establish an area of refuge affording safety from fire or smoke coming from the area from which escape is made.

j. “*Lodging house*” is any building or portion thereof containing not more than five guest rooms where rent is paid in money, goods, labor or otherwise.

k. “*Manufacture*” is the process of making, fabricating, constructing, forming, or assembling a product from raw, unfinished, or semifinished materials.

l. “*Mezzanine*” or “*mezzanine floor*” is an intermediate floor placed in any story or room. When the total of any such mezzanine floor exceeds 33 1/3 percent of the total floor area in that room, it shall be considered as constituting an additional “story.” The clear height above or below a mezzanine floor construction shall not be less than 7 feet.

m. “*Panic hardware*” is a door-latching assembly incorporating an unlatching device, the activating portion of which extends across at least one-half the width of the door on which it is installed.

n. “*Private stairway*” is a stairway serving two or more floors not connected to a required means of exit.

o. “*Public way*” is any street, alley or similar parcel of land essentially unobstructed from the ground to the sky which is deeded, dedicated or otherwise permanently appropriated to the public for public use and having a clear width of not less than 10 feet.

p. “*Spiral stairway*” is a stairway having a closed circular form in its plan view with uniform section-shaped treads attached to and radiating about a minimum diameter supporting column. The effective tread is delineated by the nosing radius line, the exterior arc (center line of railing) and the overlap radius line (nosing radius line of tread above). Effective tread dimensions are taken along a line perpendicular to the center line of the tread.

q. “*Story*” is that portion of a building included between the upper surface of any floor and the upper surface of the floor next above, except that the topmost story shall be that portion of a building included between the upper surface of the topmost floor and the ceiling or roof above. If the finished floor level directly above a usable or unused underfloor space is more than 6 feet above grade as defined herein for more than 50 percent of the total perimeter or is more than 12 feet above grade as defined herein at any point, such usable or unused underfloor space shall be considered as a story.

r. “*Underground structure*” is a structure in which there is not direct access to outdoors or to another fire area other than by upward travel.

s. “*Windowless structure*” is a building lacking any means for direct access to the outside or outside openings for light or ventilation through windows.

t. “*Story, first*” is the lowest story in a building which qualifies as a story, as defined herein, except that a floor level in a building having only one floor level shall be classified as a first story, provided such floor level is not more than 4 feet below grade, as defined herein, for more than 50 percent of the total perimeter, or not more than 8 feet below grade, as defined herein, at any point.

**5.50(12)** Exit obstruction. Obstructions shall not be placed in the required width of an exit except projections permitted by this chapter.

**5.50(13)** Changes in elevation. Within a building, changes in elevation of less than 12 inches along any exit serving an occupant load of ten or more shall be by ramps.

EXCEPTION: Dwelling and lodging house occupancies and along aisles adjoining seating areas.

**5.50(14)** Accessibility. Buildings, facilities or structures required to be accessible to physically handicapped shall meet all the provisions of the Iowa state building code, administration section, division 7.

### **661—5.51(100) Occupant load.**

**5.51(1)** *Determination of occupant load.* In determining the occupant load, all portions of a building shall be presumed to be occupied at the same time.

EXCEPTION: Accessory use areas which ordinarily are used only by persons who occupy the main areas of an occupancy shall be provided with exits as though they are completely occupied, but their occupant load need not be included in computing the total occupant load of the building.

The occupant load for a building shall be determined in accordance with the following:

a. *General.* For areas without fixed seats, the occupant load shall be not less than the number determined by dividing the floor area assigned to that used by the occupant load factor set forth in Table No. 5-A.\* Where an intended use is not listed in Table No. 5-A, the authority having jurisdiction shall establish an occupant load factor based on a listed use which most nearly resembles the intended use.

For a building or portion thereof which has more than one use, the occupant load shall be determined by the use which gives the largest number of persons.

The occupant load for buildings or areas containing two or more occupancies shall be determined by adding the occupant loads of the various use areas as computed in accordance with the applicable provisions of this rule.

b. *Fixed seating.* For areas having fixed seats and aisles, the occupant load shall be determined by the number of fixed seats installed therein. The required width of aisles serving fixed seats shall not be used for any other purpose.

For areas having fixed benches or pews, the occupant load shall be not less than the number of seats based on one person for each 18 inches of length of pew or bench.

Where booths are used in dining areas, the occupant load shall be based on one person for each 24 inches of booth length or major portion thereof.

c. *Reviewing stands, grandstands, and bleachers.* The occupant load for reviewing stands, grandstands and bleachers shall be calculated in accordance with rule 661—5.51(100).

\*See Table No. 5-A following rule 5.105(100).

**5.51(2) Maximum occupant load.** The maximum occupant load for other than an assembly use shall not exceed the capacity of exits as determined in accordance with this chapter.

The maximum occupant load for an assembly use shall not exceed the occupant load as determined in accordance with subrules 5.51(1) and 5.51(2).

**EXCEPTION:** The occupant load for an assembly building or portion thereof may be increased, when approved by the authority having jurisdiction, if all the requirements of this chapter are met for such increased number of persons. The authority having jurisdiction may require an approved aisle, seating or fixed equipment diagram to substantiate such an increase, and may require that such diagram be posted.

**5.51(3) Posting of room capacity.** Any room having an occupant load of 50 or more where fixed seats are not installed, and which is used for classroom, assembly or similar purpose, shall have the capacity of the room posted in a conspicuous place on an approved sign near the main exit from the room. Such signs shall be maintained in legible condition by the owner or the owner's authorized agent and shall indicate the number of occupants permitted for each room use.

### **661—5.52(100) Exits required.**

**5.52(1) Number of exits.** Every building or usable portion thereof shall have at least one exit, not less than two exits where required by Table No. 5-A\*, and additional exits as required by these rules.

For purposes of these rules, basements and occupied roofs shall be provided with exits as required for stories.

Floors complying with the definition for mezzanines as described herein shall be provided with exits as specified in this chapter.

Two exits shall be provided from mezzanines having an occupant load of more than ten or when the area of the mezzanine exceeds 2,000 square feet whichever is more restrictive. The occupant load of the mezzanine shall be added to the occupant load of the story or room in which it is located.

Every floor above or below the first story in every building shall have at least two exits and shall be remote from each other and so arranged and constructed as to minimize any possibility that both may be blocked by any one fire or other emergency.

**EXCEPTIONS:**

1. Where a single exit or limited dead end may be permitted by a specific occupancy or other provisions of the fire marshal's rules.

2. Except as provided in Table No. 5-A, only one exit need be provided from the second story within an individual dwelling unit. Each sleeping room shall have an escape or rescue window having a minimum net clear opening of 5.7 square feet. The minimum net clear height opening dimension shall be 24 inches. The minimum net clear opening width dimension shall be 20 inches. Where windows are provided as a means of escape or rescue they shall have a finished sill height not more than 44 inches above the floor.

Every story or portion thereof having an occupant load of 501 to 1,000 shall have not less than three exits.

Every story or portion thereof having an occupant load of 1,001 or more shall have not less than four exits.

The number of exits required from any story of a building shall be determined by using the occupant load of that story plus the percentages of the occupant loads of floors which exit through the level under consideration as follows:

1. Fifty percent of the occupant load in the first adjacent story above and the first adjacent story below, when a story below exits through the level under consideration.

\*See Table No. 5-A following rule 5.105(100).

2. Twenty-five percent of the occupant load in the story immediately beyond the first adjacent story.

The maximum number of exits required for any story shall be maintained until egress is provided from the structure.

**5.52(2) *Width.*** The total width of exits in feet shall be not less than the total occupant load served divided by 50. Such width of exits shall be divided approximately equally among the separate exits. The total exit width required from any story of a building shall be determined by using the occupant load of that story plus the percentages of the occupant loads of floors which exit through the level under consideration as follows:

*a.* Fifty percent of the occupant load in the first adjacent story above and the first adjacent story below, when a story below exits through the level under consideration.

*b.* Twenty-five percent of the occupant load in the story immediately beyond the first adjacent story.

*c.* The maximum exit width required from any story of a building shall be maintained.

**5.52(3) *Arrangement of exits.*** If only two exits are required, they shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the building or area to be served measured in a straight line between exits.

**EXCEPTIONS:** When exit enclosures are provided as a portion of the required exit and are interconnected by a corridor conforming to the requirements of subrule 5.54(7) exit separations may be measured along a direct line of travel within the exit corridor. Enclosure walls shall be not less than 30 feet apart at any point in a direct line of measurement.

When three or more exits are required, they shall be arranged a reasonable distance apart so that if one becomes blocked the others will be available.

**5.52(4) *Distance to exits.*** The maximum distance of travel from any point to an exterior exit door, horizontal exit, exit passageway or an enclosed stairway in a building not equipped with an automatic sprinkler system throughout shall not exceed 150 feet or 200 feet in a building equipped with an automatic sprinkler system throughout. These distances may be increased 100 feet when the last 150 feet is within a corridor complying with rule 5.54(100). In a one-story building classified as a factory or warehouse and in one-story airplane hangars, the exit travel distance may be increased to 400 feet if the building is equipped with an automatic sprinkler system throughout and provided with approved smoke and heat ventilation system.

In a ramp or mechanical access open parking garage, the exit travel distance may be increased to 250 feet.

**5.52(5) *Exits through adjoining rooms.*** Rooms may have one exit through an adjoining or intervening room which provides a direct, obvious and unobstructed means of travel to an exit corridor, exit enclosure or until egress is provided from the building, provided the total distance of travel does not exceed that permitted by other provisions of this chapter. In other than dwelling units, exits shall not pass through kitchens, storerooms, rest rooms, closets, employee locker rooms, soiled linen rooms, laundries, handicraft shops, repair shops or rooms or space used for the storage of combustible supplies and equipment, paint shops, or boiler and heater rooms.

**EXCEPTIONS:**

1. Rooms within dwelling units may exit through more than one intervening room.

2. Rooms with a cumulative occupant load of ten or less may exit through more than one intervening room.

Foyers, lobbies and reception rooms constructed as required for corridors shall not be construed as intervening rooms.

**5.52(6) Automatic sprinkler system.** An approved automatic sprinkler system shall be installed in every story or basements of all buildings when the floor area exceeds 1,500 square feet and there is not provided at least 20 square feet of opening entirely above the adjoining ground level in each 50 lineal feet or fraction thereof of exterior wall in the story or basement on at least one side of the building. Openings shall have a minimum dimension of not less than 30 inches. Such openings shall be accessible to the fire department from the exterior.

When openings in a story are provided on only one side and the opposite wall of such story is more than 75 feet from such openings, the story shall be provided with an approved automatic sprinkler system, or openings as specified above shall be provided on at least two sides of an exterior wall of the story.

If any portion of a basement is located more than 75 feet from openings required in this section, the basement shall be provided with an approved automatic sprinkler system.

EXCEPTION: Except dwellings, lodging houses, private garage, sheds and agricultural buildings.

**5.52(7) Underground structures.** Underground structures which exceed 1,500 square feet per floor shall be protected throughout by an approved automatic sprinkler system.

Exits from underground structures involving upward travel, such as ascending stairs or ramps, shall be cut off from main floor areas. Stairtowers of two-hour construction shall be provided from underground structures when serving up to two floors. Stairtowers of four-hour construction shall be provided from underground structures serving more than two floors.

Outside smoke venting shall be provided to prevent the exits from becoming charged with smoke from any fire in the area served by the exits.

Emergency lighting shall be provided for all underground structures.

#### **661—5.53(100) Doors.**

**5.53(1) General.** This rule shall apply to every exit door serving an area having an occupant load of ten or more, or serving hazardous rooms or areas, except that subrules 5.53(3), 5.53(8), and 5.53(9) shall apply to all exit doors regardless of occupant load. Buildings or structures used for human occupancy shall have at least one exterior door that meets the requirements of subrule 5.53(5).

**5.53(2) Swing.** An exit door shall be a side-hinged swinging door. Exit doors must swing in the direction of exit travel when serving any hazardous area or when serving an area having an occupant load of 50 or more.

*a.* Double-acting doors shall not be used as exits when any of the following conditions exist:

- (1) The occupant load served by the door is 100 or more.
- (2) The door is part of a fire assembly.
- (3) The door is part of a smoke and draft control assembly.
- (4) Panic hardware is required or provided on the door.

*b.* A double-acting door shall be provided with a view panel of not less than 200 square inches.

**5.53(3) Type of lock or latch.**

*a.* Exit doors shall be openable from the inside without the use of a key or any special knowledge or effort.

EXCEPTIONS:

1. This requirement shall not apply to an exterior exit door when used as the primary entrance to the building if there is a readily visible, durable sign on or adjacent to the door stating "THIS DOOR TO REMAIN UNLOCKED DURING BUSINESS HOURS." The sign shall be in letters not less than one inch high on contrasting background. The locking device must be a type that will be readily distinguishable as locked. The use of this exception may be revoked for due cause by the authority having jurisdiction.

2. Exit doors from individual dwelling units and guest rooms or residential occupancies having an occupant load of ten or less may be provided with a night latch, dead bolt or security chain, provided such devices are openable from the inside without the use of a key or tool and mounted at a height not to exceed 48 inches above the finished floor.

3. In buildings protected throughout by approved supervised automatic smoke detection systems or approved supervised automatic sprinkler systems, and where permitted by the rules for specific occupancies, doors may be equipped with approved, listed locking devices which shall meet the following requirements:

- The device shall unlock upon activation of an approved supervised sprinkler system, or upon activation of any heat detector or any smoke detector of an approved supervised automatic fire detection system.

- The device shall unlock upon loss of power controlling the lock or locking mechanism.

- The device shall be capable of deactivation by a signal from a switch located in an approved location.

- The device shall initiate an irreversible process that releases the lock within 15 seconds whenever a force is continuously applied to the release device. The time to initiate the release process shall not exceed 3 seconds and the minimum force required shall not exceed 15 pounds. Once this unlocking process has been initiated, relocking shall be by manual means only. Operation of the release device shall activate an audible signal in the vicinity of the door to ensure those attempting to exit that the release device is functional.

- The device shall unlatch in a single operation.

On each door adjacent to the release device shall be posted a sign that reads: "PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 SECONDS." Lettering on each sign shall be at least 1 inch high and 1/8 inch wide.

Emergency lighting shall be provided at each door.

*b.* Manually operated edge or surface-mounted flush bolts and surface bolts are prohibited. When exit doors are used in pairs and approved automatic flush bolts are used, the door leaf having the automatic flush bolts shall have no doorknob or surface-mounted hardware. The unlatching of any leaf shall not require more than one operation.

EXCEPTION: Dwelling and lodging house occupancies.

**5.53(4) *Panic hardware.*** Panic hardware shall be provided for an assembly of 50 or more. Panic hardware shall be of an approved type. The activating member shall be mounted at a height of not less than 30 inches nor more than 44 inches above the floor. The unlatching force shall not exceed 15 pounds when applied in the direction of exit travel.

**5.53(5) *Width and height.*** Every required exit doorway shall be of a size as to permit the installation of a door not less than 3 feet in width and not less than 6 feet 8 inches in height. When installed, exit doors shall be capable of opening so that the clear width of the exit is not less than 32 inches. In computing the exit width required by subrule 5.52(2), the net dimension of the exitway shall be used.

**5.53(6) *Door leaf width.*** A single leaf of an exit door shall not exceed 4 feet in width.

**5.53(7) *Special doors.*** Revolving, sliding and overhead doors shall not be used as required exits.

*a.* Approved power-operated doors may be used for exit purposes. Such doors when swinging shall have two guide rails installed on the swing side projecting out from the face of the door jambs for a distance not less than the widest door leaf. Guide rails shall be not less than 30 inches in height with solid or mesh panels to prevent penetration into door swing and shall be capable of resisting a horizontal load at the top of the rail of not less than 50 pounds per lineal foot.



## EXCEPTIONS:

1. Walls or other type separators may be used in lieu of the above guide rail, provided all the criteria are met.
2. Guide rails in industrial or commercial occupancies not accessible to the public may increase the open space between intermediate rails or ornamental pattern so that a 12-inch diameter sphere cannot pass through.
3. Doors swinging toward flow of traffic shall not be permitted for use by untrained pedestrian traffic unless actuating devices start to function at least 8 feet 11 inches beyond door in open position and guide rails extend 6 feet 5 inches beyond door in open position.
  - b. Clearances for guide rails shall be as follows:
    - (1) Six inches maximum between rails and leading edge of door at the closest point in its arc of travel.
    - (2) Six inches maximum between rails and the door in open position.
    - (3) Two inches minimum between rail at hinge side and door in open position.
    - (4) Two inches maximum between freestanding rails and jamb or other adjacent surface.

**5.53(8) Floor level at doors.** Regardless of the occupant load, there shall be a floor or landing on each side of a door. The floor or landing shall not be more than ½ inch lower than the threshold of the doorway. When doors are open over landings, the landing shall have a length of not less than 5 feet.

EXCEPTION: When the door opens into a stair of a smokeproof enclosure, the landing need not have a length of 5 feet.

**5.53(9) Door identification.** Glass doors shall conform to the requirements specified in Federal Specification DD-G-00451b, August 1966, and ANSI Standard Z97.1-1975.

Exit doors shall be so marked that they are readily distinguishable from the adjacent construction.

**5.53(10) Additional doors.** When additional doors are provided for egress purposes, they shall conform to all provisions of this chapter.

EXCEPTIONS: Approved revolving doors having leaves which will collapse under opposing pressures may be used in exit situations, provided:

1. Such doors have a minimum width of 6 feet 6 inches.
2. At least one conforming exit door is located adjacent to each revolving door.
3. The revolving door shall not be considered to provide any exit width.

**661—5.54(100) Corridors and exterior exit balconies.**

**5.54(1) General.** This section shall apply to every corridor serving as a required exit for an occupant load of ten or more. For the purposes of the section, the term "corridor" shall include "exterior exit balconies" and any covered or enclosed exit passageway, including walkways, tunnels and malls. Partitions, rails, counters and similar space dividers not over 5 feet 9 inches in height above the floor shall not be construed to form corridors.

Exit corridors shall not be interrupted by intervening rooms.

EXCEPTION: Foyers, lobbies or reception rooms constructed as required for corridors shall not be construed as intervening rooms.

**5.54(2) Width.** Every corridor serving an occupant load of ten or more shall be not less than 44 inches in width. Regardless of the occupant load, corridors in dwelling and lodging occupancies and within dwelling units in hotels, apartments, convent or monastery occupancies shall have a minimum width of 36 inches.

NOTE: See specific regulations for schools and institutions.

**5.54(3) Height.** Corridors and exterior exit balconies shall have a clear height of not less than 7 feet measured to the lowest projection from the ceiling.

**5.54(4) Projections.** The required width of corridors shall be unobstructed.

EXCEPTION: Handrails and doors, when fully opened, shall not reduce the required width by more than 7 inches. Doors in any position shall not reduce the required width by more than one-half. Other nonstructural projections such as trim and similar decorative features may project into the required width 1½ inches on each side.

**5.54(5) Access to exits.** When more than one exit is required, they shall be so arranged that it is possible to go in either direction from any point in a corridor to a separate exit, except for dead ends not exceeding 20 feet in length.

**5.54(6) Changes in elevation.** When a corridor or exterior exit balcony is accessible to the handicapped, changes in elevation of the floor shall be made by means of a ramp, except as provided for doors by subrule 5.53(8). Refer to state building code, division 7, handicapped access.

**5.54(7) Construction.** Walls of required exit corridors shall be of not less than one-hour fire-resistive construction and the ceiling shall be not less than that required for a one-hour fire-resistive floor or roof system.

EXCEPTIONS:

1. Corridors more than 30 feet in width where occupancies served by such corridors have at least one exit independent from the corridor.

2. Exterior sides of exterior exit balconies.

3. In institutional occupancies such as jails, prisons, reformatories and similar buildings with open-barred cells forming corridor walls, the corridors and cell doors need not be fire-resistive.

When the ceiling of the entire story is an element of a one-hour fire-resistive floor or roof system, the corridor walls may terminate at the ceiling. When the room side fire-resistive membrane of the corridor wall is carried through to the underside of a fire-resistive floor or roof above, the corridor side of the ceiling may be protected by the use of ceiling materials as required for one-hour floor or roof system construction or the corridor ceiling may be made of the same construction as the corridor walls.

Ceilings of noncombustible construction may be suspended below the fire-resistive ceiling.

**5.54(8) Wall and ceiling finish shall be in accordance with those requirements for a specific occupancy.** Interior finish in exits shall be limited to Class A. Class B may be permitted in a fully sprinklered building. See Table No. 5-C following 661—5.105(100).

**5.54(9) Openings.**

*a. Doors.* When corridor walls are required to be of one-hour fire-resistive construction by subrule 5.54(7), every door opening shall be protected by a tight fitting smoke and draft control assembly having a fire protection rating of not less than 20 minutes when tested in accordance with National Fire Protection Association Standard 252, 1984 edition, without the hose stream test. The door and frame shall bear an approved label or other identification showing the rating thereof, the name of the manufacturer and the identification of the service conducting the inspection of materials and workmanship at the factory during fabrication and assembly. Doors shall be maintained self-closing or shall be automatic closing by actuation of an approved smoke detector. Smoke and draft control door assemblies shall be provided with a gasket so installed as to provide a seal where the door meets the stop on both sides and across the top.

EXCEPTIONS:

1. Viewports, if required, may be installed having a hole not larger than 1 inch in diameter through the door, having at least a ¼-inch-thick glass disc and a metal holder which will not melt out when subject to temperatures of 1700° F.

2. Protection of openings in the interior walls of exterior exit balconies is not required.

*b. Openings other than doors.* Interior openings for other than doors or ducts shall be protected by fixed approved ¼-inch-thick wired glass installed in steel frames. The total area of all openings, other than doors, in any portion of an interior corridor shall not exceed 25 percent of the area of the corridor wall of the room which it is separating from the corridor.

For duct openings an approved fire damper shall be installed within the duct at each point the duct penetrates a fire-resistive floor-ceiling or roof-ceiling assembly and fire-rated corridor wall having openings into the corridor.

EXCEPTION: Protection of openings in the interior walls of exterior exit balconies is not required.

**5.54(10) Location on property.** Exterior exit balconies shall not be located in an area where openings are required to be protected due to location on the property.

### **661—5.55(100) Stairways.**

**5.55(1) General.** Every stairway having two or more risers serving any building or portion thereof shall conform to the requirements of this section.

EXCEPTION: Stairs or ladders used only to attend equipment are exempt from the requirements of this section.

**5.55(2) Width.** Stairways serving an occupant load of 50 or more shall be not less than 44 inches in width. Stairways serving an occupant load of 49 or less shall be not less than 36 inches in width. Private stairways serving an occupant load of less than 10 shall be not less than 30 inches in width.

Handrails may project into the required width a distance of 3½ inches from each side of a stairway. Other nonstructural projections such as trim and similar decorative features may project into the required width 1½ inches on each side.

**5.55(3) Rise and run.** The rise of every step in a stairway shall be not less than 4 inches nor greater than 7 inches. The run shall be not less than 11 inches as measured horizontally between the vertical planes of the furthestmost projection of adjacent treads. Except as permitted in subrule 5.55(4) the largest tread run within any flight of stairs shall not exceed the smallest by more than 3/8 inch. The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 inch.

EXCEPTIONS:

1. Private stairways serving an occupant load of less than ten and stairways to unoccupied roofs may be constructed with an 8-inch maximum rise and 9-inch minimum run.

2. Where the bottom riser adjoins a sloping public way, walk or driveway having an established grade and serving as a landing, a variation in height of the bottom riser of not more than 3 inches in every 3 feet of stairway width is permitted.

**5.55(4) Circular stairways.** Circular stairways may be used as an exit, provided the minimum width of run is not less than 10 inches and the smaller radius is not less than twice the width of the stairway. The largest tread width or riser height within any flight of stairs shall not exceed the smallest by more than 3/8 inch.

**5.55(5) Landings.** Every landing shall have a dimension measured in the direction of travel equal to the width of the stairway. Such dimension need not exceed 4 feet when the stair has a straight run. A door swinging over a landing shall not reduce the width of the landing to less than one-half its required width at any position in its swing nor by more than 7 inches when fully open.

EXCEPTION: Stairs serving an unoccupied roof are exempt from these provisions.

**5.55(6) Basement stairways.** When a basement stairway and a stairway to an upper story terminate in the same exit enclosure, an approved barrier shall be provided to prevent persons from continuing on into the basement. Directional exit signs shall be provided as specified in this chapter.

**5.55(7) Distance between landings.** There shall be no more than 12 feet vertically between landings.

**5.55(8) Handrails.**

a. Stairways shall have handrails on each side, and every stairway required to be more than 88 inches in width shall be provided with not less than one intermediate handrail for each 88 inches of required width. Intermediate handrails shall be spaced approximately equal across the entire width of the stairway. Handrails shall be able to withstand 50 pounds per lineal foot both horizontally and vertically.

EXCEPTIONS:

1. Stairways 44 inches or less in width and stairways serving one individual dwelling unit in residential occupancies may have one handrail provided on the open side or sides.

2. Private stairways 30 inches or less in width may have handrails on one side only.

b. Handrails shall be placed not less than 34 inches nor more than 38 inches above the nosing of treads. They shall be continuous the full length of the stairs and except for private stairways at least one handrail shall extend not less than 6 inches beyond the top and bottom riser. Ends shall be returned or shall terminate in newel posts or safety terminals.

The handgrip portion of handrails shall be not less than 1¼ inches nor more than 2 inches in cross-sectional dimension or the shape shall provide an equivalent gripping surface. The handgrip portion of handrails shall have a smooth surface with no sharp corners.

Handrails projecting from a wall shall have a space of not less than 1½ inches between the wall and the handrail.

**5.55(9) Guardrails or guards.** All unenclosed floor and roof openings, open and glazed sides of landings and ramps, balconies or porches which are more than 30 inches above grade or floor below, and roofs used for other than service of the building shall be protected by a guardrail. Guardrails shall not be less than 42 inches in height. Open guardrails and stair railings shall have intermediate rails or an ornamental pattern such that a sphere 6 inches in diameter cannot pass through. The height of stair railings on open sides may be as specified for handrails in subrule 5.55(8) in lieu of providing a guardrail. Ramps shall, in addition, have handrails as required by 5.55(8) or the state building code, division 7 (handicapped accessibility) if applicable.

EXCEPTIONS:

1. Guardrails on a balcony immediately in front of the first row of fixed seats and which are not at the end of an aisle may be 26 inches in height.

2. Guardrails need not be provided on the loading side of loading docks.

3. Guardrails need not be provided on the auditorium side of a stage or enclosed platform.

**5.55(10) Exterior stairway protection.** All openings in the exterior wall below or within 10 feet, measured horizontally, of an exterior exit stairway serving a building over two stories in height shall be protected by a self-closing fire assembly having a three-fourths hour fire protection rating.

EXCEPTION: Openings may be unprotected when two separated exterior stairways serve an exterior exit balcony.

**5.55(11) Interior stairway construction.** Interior stairways shall be constructed as specified in rule 5.58(100).

Except when enclosed usable space under stairs is prohibited by subrule 5.58(7), the walls and soffits of the enclosed space shall be protected on the enclosed side as required for one-hour fire-resistive construction.

All required interior stairways which extend to the top floor in any building four or more stories in height shall have, at the highest point of the stair shaft, an approved hatch openable to the exterior not less than 16 square feet in area with a minimum dimension of 2 feet.

EXCEPTION: The hatch need not be provided on smokeproof enclosures or on stairways that extend to the roof with an opening onto that roof.

**5.55(12) Exterior stairway construction.** Exterior stairways shall be of noncombustible material except that on steel, iron, masonry, concrete or wood buildings not exceeding two stories in height, they may be of wood not less than 2 inches in nominal thickness.

Exterior stairways shall not project into yards where protection of openings is required.

Enclosed usable space under stairs shall have the walls and soffits protected on the enclosed side as required for one-hour fire-resistive construction.

**5.55(13) Stairway to roof.** In every building four or more stories in height, one stairway shall extend to the roof surface, unless the roof has a slope greater than 4 in 12. See subrule 5.55(11) for roof hatch requirements.

**5.55(14) Headroom.** Every stairway shall have a headroom clearance of not less than 6 feet 6 inches. Such clearances shall be measured vertically from a plane parallel and tangent to stairway tread nosings to the soffit above at all points.

**5.55(15) Stairway numbering system.** An approved sign shall be located at each floor level landing in all enclosed stairways of buildings four or more stories in height. The sign shall indicate the floor level, the terminus of the top and bottom of the stairway and the identification of the stairway. The sign shall be located approximately 5 feet above the floor landing in a position which is readily visible when the door is in the open or closed position. Signs shall conform to the following:

- a. The sign shall be a minimum of 12 inches by 12 inches.
- b. The stairway location shall be placed at the top of the sign in 1-inch-high block lettering with ¼-inch stroke. (Stair No. 1 or west stair).
- c. The stairway's upper terminus shall be placed under the stairway identification in 1-inch-high block lettering with ¼-inch stroke (roof access or no roof access).
- d. The floor level number shall be placed in the middle of the sign in 5-inch-high lettering with ¾-inch stroke. The mezzanine levels shall have the letter "M" preceding the floor number. Basement levels shall have the letter "B" preceding the floor number.
- e. The lower and upper terminus of the stairway shall be placed at the bottom of the sign in 1-inch-high block lettering with ¼-inch stroke.
- f. These signs shall be maintained in an approved manner.

### **661—5.56(100) Ramps.**

**5.56(1) General.** Ramps used as exits shall conform to the provisions of this rule and state building code, division 7.

**5.56(2) Width.** The width of ramps shall be as required for stairways.

**5.56(3) Slope.** The slope of ramps required to be accessible to the handicapped shall meet the requirements of the state building code, administrative section, division 7. The slope of other ramps shall not be steeper than 1 vertical to 8 horizontal.

When provided with fixed seating, the main floor of the assembly room of an assembly occupancy may have a slope not steeper than 1 vertical to 5 horizontal.

**5.56(4) Landings.** Ramps having slopes steeper than 1 vertical to 15 horizontal shall have landings at the top and bottom, and at least one intermediate landing shall be provided for each 5 feet of rise. Top landings and intermediate landings shall have a dimension measured in the direction of ramp run of not less than 5 feet.

Doors in any position shall not reduce the minimum dimension of the landing to less than 42 inches and shall not reduce the required width by more than 3½ inches when fully open.

**5.56(5) Handrails.** Ramps having slopes steeper than 1 vertical to 15 horizontal shall have handrails as required for stairways, except that intermediate handrails shall not be required. Ramped aisles need not have handrails on sides serving fixed seating.

**5.56(6) Construction.** Ramps shall be constructed as required for stairways.

**5.56(7) Surface.** The surface of ramps shall be roughened or shall be of slip-resistant materials.

#### **661—5.57(100) Horizontal exit.**

**5.57(1) Used as a required exit.** A horizontal exit may be considered as a required exit when conforming to the provisions of this chapter. A horizontal exit shall not serve as the only exit from a portion of the building, and when two or more exits are required, not more than one-half of the total number of exits or total exit width may be horizontal exits.

**5.57(2) Openings.** All openings in the two-hour fire-resistive wall which provides a horizontal exit shall be protected by a fire assembly having a fire protection rating of not less than one and one-half hours. Such fire assembly shall be automatic closing upon actuation of a smoke detector.

**5.57(3) Discharge areas.** A horizontal exit shall lead into a floor area having capacity for an occupant load not less than the occupant load served by such exit. The capacity shall be determined by allowing 3 square feet of net clear floor area per ambulatory occupant and 30 square feet per nonambulatory occupant.

#### **661—5.58(100) Stairway, ramp and escalator enclosures.**

**5.58(1) General.** Every interior stairway, ramp or escalator shall be enclosed as specified in this rule.

##### EXCEPTIONS:

1. In other than institutional occupancies, an enclosure will not be required for a stairway, ramp or escalator serving only one adjacent floor and not connected with corridors or stairways serving other floors.

2. Stairs within individual apartments in hotels, apartments, monasteries and convent occupancies need not be enclosed.

3. Stairs in open parking garages open on two or more sides used exclusively for parking or storage of automobiles need not be enclosed.

4. Completely sprinklered buildings may be unenclosed up to three floors.

**5.58(2) Used as an exit.** Any escalator or moving walk serving as a required exit shall be enclosed in the same manner as an exit stairway.

EXCEPTION: In buildings required to have automatic sprinklers throughout, enclosures shall not be required for escalators or moving walks where the top of the opening at each story is provided with a draft curtain and automatic fire sprinklers are installed around the perimeter of the opening within 2 feet of the draft curtain. The draft curtain shall enclose the perimeter of the unenclosed opening and extend from the ceiling downward at least 12 inches. The spacing between sprinklers shall not exceed 6 feet.

**5.58(3) Enclosure construction.** Enclosure walls shall be of not less than two-hour fire-resistive construction in buildings more than four stories in height and shall be of not less than one-hour fire-resistive construction elsewhere.

**5.58(4) *Openings into enclosures.*** There shall be no openings into exit enclosures except exit doorways and openings in exterior walls. All exit doors in an exit enclosure shall be protected by a fire assembly having a fire-protection rating of not less than one hour where one-hour shaft construction is required. Doors shall be maintained self-closing or shall be automatic closing by actuation of an approved smoke detector. The maximum transmitted temperature end point shall not exceed 450°F above ambient at the end of 30 minutes of the fire exposure.

**5.58(5) *Extent of enclosure.*** Stairway and ramp enclosures shall include landings and parts of floors connecting stairway flights and shall also include a corridor on the ground floor leading from the stairway to the exterior of the building. Enclosed corridors or passageways are not required from unenclosed stairways. Every opening into the corridor shall comply with the requirements of subrule 5.58(4).

EXCEPTION: In office buildings, a maximum of 50 percent of the exits may discharge through a street floor lobby, provided the required exit width is free and unobstructed and the entire street floor is protected with an automatic sprinkler system.

**5.58(6) *Barrier.*** A stairway in an exit enclosure shall not continue below the grade level exit unless an approved barrier is provided at the ground floor level to prevent persons from accidentally continuing into the basement.

**5.58(7) *Use of space under stairways.*** There shall be no enclosed usable space under stairways in an exit enclosure, nor shall the open space under such stairways be used for any purpose.

### **661—5.59(100) Smokeproof enclosures.**

**5.59(1) *General.*** A smokeproof enclosure shall consist of a vestibule and continuous stairway enclosed from the highest point to the lowest point by walls of two-hour fire-resistive construction. The supporting frame shall be protected as set forth in fire codes or the provision of the authority having jurisdiction.

In buildings with air-conditioning systems or pressure air supply serving more than one story, an approved smoke detector shall be placed in the return air duct or plenum prior to exhausting from the building or being diluted by outside air. Upon activation the detector shall cause the return air to exhaust completely from the building without any recirculation through the building. Such devices may be installed in each room or space served by a return-air duct.

**5.59(2) *When required.*** In a building having a floor used for human occupancy which is located more than four stories or 65 feet above the lowest level of fire department vehicle access, all of the required exits shall be smokeproof enclosures.

EXCEPTION: Smokeproof enclosures may be omitted, provided all enclosed exit stairways are equipped with a barometric-dampened relief opening at the top and the stairway supplied mechanically with sufficient air to discharge a minimum of 2500 cubic feet per minute through the relief opening while maintaining a minimum positive pressure of 0.25 inch water column in the shaft relative to atmospheric pressure with all doors closed. Activation of the mechanical equipment shall be in accordance with subrule 5.59(7), paragraph "f."

**5.59(3) *Outlet.*** A smokeproof enclosure shall exit into a public way or into an exit passageway leading to a public way. The exit passageway shall be without other openings and shall have walls, floors and ceiling of two-hour fire-resistive construction.

**5.59(4) *Barrier.*** A stairway in a smokeproof enclosure shall not continue below the grade level unless an approved barrier is provided at the ground level to prevent persons from accidentally continuing into the basement.

**5.59(5) Access.** Access to the stairways shall be by way of a vestibule or open exterior exit balcony constructed of noncombustible materials.

**5.59(6) Smokeproof enclosure by natural ventilation.**

*a. Doors.* When a vestibule is provided, the door assembly into the vestibule shall have a one and one-half-hour fire-resistive rating, and the door assembly from the vestibule to the stairs shall be a smoke and draft control assembly having not less than a 20 minute fire-protection rating. Doors shall be maintained self-closing or shall be automatic closing by actuation of an approved smoke detector.

When access to the stairway is by means of an open exterior exit balcony, the door assembly to the stairway shall have a one and one-half-hour fire-resistive rating and shall be maintained self-closing or shall be automatic closing by actuation of an approved smoke detector.

*b. Open air vestibule.* The vestibule shall have a minimum dimension of 44 inches in width and 72 inches in direction of exit travel. The vestibule shall have a minimum of 16 square feet of opening in a wall facing an exterior court, yard or public way at least 20 feet in width.

**5.59(7) Smokeproof enclosure by mechanical ventilation.**

*a. Doors.* The doors assembly from the building into the vestibule shall have a one and one-half-hour fire-resistive rating and the door assembly from the vestibule to the stairway shall be a smoke and draft control assembly having not less than a 20 minute fire-resistive rating. The door to the stairways shall be provided with a dropsill or other provision to minimize the air leakage. The doors shall be automatic closing by actuation of an approved smoke detector or in the event of a power failure.

*b. Vestibule size.* Vestibules shall have a minimum dimension of 44 inches in width and 72 inches in direction of exit travel.

*c. Vestibule ventilation.* The vestibule shall be provided with not less than one air change per minute, and the exhaust shall be 150 percent of the supply. Supply air shall enter and exhaust air shall discharge from the vestibule through separate tightly constructed ducts used only for that purpose. Supply air shall enter the vestibule within 6 inches of the floor level. The top of the exhaust register shall be down from the top of the smoke trap and shall be entirely within the smoke-trap area. Doors, when in the open position, shall not obstruct duct openings. Duct openings may be provided with controlling dampers if needed to meet the design requirements but are not otherwise required.

*d. Smoke trap.* The vestibule ceiling shall be at least 20 inches higher than the door opening into the vestibule to serve as a smoke and heat trap and to provide an upward-moving air column. The height may be decreased when justified by engineering design and field testing.

*e. Stair shaft air movement system.* The stair shaft shall be provided with a dampered relief opening at the top and supplied mechanically with sufficient air to discharge a minimum of 2500 cubic feet per minute through the relief opening while maintaining a minimum positive pressure of 0.05 inch of water column in the shaft relative to atmosphere with all doors closed and a minimum of 0.10-inch water column difference between the stair shaft and the vestibule.

*f. Operation of ventilating equipment.* The activation of the ventilating equipment shall be initiated by an approved smoke detector installed outside the vestibule door in an approved location. The activation of the closing device on any door shall activate the closing devices on all doors of the smokeproof enclosure at all levels. When the closing device for the stair shaft and vestibule doors is activated by an approved smoke detector or power failure, the mechanical equipment shall operate at the levels specified in paragraphs "c" and "e."

*g. Standby power.* Standby power for mechanical ventilation equipment shall be provided by an approved self-contained generator set to operate whenever there is a loss of power in the normal house current. The generator shall be in a separate room having a minimum one-hour fire-resistive occupancy separation and shall have a minimum fuel supply adequate to operate the equipment for two hours.



*h. Acceptance testing.* Before the mechanical equipment is accepted by the authority having jurisdiction, it shall be tested to confirm that the mechanical equipment is operating in compliance with these requirements.

*i. Emergency lighting.* The stair shaft and vestibule shall be provided with emergency lighting. A standby generator which is installed for the smokeproof enclosure mechanical ventilation equipment may be used for such stair shaft and vestibule power supply.

**661—5.60(100) Exit courts.**

**5.60(1) General.** Every exit court shall discharge into a public way or exit passageway.

**5.60(2) Width.** Exit court minimum widths shall be determined in accordance with provisions based on the occupant load and such required width shall be unobstructed to a height of 7 feet except for projections permitted in corridors by this chapter. The minimum exit court width shall be not less than 44 inches.

When the width is reduced from any cause, the reduction shall be affected gradually by a guardrail at least 3 feet in height and making an angle of not more than 30 degrees with the axis of the exit court.

**5.60(3) Number of exits.** Every exit court shall be provided with exits as determined by this chapter.

**5.60(4) Construction and openings.** When an exit court serving a building or portion thereof having an occupant load of ten or more is less than 10 feet in width, the exit court walls shall be a minimum of one-hour fire-resistive construction for a distance of 10 feet above the floor of the court and all openings therein shall be protected by fire assemblies having a fire-protection rating of not less than three-fourths hour.

**661—5.61(100) Exit passageways.**

**5.61(1) Construction and openings.** The walls of exit passageways shall be without openings other than required exits and shall have walls, floors and ceilings of the same period of fire resistance as required for the walls, floors and ceilings of the buildings served with a minimum of one-hour fire-resistive construction. Exit opening through the enclosing walls of exit passageways shall be protected by fire assemblies having a three-fourths-hour fire protection rating.

**5.61(2) Detailed requirements.** Except for construction and opening protection as specified in subrule 5.61(1) above, exit passageways shall comply with the requirements for corridors as specified in 5.54(100).

**661—5.62(100) Exit illumination.**

**5.62(1) General.** Except within individual dwelling units, guest rooms, and sleeping rooms, exits shall be illuminated at any time the building is occupied with light having intensity of not less than 1 foot-candle at floor level.

EXCEPTION: In auditoriums, theaters, concert or opera halls and similar assembly uses, the illumination at floor level may be reduced during performance to not less than 0.2 foot-candle.

Fixtures required for exit illumination shall be supplied from separate circuits or sources of power where these are required by subrule 5.62(2).

**5.62(2) Emergency power supply.** The power supply for exit illumination shall normally be provided by the premises' wiring system. In the event of its failure, illumination shall be automatically provided from an emergency system where the occupant load served by the exiting system exceeds 50.

EXCEPTION: Churches with an occupancy of 300 or less, used exclusively for religious worship, shall not be required to have emergency lighting.

Emergency systems shall be supplied from an approved rechargeable system or an on-site generator and the system shall be installed in accordance with the requirements of the electrical code.

**661—5.63(100) Exit signs.**

**5.63(1) Where required.** Exit signs shall be installed at required exit doorways and where otherwise necessary to clearly indicate the direction of egress when the exit serves as an occupant load of 50 or more.

EXCEPTION: Main exterior exit doors which obviously and clearly are identifiable as exits need not be signed when approved by the authority having jurisdiction.

**5.63(2) Graphics.** The color and design of lettering, arrows and other symbols on exit signs shall be in high contrast with their background. Words on the sign shall be in block letters 6 inches in height with a stroke of not less than  $\frac{3}{4}$  inch.

**5.63(3) Illumination.** Signs shall be internally or externally illuminated by two electric lamps or shall be of an approved self-luminous type. When the luminance on the face of an exit sign is from an external source, it shall have an intensity of not less than 5.0 foot-candles from either lamp. Internally illuminated signs shall provide equivalent luminance.

**5.63(4) Power supply.** Current supply to one of the lamps for exit signs shall be provided by the premises' wiring system. Power to the other lamp shall be from storage batteries or an on-site generator set and the system shall be installed in accordance with the National Electrical Code.

**661—5.64(100) Aisles.**

**5.64(1) General.** Aisles leading to required exits shall be provided from all portions of the buildings.

**5.64(2) Width.** Aisle widths shall be provided in accordance with the following:

a. In areas serving employees only, the minimum aisle width may be 24 inches but not less than the width required by the number of employees served.

b. In public areas of mercantile, office, plant and workshop occupancies, and in assembly occupancies without fixed seats, the minimum clear aisle width shall be 36 inches where tables, counter, furnishings, merchandise or other similar obstructions are placed on one side of the aisle only and 44 inches where such obstructions are placed on both sides of the aisle.

c. In assembly occupancies with fixed seats.

(1) With standard seating, every aisle shall be not less than 3 feet when serving seats on only one side and not less than 42 inches wide when serving seats on both sides. Such minimum width shall be measured at the point furthest from the exit, cross aisle or foyer and such minimum width shall be increased by  $1\frac{1}{2}$  inches for each 5 feet of length toward the exit, cross aisle or foyer.

(2) With continental seating as specified in rule 5.65(100) side aisles shall be provided and be not less than 44 inches in width.

**5.64(3) Distances to nearest exit.** In areas occupied by seats and in assembly occupancies without seats, the line of travel to an exit door by an aisle shall be not more than 150 feet. Such travel distance may be increased to 200 feet if the building is provided with an approved automatic sprinkler system.

**5.64(4) Aisle spacing.** With standard seating, aisles shall be so located that there will be not more than six intervening seats between any seat and the nearest aisle.

With continental seating, the number of intervening seats may be increased provided the seating configuration conforms with the requirements specified in rule 5.65(100).

When benches or pews are used, the number of seats shall be based on one person for each 18 inches of length of pew or bench.

**5.64(5) Cross aisles.** Aisles shall terminate in a cross aisle, foyer or exit. The width of the cross aisle shall be not less than the sum of the required width of the widest aisle plus 50 percent of the total required width of the remaining aisles leading thereto. In assembly and education occupancies, aisles shall not have a dead end greater than 20 feet in length.

**5.64(6) Vomitories.** Vomitories connecting the foyer or main exit with the cross aisles shall have a total width not less than the sum of the required width of the widest aisle leading thereto plus 50 percent of the total required width of the remaining aisles leading thereto.

**5.64(7) Slope.** The slope portion of aisles shall be not steeper than one vertical in eight horizontal, except as permitted in subrule 5.56(3).

**5.64(8) Steps.** Steps shall not be used in an aisle when the change in elevation can be achieved by a slope conforming to subrule 5.64(7). A single step or riser shall not be used in any aisle. Steps in aisles shall extend across the full width of the aisle and shall be illuminated. Treads and risers in such steps shall comply with subrule 5.55(3).

**661—5.65(100) Seat spacing.**

**5.65(1) Standard seating.** With standard seating, the spacing of rows of seats shall provide a space of not less than 12 inches from the back of one seat to the front of the most forward projection of the seat immediately behind it as measured horizontally between vertical planes.

**5.65(2) Continental seating.** The number of seats per row for continental seating may be increased subject to all of the following conditions:

*a.* The spacing of unoccupied seats shall provide a clear width between rows of seats measured horizontally as follows (automatic or self-rising seats shall be measured in the seat-up position, other seats shall be measured in the seat-down position):

1. 18 inches between rows for 1 to 18 seats
2. 20 inches between rows for 19 to 35 seats
3. 21 inches between rows for 36 to 45 seats
4. 22 inches between rows for 46 to 59 seats
5. 24 inches between rows for 60 seats or more

*b.* Exit doors shall be provided along each side aisle of the row of seats at the rate of one pair of doors for each five rows of seats.

*c.* Each pair of exit doors shall provide a minimum clear width of 66 inches discharging into a foyer, lobby or the exterior of the building.

*d.* There should be not more than five seat rows between pairs of doors.

**661—5.66 to 5.99 Reserved.**

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## LIFE SAFETY REQUIREMENTS FOR EXISTING BUILDINGS

**661—5.100(100) Exits and escapes.**

**5.100(1)** General. All buildings must meet the requirements set forth in General Rules and Regulations for Means of Exit with the following exceptions permitted for existing buildings. The purpose of rules 5.100(100) to 5.105(100) is to provide a reasonable degree of safety to persons occupying existing buildings that do not conform with the minimum requirements of this code by providing for reasonable and equivalent safety.

EXCEPTION: One- and two-family dwellings, private garages, carports, sheds and agricultural buildings.

**5.100(2)** Effective date. Existing buildings will be classified as those constructed prior to the effective date of these rules.

**5.100(3)** Change of occupancy classification. A change from one occupancy classification to another, in any building or structure, whether necessitating a physical alteration or not, may be made only if such building or structure conforms with the requirements of rules applying to new buildings or the proposed new use.

**5.100(4)** Provisions of this chapter shall apply to existing buildings as well as new, except that the authority having jurisdiction may permit conditions legally in existence at the time of the adoption of these rules.

Those buildings, structures or facilities not legally in existence or not meeting these rules at the time of their adoption shall within a reasonable period designated by the state fire marshal or the authority having jurisdiction complete the work necessary.

**5.100(5)** Rescinded IAB 9/16/92, effective 11/1/92.

**5.100(6)** The requirements of subrule 5.52(6) for automatic sprinkler systems shall not apply to buildings constructed prior to the effective date of these rules unless required by specific occupancies enforced by the state fire marshal under the state fire marshal's jurisdiction.

This rule is intended to implement Iowa Code section 100.35.

**661—5.101(100) Exits.**

**5.101(1)** *Number of exits.* Every floor above the first story used for human occupancy shall have access to at least two separate exits, one of which may be an exterior fire escape. Subject to the approval of the authority having jurisdiction, an approved ladder device may be used in lieu of a fire escape when the construction feature or location of the building on the property make the installation of a fire escape impracticable.

An exit ladder device may be used only when:

- a. It serves an occupant load of ten or less or a single dwelling unit or guest room.
- b. The building does not exceed three stories in height.
- c. The access is adjacent to an opening as specified for emergency egress or rescue from a balcony.
- d. It does not pass in front of any building opening below the unit being served.
- e. The availability of activating the device for the ladder is accessible only from the opening or balcony served.
- f. It is so installed that it will not cause a person using it to be within 6 feet of exposed electrical wiring.
- g. All load-bearing surfaces and supporting hardware shall be of noncombustible materials. Exit ladder devices shall have a minimum width of 12 inches when in the position intended for use. The design load shall be not less than 400 pounds for 16-foot length and 600 pounds for 25-foot length.
- h. Exit ladder devices shall be capable of withstanding an applied load of four times the design load when installed in the manner intended for use. Test loads shall be applied for a period of one hour.

**5.101(2) Stair construction.** All required stairs shall have a minimum run of 9 inches and a maximum rise of 8 inches and shall have a minimum width of 30 inches exclusive of handrails. Every stairway shall have at least one handrail. A landing having a minimum 30-inch run in the direction of travel shall be provided at each point of access to the stairway. Exterior stairs shall be of noncombustible construction.

EXCEPTION: Fire escapes as provided for in this section.

EXCEPTION: On buildings of types III, IV, V, provided the exterior stairs are constructed of wood not less than 2 inches nominal thickness.

**5.101(3) Corridors.** Corridors serving as required exit for an occupant load of 30 or more shall have walls and ceilings of not less than one-hour fire-resistive construction as required by this chapter.

Existing walls surfaced with wood lath and plaster in good condition or ½ inch gypsum wallboard or openings with fixed wired glass set in steel frames are permitted for corridor walls and ceilings and occupancy separations when approved. Doors opening into such corridors shall be protected by 20 minute fire assemblies or solid wood doors not less than 1¾ inches thick. Where the existing frame will not accommodate the 1¾-inch-thick door, a 1 3/8-inch-thick solid bonded wood core door or equivalent insulated steel door shall be permitted. Doors shall be self-closing or automatic-closing by smoke detection. Transoms and openings other than doors from corridors to rooms shall comply with subrule 5.54(9) of this code or shall be covered with a minimum of 5/8-inch gypsum wallboard or equivalent material on both sides. Transoms shall be fixed in a closed position.

EXCEPTION: Existing corridor walls, ceilings and opening protection not in compliance with the above may be continued when such buildings are protected with an approved automatic sprinkler system throughout. Such sprinkler system may be supplied from the domestic water system if it is of adequate volume and pressure.

**5.101(4) Fire escapes.**

a. Existing fire escapes which in the opinion of the authority having jurisdiction comply with the intent of this section may be used as one of the required exits. The location and anchorage of fire escapes shall be of approved design and construction.

b. Fire escapes shall comply with the following:

(1) Access from a corridor shall not be through an intervening room.

(2) All openings within 10 feet shall be protected by three-fourth-hour fire assemblies. When located within a recess or vestibule, adjacent enclosure walls shall be of not less than one-hour fire-resistive construction.

(3) Egress from the building shall be by a clear opening having a minimum dimension of not less than 29 inches. Such openings shall be openable from the inside without the use of a key or special knowledge or effort. The sill of an opening giving access shall be at the floor of the building or balcony.

(4) Fire escape stairways and balconies shall support the dead load plus a live load of not less than 100 pounds per square foot and shall be provided with a top and intermediate handrail on each side. The pitch of the stairway shall not exceed 60 degrees with a minimum width of 18 inches. Treads shall be not less than 4 inches in width and the rise between treads shall not exceed 10 inches. All stair and balcony railings shall support a horizontal force of not less than 50 pounds per lineal foot of railings.

(5) Balconies shall be not less than 44 inches in width with on floor opening other than the stairway opening greater than 5/8 inch in width. Stairway openings in such balconies shall be not less than 22 inches by 44 inches. The balustrade of each balcony shall be not less than 36 inches high with not more than 9 inches between balusters.

(6) Fire escapes shall extend to the roof or provide an approved gooseneck ladder between the top floor landing and the roof when serving buildings four or more stories in height having roofs with less than 4:12 slope. Approved gooseneck ladders shall be designed and connected to the building to withstand a horizontal force of 100 pounds per lineal foot, each rung shall support a concentrated load of 500 pounds placed anywhere on the rung. All ladders shall be at least 15 inches wide, located within 12 inches of the building and shall be placed flatwise relative to the face of the building. Ladder rungs shall be at least  $\frac{3}{4}$  inch in diameter and shall be located 12 inches on center. Openings for roof access ladders through cornices and similar projections shall have minimum dimensions of 30 inches by 33 inches.

(7) The lowest balcony shall be not more than 18 feet from the ground. Fire escapes shall extend to the ground or be provided with counterbalanced stairs reaching to the ground.

(8) Fire escapes shall not take the place of stairways required by the codes under which the building was constructed.

(9) Fire escapes shall be kept clear and unobstructed at all times and maintained in good working order.

(10) All fire escapes shall have walls or guards on both sides, with handrails not less than 30 inches nor more than 42 inches high measured vertically from a point on the stair tread 1 inch back from the leading edge.

(11) All supporting members for balconies and stairs that are in tension and are fastened directly to the building shall pass through the wall and be securely fastened on the opposite side or they shall be securely fastened to the framework of the building. Where opposite metal members pass through walls, they shall be protected effectively against corrosion.

(12) Tread construction must be solid, with  $\frac{1}{2}$ -inch diameter perforations permitted.

**5.101(5)** *Exit and fire escape signs.* Exit signs shall be provided as required by rule 5.62(100).

EXCEPTION: The use of existing exit signs may be continued when approved by the authority having jurisdiction.

All doors or windows providing access to a fire escape shall be provided with fire escape signs.

#### **661—5.102(100) Enclosure of vertical shafts.**

**5.102(1)** Interior vertical shafts, including but not limited to stairways, elevator hoistways, service and utility shafts, shall be enclosed by a minimum of one-hour fire-resistive construction. All openings into such shafts shall be protected with one-hour fire assemblies which shall be maintained self-closing or be automatic closing by smoke detection. All other openings shall be fire protected in an approved manner.

EXCEPTIONS:

1. An enclosure will not be required for openings serving only one adjacent floor, unless otherwise required by specific occupancies.

2. Stairways need not be enclosed in a continuous vertical shaft if each story is separated from other stories by one-hour fire-resistive construction or approved wired glass set in steel frames.

3. Vertical openings need not be protected if the building is protected by an approved automatic sprinkler system, and does not exceed three stories.

**5.102(2)** Reserved.

#### **661—5.103(100) Standpipes.**

**5.103(1)** Any buildings over four stories in height shall be provided with an approved Class I or III standpipe system.

**5.103(2)** Reserved.

**661—5.104(100) Separation of occupancies.**

**5.104(1)** Occupancy separations shall be provided as required by the authority having jurisdiction, with a minimum of one hour either vertically or horizontally or both. When approved by the authority having jurisdiction, existing wood lath and plaster in good condition or 1/2-inch gypsum wallboard may be acceptable where one hour occupancy separations are required.

**5.104(2)** Reserved.

**661—5.105(100) Dead-end corridors.**

**5.105(1)** In existing buildings, when correction of a dead-end corridor is impractical, dead-end corridor length of specific occupancies may be extended, provided additional smoke detection and safeguards are installed, as determined by the authority having jurisdiction. Occupancy and dead-end corridor lengths are as follows:

Residential	35 feet	Business (Office)	50 feet
Mercantile	50 feet	Industrial	50 feet

**5.105(2)** Reserved.

TABLE NO. 5 — A — MINIMUM EGRESS AND ACCESS REQUIREMENTS

USE	MINIMUM OF TWO EXITS OTHER THAN ELEVATORS ARE REQUIRED WHERE NUMBER OF OCCUPANTS IS AT LEAST	OCCUPANT LOAD FACTOR
1. Aircraft Hangars (no repair)	10	500
2. Auction Rooms	30	7
3. Assembly Areas, Concentrated Use (without fixed seats) Auditoriums Bowling Alleys (Assembly areas) Churches and Chapels Dance Floors Lodge Rooms Reviewing Stands Stadiums	50	7
4. Assembly Areas, Less-concentrated Use Conference Rooms Dining Rooms Drinking Establishments Exhibit Rooms Gymnasiums Lounges Stages	50	15
5. Children's Homes and Homes for the Aged	6	80
6. Classrooms	50	20
7. Dormitories	10	50
8. Dwellings	10	300
9. Garage, Parking	30	200
10. Hospitals and Sanitariums — Nursing Homes	6	80
11. Hotels and Apartments	10	200
12. Kitchen — Commercial	30	200
13. Library Reading Room	50	50
14. Locker Rooms	30	50
15. Mechanical Equipment Room	30	300
16. Nurseries for Children (Day-care)	7	35
17. Offices	30	100
18. School Shops and Vocational Rooms	50	50
19. Skating Rinks	50	50 on the skating area; 15 on the deck
20. Stores — Retail Sales Rooms Basement Ground Floor Upper Floors	7 50 10	20 30 50
21. Swimming Pools	50	50 for the pool area; 15 on the deck
22. Warehouses	30	300
23. Lobby Accessory to Assembly Occupancy	50	7
24. Malls	50	30
25. All others	50	100



**TABLE NO. 5 -B- TYPES OF CONSTRUCTION — FIRE-RESISTIVE REQUIREMENTS**  
(In Hours)  
For Details see Chapters under Occupancy and Types of Construction

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV		TYPE V	
	NONCOMBUSTIBLE				COMBUSTIBLE					
	Fire-Resistive	Fire-Resistive	1-Hr.	N	1-Hr.	N	H.T.	1-Hr.	N	
Exterior Bearing Walls	4	4	1	N	4	4	4	1	N	
Interior Bearing Walls	3	2	1	N	1	N	1	1	N	
Exterior Nonbearing Walls	4	4	1	N	4	4	4	1	N	
Structural Frame <sup>1</sup>	3	2	1	N	1	N	1 or H.T.	1	N	
Partitions — Permanent	1 <sup>2</sup>	1 <sup>2</sup>	1 <sup>2</sup>	N	1	N	1 or H.T.	1	N	
Shaft Enclosures	2	2	1	1	1	1	1	1	1	
Floors	2	2	1	N	1	N	H.T.	1	N	
Roofs	2	1	1	N	1	N	H.T.	1	N	

N—No general requirements for fire resistance H.T.—Heavy Timber

<sup>1</sup>Structural frame elements in the exterior wall shall be protected against external fire exposure as required for exterior bearing walls or the structural frame, whichever is greater.

<sup>2</sup>Fire retardant treated wood may be used in the assembly, provided fire-resistance requirements are maintained.

**TABLE NO. 5-C Interior Wall and Ceiling Finish Ratings**

Occupancy	Exits	Access to Exits	Other Spaces
Assembly—New	A	A or B	A or B
Assembly—Existing	A	A or B	A, B, or C
Educational—New	A	A or B	A or B
Educational—Existing	A	A or B	A, B, or C
Day Care Centers—New	A	A	A or B
Day Care Centers—Exist.	A or B	A or B	A or B
RCF/Care Homes Lodging	A or B	A, B, or C	A, B, or C
Health Care (ICF/SNF) —New	A	A	A, (B in small individual room)
Health Care (ICF/SNF) —Existing A or B	A or B	A or B	A or B
Residential, Hotels, Apartment & Dormitories	A	A or B	A, B, or C

Exposed portions of structural members complying with the requirements for heavy timber construction may be permitted.

Automatic Sprinklers—where a complete standard system of automatic sprinklers is installed, interior wall and ceiling finish with flame spread rating not over Class C may be used in any location where Class B is required and a rating of Class B in any location where Class A is required.

Any carpet installed on walls or ceilings shall be Class A and installed only where automatic sprinkler protection is provided.

Class A Interior Finish—Flame spread 0-25, smoke developed 0-450;

Class B Interior Finish—Flame spread 26-75, smoke developed 0-450;

Class C Interior Finish—Flame spread 76-200, smoke developed 0-450 when tested in accordance with National Fire Protection Association Standard No. 225, 1988.

TABLE NO. 5-D Carpet Specifications

The following applies to all newly applied carpet installed as floor covering in new and existing buildings. Carpet which was in compliance with the regulations in effect when it was installed may remain. These carpet specifications supersede all previously issued carpet specifications.

Occupancy	Exits	Access to Exits
Assembly	NR	NR
Educational	NR	NR
Day Care	I or II	I or II
Health Care	I	I
Residential — Hotels, Apartments, Dormitories	I or II	I or II

I = Class I Interior Floor Finish: minimum 0.45 watts per square centimeter (See Radiant Panel Test, NFPA 253 or ASTM E-648).

II = Class II Interior Floor Finish: minimum 0.22 watts per square centimeter Critical Radiant Flux (See NFPA 253 or ASTM E-648).

NR = Non-rated

In a building which is completely protected by an automatic fire sprinkler system Class II may be used in lieu of Class I and Non-rated carpet may be used in lieu of Class II.

These specifications apply only to carpet installed on floors. Any carpet installed on walls or ceilings shall have a Class A finish rating when tested in accordance with NFPA Standard No. 225 of ASTM E-84 and be installed only where automatic sprinkler protection is provided.

NOTE: The floor radiant panel provides a measure of a floor covering's tendency to spread flames when located in a corridor and exposed to the flame and hot gases from a room fire. The Flooring Radiant Panel Test method is to be used as a basis for estimating the fire performance of a floor covering installed in the building corridor. Floor coverings in open building spaces and in rooms within buildings merit no further regulation, providing it can be shown that the floor covering is at least as resistant to spread of flame as a material that will meet the federal flammability standard, FFI-70, Standard for the Surface Flammability of Carpets and Rugs (Pill Test). All carpeting sold in the U.S. since 1971 is required to meet this standard and, therefore, is not likely to become involved in a fire until a room reaches or approaches flashover. Therefore, no further regulations are necessary for carpet other than in exitways and corridors.

It has not been found necessary or practical to regulate interior floor finishes on the basis of smoke development.

**661—5.106 to 5.229** Reserved.

[Filed 4/7/83, Notice 3/2/83—published 4/27/83\*, effective 6/2/83]  
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 [Filed 8/25/92, Notice 5/13/92—published 9/16/92, effective 11/1/92]

**661—5.230(100) High-rise buildings.** This rule establishes requirements relating to the installation of an automatic fire extinguishing system in high-rise buildings that are required by Iowa Code section 100.39.

**5.230(1) Definitions.** “Automatic fire extinguishing system” is an approved system of devices and equipment which automatically detects a fire and discharges an approved fire extinguishing agent onto or in the area of a fire.

**5.230(2) Compliance.** Buildings that are required to be equipped with an automatic fire extinguishing system shall meet the standard for the “Installation of Sprinkler Systems,” No. 13, 1987 edition of the National Fire Protection Association, together with its reference to other specific standards referred to and contained within the volumes of the National Fire Code, 1988 edition of the National Fire Protection Association, published in 1988.

A copy of these standards is available for review in the state fire marshal’s office or may be obtained from the National Fire Protection Association, Batterymarch Park, Quincy, Massachusetts 02269.

**5.230(3) Approval.** Plans for a building required to have an automatic fire extinguishing system shall be approved prior to construction. Approval shall be obtained from the fire marshal, a designee of the state fire marshal or the authority having jurisdiction.

Subject to the approval of the fire marshal, automatic fire extinguishing systems that use water may be omitted in rooms or areas where they are considered undesirable because of the nature of the contents. The fire marshal may require the use of another automatic extinguishing agent or the installation of an automatic detection system.

**5.230(4) Existing buildings.** Buildings or structures to which additions, alterations, or repairs are made shall comply with all of the requirements for new buildings or structures. Buildings in existence at the time of adoption of this code may have their existing use or occupancy continued, if this occupancy was legal at the time of the adoption of this code, and provided such continued use is not dangerous to life.

**5.230(5) Parking garages.** Open parking garages over four stories in height are exempt from automatic fire extinguishing requirements, provided they are of noncombustible construction and house no occupancy above the open parking garage.

NOTE: An open parking garage shall meet the definition and requirements as spelled out in the Uniform Building Code (1988 Edition), Section 709(b).

Any level which does not qualify as an open parking garage and all levels below shall have an approved automatic fire extinguishing system.

All other parking structures shall comply with the standards for “Parking Structures” No. 88A, 1985 Edition of the National Fire Protection Association.

This rule is intended to implement Iowa Code section 100.39.

**661—5.231 to 5.249** Reserved.

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\*Tables published in 6/8/83 IAB

LIQUEFIED PETROLEUM GASES

Rescinded IAB 11/27/02, effective 1/1/03. See 661—Chapter 51.

**661—5.250 to 5.274** Reserved.

LIQUEFIED NATURAL GAS

Rescinded IAB 11/27/02, effective 1/1/03. See 661—Chapter 51.

**661—5.275 to 5.299** Reserved.

FLAMMABLE AND COMBUSTIBLE LIQUIDS CODE

Rescinded IAB 11/27/02, effective 1/1/03. See 661—Chapter 51.

**661—5.300 to 5.349** Reserved.

OIL BURNING EQUIPMENT

Rescinded IAB 11/27/02, effective 1/1/03. See 661—Chapter 51.

**661—5.350 to 5.399** Reserved.

STORAGE OF FLAMMABLE AND COMBUSTIBLE LIQUIDS ON FARMS AND  
ISOLATED CONSTRUCTION PROJECTS

Rescinded IAB 11/27/02, effective 1/1/03. See 661—Chapter 51.

**661—5.400 to 5.449** Reserved.

TRANSPORTATION AND DELIVERY OF FLAMMABLE AND COMBUSTIBLE LIQUIDS  
BY TANK VEHICLES

Rescinded IAB 11/27/02, effective 1/1/03. See 661—Chapter 51.

**661—5.450 to 5.499** Reserved.

## CHILD CARE CENTERS

**661—5.500(100) Definitions.** The following definitions apply to rules 661—5.500(100) to 661—5.549.

“*Approved*” is defined as being acceptable to the state fire marshal.

“*Approved equipment and material*” shall mean any equipment or material tested and listed by a nationally recognized testing laboratory.

“*Approved standards*” shall mean any standard or code prepared and adopted by a nationally recognized association.

“*Attic*,” when used in these standards, shall mean the space between the ceiling beams of the top habitable story and the roof rafters.

“*Automatic*,” as applied to a door, window or other protection for an opening shall mean that such door, window or other protection is so constructed and arranged that if open it will close when subjected to a predetermined temperature or rate of temperature rise.

“*Automatic sprinkler system*” shall mean an arrangement of piping and sprinkler designated to operate automatically by the heat of fire and to discharge water upon the fire, according to the standards of the National Fire Protection Association.

“*Basement*” or cellar for these regulations shall mean that part of a building where the finish floor is more than 30 inches below the finish grade at the building.

“*Child occupied areas*” used in this regulation for purposes of area separation, means of egress and use, as that area used for sleeping, dining, activity and educational purposes and other areas subject to occupancy by children.

“*Combustible*” shall mean capable of undergoing combustion.

“*Combustible or hazardous storage area of room*” shall mean those areas containing heating apparatus and boiler rooms, basements or attics used for the storage of combustible material, flammable liquids, workrooms such as kitchen, laundry, handicraft shops, carpenter shops, paint shops, and upholstery shops, central storerooms such as furniture, mattresses and miscellaneous storage, and similar occupancies intended to contain combustible material which will either be easily ignited, burn with an intense flame or result in the production of dense smoke and fumes.

*“Existing center”* is that which is already in existence at the date these rules go into effect.

*“Exit”* is that portion of a means of egress which is separated from all other spaces of the building or structure by construction or equipment as required in these regulations to provide a protected way of travel to the exit discharge.

*“Exit access”* is that portion of a means of egress which leads to an entrance to an exit.

*“Exit discharge”* is that portion of a means of egress between the termination of an exit and a public way.

*“Fire door”* shall mean a door and its assembly, so constructed and assembled in place as to give protection against the passage of fire, equal to surrounding construction.

*“Fire extinguisher rating”* shall be as stated in National Fire Protection Association pamphlet No. 10.

*“Fire marshal”* means the state fire marshal, any of the state fire marshal’s staff, or assistant state fire inspectors, carrying authorized cards signed by the state fire marshal.

*“Fire partition”* shall mean a partition which subdivides a story of a building to provide an area of refuge or to restrict the spread of fire for a minimum of one hour.

*“Fire-resistance rating”* shall mean the time in hours or fractions thereof that materials or their assemblies will resist fire exposure as determined by fire tests conducted in compliance with approved standards.

*“Fire resistive”* shall mean that property of materials or assemblies which prevents or retards the passage of excessive heat, hot gases or flames under condition of use. The term *“fire resistive”* shall mean the same as *“fire resistance.”*

*“Fire wall”* shall mean a wall of brick or reinforced concrete having adequate fire resistance and structural stability under fire conditions to accomplish the purpose of completely subdividing a building or of completely separating adjoining building to resist the spread of fire. A fire wall shall extend continuously through all stories from foundation to or above the roof.

*“Floor area net”* shall be the actual occupied area not including accessory unoccupied areas or thickness of walls.

*“Interior finish material”* shall be classified in accordance with the method of tests of surface burning characteristics of building material National Fire Protection Association Standard No. 255, Test Methods, Surface Burning—Building Materials, 1969. Classification of interior finish material shall be in accordance with tests made under conditions simulating actual installations, provided that the state fire marshal may by rule establish the classification of any material on which a rating by standard test is not available. Interior finish material shall be grouped in the following classes in accordance with their flame spread and related characteristics.

Class A. Interior finish flame spread 0-25.

Class B. Interior finish flame spread 25-75.

Class C. Interior finish flame spread 75-100.

*“Mixed occupancy”* shall mean when the building is used for more than one occupancy purpose.

*“Panic hardware”* shall cause the door latch to release when pressure of not to exceed 15 pounds is applied to the releasing devices in the direction of exit travel. Such releasing devices shall be bars or panels extending not less than two-thirds of the width of the door and placed at height not less than 30 nor more than 44 inches above the floor. Only approved panic hardware shall be used on exit doors.

*"Self-closing"* shall mean to be equipped with an approved device which will ensure closing after having been opened.

*"Sprinklered"* shall mean to be completely protected by an approved system of automatic sprinklers installed and maintained in accordance with approved standards.

*"State fire marshal"* shall mean the chief officer of the division of fire protection as described in Iowa Code section 100.1 or one authorized to act in the state fire marshal's absence.

*"Story"* shall mean that part of a building comprised between a floor and ceiling or roof next above. The first story shall be that story which is of such height above the ground that it does not come within the definition of a basement or cellar.

*"Types of construction"* shall be defined in National Fire Protection Association, pamphlet No. 220, published in 1985.

*"Unduly endanger"* shall mean beyond a normal limit bring into danger or peril.



**661—5.501(100) Child care centers in mixed occupancies.**

**5.501(1)** *“Application—mixed occupancy.”* All child care centers seeking licenses under Iowa Code chapter 237A, located in mixed occupancies shall meet the requirements of the primary use and occupancy of the building as promulgated by the state fire marshal. If no such rules exist the following shall be complied to and the area used for child care shall comply as per number of children occupying the center at any given time.

**5.501(2)** *“Mixed occupancy.”*

*a. “Not meeting codes.”* In facilities not meeting nationally recognized codes for child care centers the minimum division between the child occupied area and other areas shall be a one-hour fire partition and the perimeter protected with an approved fire detection or automatic extinguishing system as directed by the fire marshal. Less than a one-hour partition may be accepted when the fire marshal approves adequate perimeter protection.

*b. “Meeting recognized codes.”* Where child care centers are located in a building containing mixed occupancies, the separation requirements of a nationally recognized code are satisfied, it shall be considered as complying to the section above.

*c. “Undue danger.”* Child care centers shall not be in buildings of mixed occupancies where the acts of other occupants could unduly endanger the lives of the children in the child care center.

**661—5.502(100) Child care centers for seven or more children.****5.502(1) “Application.”**

a. *“Life safety requirements.”* This section establishes life safety requirements for child care centers in which seven or more children receive care.

b. *“Regulations shall apply to all centers.”* These subrules of the regulations shall apply to all centers. These regulations shall constitute the minimum requirements for centers for approval by the state fire marshal’s office. Further, and more stringent, requirements may be required by other governmental divisions, or subdivisions, as a requirement for participation in various programs, or to comply with local codes and regulations.

c. *“Time for compliance.”* In existing childcare centers a reasonable time shall be allowed for compliance with any part of this rule, commensurate with the magnitude of the expenditure and the disruption of services. When alternate protection is installed and accepted the center shall be considered as conforming for the purposes of these regulations.

d. *“Additions or structural alterations.”* Additions or structural alterations to existing facilities must have written approval from the state fire marshal, and working plans and specifications must be submitted for review and approval.

**5.502(2)** *“Exit details.”*

*a. “Number of exits.”* Each floor occupied by children shall have not less than two approved remote means of egress. Additional exits shall be determined by the number of occupants.

*b. “Basement exits.”* Where children are located below the floor of exit discharge (basement) at least one exit directly to the outside to ground level shall be provided. No center shall be located more than one story below the ground. Any stairway to the floor above shall be cut by a fire barrier containing a rated door of at least 20-minute fire protection or a minimum of 1¾-inch solid bonded wood core. They shall be equipped with a self-closing device and positive latch.

*c. “Types of exits.”* Exits shall be of the following types or combinations thereof as defined by the National Fire Protection Association. At least two exits of the below types, remote from each other, shall be provided for every story or section of the building. At least one exit in every story or section shall be of type 2, 3, 4, 5, or 6 as listed below. Exterior fire escape stairs, minimum of 44 inches in width, may be accepted as a second means of exit.

- (1) Horizontal exits.
- (2) Doors leading directly outside the buildings (without stairs).
- (3) Ramps.
- (4) Stairways, or outside stairs.
- (5) Seven-foot spiral slides. Approved only where installed prior to effective date of these regulations.
- (6) Smoke towers.

*d. “Direct exits.”* At least one required exit from each floor shall lead directly or through an enclosed corridor, to the outside. A second or third required exit, where a more direct exit is impractical, may lead to a first floor lobby having ample and direct exit to the outside.

*e. “Exit doors shall not be locked.”* Exit doors shall not be locked against egress by bolt, key locks, hooks or padlocks. A latch type lock is permissible that locks against the outside entrance.

**5.502(3)** *“Doors.”*

a. *“Size.”* Each door in a means of egress shall not be less than 30 inches wide, 6 feet in height and reasonably covering the opening. If a door has a latch and is used by more than 50 people it shall be equipped with panic hardware.

b. *“Closet doors.”* Every closet door latch shall be such that children can open the door from the inside of the closet.

c. *“Emergency unlocking.”* Every door lock, except exit discharge, shall be designed to permit opening of the locked door from the outside in an emergency, and the opening device shall be readily accessible to the staff.

d. *“Doors protecting vertical openings.”* The doorway between the floor of exit discharge and any floor below shall be equipped with a self-closing labeled door of at least a 20-minute fire protection rating or a 1¾-inch solid bonded wood core door.

**5.502(4)** *“Interior finish.”* Interior finish in exits in child occupied spaces in the center shall be Class A in new centers and A or B in existing centers. See Table No. 5-C following 5.105(100).

**5.502(5)** *“Detection and extinguishing systems when needed.”* Detection and extinguishing systems shall comply to the following chart in regard to construction and number of stories.

a. *“Chart for detection and extinguishing systems—when needed.”*

Type of Construction	Number of Children	Number of stories				
		1	2	3	4	5 or more
Fire Resistive and Protected Noncombustible	7-15	4	2	2	2	2
	16 or more	3	2	2	2	2
Protected Wood Frame and Protected Ordinary	7-15	4	2	1	NP	NP
	16 or more	3	2	1	NP	NP
Heavy Timber	7-15	4	2	1	NP	NP
	16 or more	3	2	1	NP	NP
Unprotected Noncombustible	7-15	4	2	1	NP	NP
	16 or more	3	2	1	NP	NP
Unprotected Wood Frame and Unprotected Ordinary	7-15	4	NP	NP	NP	NP
	16 or more	2	NP	NP	NP	NP

Note 1—Sprinkler; Note 2—Complete Automatic Detection; Note 3—Manual Alarm; Note 4—Single Station Smoke Detection; Note 5—NP Not Permitted

“EXCEPTION:” Buildings where classrooms have a direct exit door to the outside are not required to have complete automatic detection. A manual alarm or single-station detector will be satisfactory.

b. *“Approved sprinkler system.”* Any required automatic sprinkler system shall be in accordance with approved standards for systems in light hazard occupancies, and shall be electrically interconnected with the manual fire alarm system. The main sprinkler control valve shall be electrically supervised so that at least a local alarm will sound when the valve is closed.

c. *“Complete automatic detection system.”* Requirements for automatic fire detection systems shall meet the following standards.

- (1) Automatically detect a fire.
- (2) Sound alarm signal throughout the premises for evacuation purposes.
- (3) Provide assurance the system is in operating condition by electric supervision.
- (4) Underwriters Laboratories listed equipment to be used throughout the system.
- (5) Provide a manual test switch and tested monthly and noted for inspection purposes.
- (6) Installation of equipment and wiring shall be in a neat and workmanship like manner.
- (7) To include smoke, or products of combustion, detection devices when required by the fire marshal.
- (8) Properly located manual alarm stations.
- (9) Where fire detection systems are installed to meet the requirements of this regulation, they shall be approved electrically supervised systems. Detectors shall be approved combined rate of rise and fixed temperature type detectors 135°F, or smoke, or products of combustion type, and properly installed. In spaces where high temperature is normal, devices having a higher operating point may be used. Operation of a detection or alarm shall cause an alarm which is audible throughout the center. In existing centers where “fixed temperature only detectors” are already installed, they need not be replaced until such time that a new head needs to be installed. Detector units shall be installed in every room and concealed area of the child care center.

d. *“Single station detectors.”* Every single station detector of product of combustion other than heat shall be mounted on the ceiling or wall at a point of central location in the corridor or in child occupied areas. No detector shall be mounted less than 12 inches of ceiling level. Care shall be exercised to ensure the installation will not interfere with the operating characteristics of the detectors. When activated the detector shall provide an alarm. The detectors shall be tested monthly by the operator of the center or the operator’s designee and a record kept for inspection purposes.

e. *“Manual fire alarms.”*

(1) *“Installation.”* Manual fire alarm stations shall be provided on each floor and so located that the alarm station is not more than 75 feet from any area within the building. Horns or bells that provide a distinctive sound different from any other bell system shall be provided that will give audible warning to all occupants of the building in case of a fire or other emergency. A test system shall be provided for the purpose of conducting fire drills and tests of the alarm system.

(2) *“Approval of systems.”* Factory Mutual or Underwriters Laboratories, Inc., equipment and component parts shall be used in the installation of the fire alarm system. The electrical energy for the fire alarm system shall be on a separate circuit and shall be taken off the utility service to the center building ahead of the entrance disconnect.

(3) *“Extension of system.”* Whenever the fire marshal determines it advisable, it may be required that the fire alarm system be extended or designed to provide automatic fire detection devices in unsupervised areas, boiler rooms, storerooms and shop areas.

(4) *“Mounting.”* Each station shall be securely mounted. The bottom of each station will be not less than 4½ feet and not more than 6 feet above the floor level.

(5) *“Location.”* Manual fire alarm boxes shall be distributed throughout the protected area so that they are unobstructed, readily accessible, and located in the normal path of exit from the area.

**5.502(6)** *“Fire drills.”* Fire drills shall be held at least once a month and recorded. A fire emergency plan shall be written and posted in a conspicuous place.

**5.502(7)** *“Extinguishers.”* Each child occupied area shall be protected by a Class “A” fire extinguisher 2A rating, and in areas where heating or cooking units are used there shall be a “5” lb. BC extinguisher 2B rating.

**5.502(8)** *“Heating equipment.”*

*a. “Location.”* No furnace, space heater or portable heater shall be located in child occupied areas. EXCEPTION: Approved suspended unit heaters may be used, except in means of egress and sleeping areas, provided such heaters are located high enough to be out of the reach of persons using the area and provided they are equipped with the proper safety devices. Fireplaces may be used providing the fireplace is equipped with a heat tempered glass fireplace enclosure guaranteed against breakage up to a temperature of 650°F. If, in the opinion of the fire marshal, special hazards are present, a lock on the enclosure and other safety precautions may be required.

*b. “Combustion air.”* If solid partitions are used to provide the separation of the furnace room from other areas, provision for outside air shall be made to assure adequate combustion for the heating unit.

**5.502(9)** *“Floor coverings.”* For carpet see Table No. 5-D following 5.105(100). Wall hangings and window treatments shall be flame-retardant or rendered flame-retardant.

**5.502(10)** *“Maintenance.”*

*a. “Regular and proper maintenance.”* Regular and proper maintenance of electric service, heating plants, alarm systems, sprinkler systems, fire doors and exit facilities shall be accomplished.

*b. “Storerooms.”* Storerooms shall be maintained in a neat and proper manner at all times.

*c. “Excessive storage.”* Excessive storage of combustible materials such as paper cartons, magazines, paints, sprays, old clothing, furniture and similar materials shall be prohibited at all times.

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**661—5.503 to 5.549** Reserved.



HEALTH CARE FACILITIES  
**Residential Care Facility**

**661—5.550(100) to 5.552(100)** Rescinded IAB 4/2/03, effective 3/11/03.

**661—5.553 to 5.599** Reserved.

**Nursing Facilities**

**661—5.600(100) to 5.602(100)** Rescinded IAB 4/2/03, effective 3/11/03.

**661—5.603 to 5.606** Reserved.

RESIDENTIAL FACILITIES

**661—5.607(100) Scope.** Group home facilities include those facilities for persons with drug and alcohol rehabilitation, halfway houses, juvenile detention, birthing centers or any residential-type facility requiring fire marshal approval or inspection for licensing or occupancy but not licensed under Iowa Code chapter 135C.

**5.607(1) Application.** These rules shall apply to those facilities, classified as group homes in rule 5.607(100), which provide sleeping accommodations for six or more persons, including buildings in which separate sleeping rooms are provided on either a transient or permanent basis, with or without meals but without separate cooking facilities for individual occupants.

**5.607(2)** The requirements of these rules are applicable to new buildings, and to existing or modified buildings for use as described in 5.607(100).

NOTE: These rules are minimum requirements. There may be more restrictive regulations locally.

**5.607(3) Equivalency concepts.** Nothing in these rules is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety to those prescribed by these rules, providing technical documentation is submitted to the authority having jurisdiction to demonstrate equivalency and the system, method, or device is approved for the intended purpose.

**5.607(4)** The specific requirements of these rules may be modified by the authority having jurisdiction to allow alternative arrangements that will secure as nearly equivalent safety to life from fire as practical, but in no case shall the modification afford less safety to life than, in the judgment of the authority having jurisdiction, that which would be provided with compliance with the corresponding provisions contained in the rules.

**5.607(5)** Buildings with alternative fire protection features accepted by the authority having jurisdiction shall be considered as conforming with the rules.

**5.607(6)** In the case of building with mixed occupancies where two or more classes of occupancy occur in the same building or structure and are so intermingled that separate safeguards are impractical, means of egress facilities, construction, protection, and other safeguards shall comply with the most restrictive life safety requirements of the occupancies involved.

**5.607(7) Definitions.**

*“Hazardous area.”* A hazardous area is any space that contains storage or other activity having fuel conditions exceeding that of a one- or two-family dwelling and possessing the potential for a fully involved fire. Hazardous areas include, but are not limited to, areas for cartoned storage, food or household maintenance items in wholesale or institutional-type quantities and concentrations, or massed storage of residents’ belongings. Areas containing approved, properly installed and maintained furnaces and heating equipment, and furnace rooms, cooking, and laundry facilities are not classed as hazardous areas on the basis of such equipment.

**5.607(8)** Minimum construction requirements. No special requirements.

**5.607(9)** Occupant load. Six or more persons, 200 square feet gross floor area per person. Exit doors shall swing with egress (outward) when the occupant load is over 50 persons.

**5.607(10)** Interior finish. All interior finish in enclosed vertical exitways shall be Class A. See Table No. 5-C following 661—5.105(100).

EXCEPTION 1: In buildings protected throughout by a complete automatic sprinkler system in accordance with National Fire Protection Association Standard No. 13D, 1984 edition, interior finish shall be at least Class C throughout.

EXCEPTION 2: The state fire marshal may accept nonapproved finish materials applied directly over noncombustible surfaces in existing buildings only.

### **661—5.608(100) Means of escape.**

**5.608(1)** Number and means of escape. Every sleeping room shall have access to a primary means of escape so located as to provide a safe path of travel to the outside of the building without traversing any corridor or space exposed to an unprotected vertical opening. Where the sleeping room is above or below the level of exit discharge, the primary means shall be an enclosed interior stair, an exterior stair, a horizontal exit, or an existing fire escape stair.

**5.608(2)** The second means of escape or alternate protection shall be one of the following:

a. A door, stairway, passage or hall providing a way, independent of and remote from the primary means of escape, of unobstructed travel to the outside of the dwelling at street or ground level.

b. A passage through adjacent nonlockable spaces independent of and remote from the primary means of escape to any approved means of escape.

c. The bedroom or living area shall be separated from all other parts of the living unit by construction having a fire-resistance rating of at least 20 minutes and shall be equipped with a door that will resist passage of fire for at least 20 minutes, and is designed and installed to minimize smoke leakage.

EXCEPTION 1: If the bedroom has a door leading directly outside the building with access to grade or to a stairway that meets the requirements for exterior stairs in 5.608(1), that exit shall be considered as meeting all of the exit requirements for that sleeping room.

EXCEPTION 2: If the dwelling unit is protected throughout by an approved automatic sprinkler system in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems, or NFPA 13D, Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Mobile Homes, as applicable.

EXCEPTION 3: Existing approved means of escape may be continued in use.

**5.608(3)** Interior stairways shall be enclosed with 20-minute fire barriers with all openings protected with smoke-actuated automatic or self-closing doors having a fire resistance comparable to that required for the enclosure.

EXCEPTION 1: Stairs connecting two levels only may be open to other than the street floor, if equipped with automatic smoke detectors on each floor interconnected as per National Fire Protection Association Standard No. 74, 1985 edition.

EXCEPTION 2: Stairways may be unprotected in accordance with the exception to 5.609(1).

**5.608(4)** Winders or circular stairs shall not be used in new construction. Existing winders or circular stairs may be continued in use.

**5.608(5)** No door or path of travel to a means of egress shall be less than 30 inches (72 cm) wide, clear width (32-inch door).

EXCEPTION: Bathroom doors may be 24 inches (61cm) wide.

**5.608(6)** Every closet door latch shall be designed to be readily opened from the inside in case of emergency.

**5.608(7)** Every bathroom door shall be designed to permit the opening of the locked door from the outside in an emergency.

**5.608(8)** No door in any means of egress shall be locked against egress when the building is occupied.

EXCEPTION: When additional fire and life safety features have been approved by the state fire marshal, special door locking arrangements may be permitted by the state fire marshal. In buildings in which doors are locked, provisions shall be made for the rapid removal of occupants by such reliable means as the remote controls of locks or by keying all locks to keys readily available to staff who are in constant attendance.

Written permission shall be obtained for any facility using this exception.

**5.608(9)** Separation of sleeping rooms. All sleeping rooms shall be separated from escape route corridors by walls and doors that are smoke resistant. There shall be no louvers or operable transoms or other air passages penetrating the wall except properly installed heating and utility installations other than transfer grilles. Transfer grilles are prohibited. Doors shall be provided with latches or other mechanisms suitable for keeping the doors closed. No doors shall be arranged so as to prevent the occupant from closing the doors. All sleeping rooms shall have a window for ventilation of not less than 20 inches wide, 24 inches high, and not less than 5.7 square feet area nor more than 44 inches above the floor.

#### **661—5.609(100) Protection of vertical openings.**

**5.609(1)** Vertical openings shall be protected so that no primary exit route is exposed to an unprotected vertical opening. The vertical opening is considered protected if the opening is cut off and enclosed in a manner that provides a smoke and fire resisting capability of not less than 20 minutes. Any door or openings shall have equivalent fire and smoke resisting capability to the enclosure and be automatic-closing on detection of smoke or be self-closing and kept closed.

EXCEPTION: In buildings three stories or less in height, protected throughout by a complete approved automatic sprinkler system in accordance with National Fire Protection Standard No. 13, 1987 edition, or No. 13D, 1984 edition, unprotected vertical openings are permitted. However, in such case, there shall still remain a primary means of exit from each sleeping area that does not require occupants to pass through a portion of a lower floor, unless that route is separated from all spaces on that floor by construction having a 20-minute fire-resistance rating.

**5.609(2)** Exterior stairs shall be reasonably protected against blockage by a fire that would simultaneously expose both the interior and exterior means of escape.

#### **661—5.610(100) Detection, alarm, and communications.**

**5.610(1) General.** Group home facilities shall be provided with a fire alarm system in accordance with National Fire Protection Association Standard No. 74, 1984 edition.

EXCEPTION 1: Buildings shall have a smoke detection system meeting or exceeding the requirements of National Fire Protection Association Standard No. 74, 1984 edition or Iowa Code section 100.18 and that detection system shall include at least one manual fire alarm station per floor arranged to initiate the smoke detection alarm.

EXCEPTION 2: Buildings protected throughout by a complete approved automatic sprinkler alarm system in accordance with National Fire Protection Association Standard No. 13, 1987 edition, or No. 13D, 1984 edition.

**5.610(2) Initiation.** Initiation of the required fire alarm system shall be by manual means in accordance with National Fire Protection Association Standard No. 74, 1984 edition.

**5.610(3) Notification.** Occupant notification shall be provided automatically, without delay, by internal audible alarm in accordance with National Fire Protection Association Standard No. 74, 1984 edition. Presignal systems are prohibited.

**5.610(4) Detection.** Approved smoke detectors meeting the requirements of National Fire Protection Association Standard No. 74, 1984 edition, shall be provided.

**5.610(5) Emergency lighting.** Approved battery-operated emergency lighting is required for each occupied floor illuminating exits and routes to them.

**661—5.611(100) Hazardous areas.** Any hazardous area shall be protected in accordance with the following:

**5.611(1)** If a hazardous area is on the same floor as, and is in or abuts, a primary means of escape or a sleeping room, the hazardous area shall be protected by either:

*a.* An enclosure with a fire-resistance rating of at least one hour with a self-closing fire door having a fire-protection rating of at least 20 minutes as per National Fire Protection Association Standard No. 80, 1986 edition, or the equivalent.

*b.* Automatic sprinkler protection, in accordance with No. 13D, 1984 edition, of the hazardous area and a separation that will resist the passage of smoke between the hazardous area and the exposed sleeping area or primary exit route. Any doors in such separation shall be self-closing or automatic-closing on smoke detection.

**5.611(2)** Other hazardous areas shall be protected by either:

*a.* An enclosure with a fire-resistance rating of at least 20 minutes with a self-closing or smoke detector-operated automatic-closing door at least equivalent to a 1¾-inch (4.4cm) solid bonded wood core construction, or

*b.* Automatic sprinkler protection, in accordance with National Fire Protection Association Standard No. 13, 1987 edition, or No. 13D, 1984 edition, of the hazardous area regardless of enclosure.

**661—5.612(100) Building service.**

**5.612(1)** The electrical wiring shall meet the requirements of the National Electrical Code, 1987 edition, as published by the National Fire Protection Association. Extension cords shall not be used in lieu of permanent wiring.

EXCEPTION: Existing buildings as classified in rule 5.607(100) may retain their electrical systems if approved by the authority having jurisdiction.

**5.612(2)** An approved Class IIA fire extinguisher shall be mounted and accessible on each occupied floor.

**661—5.613(100) Evacuation plan and fire drills.**

**5.613(1)** The administration of every facility shall have in effect and available to all supervisory personnel written copies of a plan for the protection of all persons in the event of fire and for their evacuation to areas of refuge and from the building when necessary. The plan shall include special staff actions including fire protection procedures needed to ensure the safety of any resident.

All employees shall be periodically instructed and kept informed in respect to their duties and responsibilities under the plan. Instruction shall be reviewed by the staff at least annually. A copy of the plan shall be readily available at all times within the facility.

**5.613(2)** Fire exit drills shall be conducted at least 12 times per year, 4 times a year on each shift with 3 drills during the first month of operation. The drills may be announced in advance to the residents. The drills shall involve the actual evacuation of all residents to a selected assembly point and shall provide residents with experience in exiting through all exits required by the rules. Actual evacuation may not be required where security may be a problem.

Rules 5.607(100) to 5.613(100) are intended to implement Iowa Code section 135G.4.

**661—5.614 to 5.619** Reserved.

**661—5.620(100,135C) General requirements for small group homes (specialized licensed facilities) licensed pursuant to Iowa Code section 135C.2.**

**5.620(1) Scope.** This rule applies to specialized licensed facilities licensed under the provisions of Iowa Code section 135C.2 having three to five beds and serving persons with mental retardation, chronic mental illness, developmental disabilities, or brain injuries.

**5.620(2) Exits.**

*a.* There shall be a minimum of two approved exits from the main level of the home and from each level with resident sleeping rooms.

*b.* Interior and exterior stairways shall have a minimum clear width of not less than 30 inches.

**5.620(3) Windows.** Every resident sleeping room shall have an outside window or outside door arranged and located to permit the venting of products of combustion and access to fresh air in the event of an emergency.

*a.* In new construction, windows shall have a minimum net clear openable area of 5.7 square feet, minimum net clear openable height of 24 inches, minimum net clear openable width of 20 inches and the finished sill height shall be not more than 44 inches above the floor.

*b.* In existing construction the finished sill height shall be not more than 44 inches above the floor or may be accessible from a platform not more than 44 inches below the window sill.

**5.620(4) Interior finish.** Interior finish in exit shall be Class A, B or C. See Table No. 5-C, following 661—5.105(100).

**5.620(5) Doors.** Doors to resident sleeping rooms shall be a minimum of 1 3/8-inch solid core wood or equivalent.

**5.620(6) Vertical separations.** Basement stairs must be enclosed with one-hour rated partitions and 1¾-inch solid core wood doors equipped with self-closers. These doors must be kept closed unless held open by an approved electromagnetic holder, actuated by an approved smoke detection device located at the top of the stairwell and interconnected with the alarm system.

**5.620(7) Fire detection, fire alarms and sprinklers.**

*a.* The home shall have smoke detection installed on each occupied floor including basements in accordance with National Fire Protection Association Standard No. 74. Smoke detectors shall be interconnected so that activation of any detector will sound an audible alarm throughout. The system shall be tested by a competent person at least semiannually with date of test and name noted.

*b.* Homes in which exiting is restricted by special door locking arrangements that prevent residents from free egress shall be equipped with sprinkler systems meeting the requirements of National Fire Protection Association Standard Number 13D, 1996 edition.

EXCEPTION: Homes in this classification that were licensed prior to November 1, 1999, shall comply with this requirement within a reasonable period of time and, in any event, not later than November 1, 2001.

**5.620(8) Fire extinguishers.**

*a.* Approved fire extinguishers shall be provided on each floor, so located that a person will not have to travel more than 75 feet from any point to reach the nearest extinguisher. An additional extinguisher shall be provided in, or adjacent to, each kitchen or basement storage room.

*b.* Type and number of portable fire extinguishers shall be determined by the fire marshal.

**5.620(9) Mechanical, electrical and building service equipment.**

*a.* Air conditioning, ventilating, heating, cooking and other service equipment shall be in accordance with state regulations governing same, or nationally recognized standards such as National Fire Protection Association standards governing the type of equipment, and shall be installed in accordance with the manufacturer's specifications. All hazardous areas normally found in one- and two-family dwellings, such as laundry, kitchen, heating units and closets need not be separated with walls if all equipment is installed in accordance with the manufacturer's listed instructions.

*b.* Portable comfort heating devices are prohibited.

**5.620(10) Attendants, evacuation plan.**

a. Every home shall have at least one staff person on the premises at all times while residents are present. This staff person shall be at least 18 years of age and capable of performing the required duties of evacuation. No person other than the management or a person under management control shall be considered as an attendant.

b. Every facility shall formulate a plan for the protection of all persons in the event of fire and for their evacuation to areas of refuge and from the building when necessary. All employees shall be instructed and kept informed respecting their duties under the plan. This plan is to be posted where all employees may readily study it. Fire drills shall be held at least once a month. Records must be kept available for inspection.

**5.620(11) Smoking.**

a. There shall be no smoking in resident sleeping areas and smoking and no smoking policies shall be strictly adhered to.

b. Ashtrays shall be constructed of noncombustible material with self-closing tops and shall be provided in all areas where smoking is permitted.

**5.620(12) Exit illumination.** Approved rechargeable battery-powered emergency lighting shall be installed to provide automatic exit illumination in the event of failure of the normal lighting system.

**5.620(13) Occupancy restrictions.**

a. Occupancies not under the control of, or not necessary to, the administration of residential care facilities are prohibited therein with the exception of the residence of the owner or manager.

b. Nonambulatory residents shall be housed only on accessible floors which have direct access to grade which does not involve stairs or elevators.

**5.620(14) Maintenance.**

a. All fire and life safety equipment or devices shall be regularly and properly maintained in an operable condition at all times in accordance with nationally recognized standards. This includes fire extinguishing equipment, alarm systems, doors and their appurtenances, cords and switches, heating and ventilating equipment, sprinkler systems and exit facilities.

b. Storerooms shall be maintained in a neat and proper manner at all times.

c. Excessive storage of combustible materials such as papers, cartons, magazines, paints, sprays, old clothing, furniture and similar materials shall be prohibited at all times.

This rule is intended to implement Iowa Code section 135C.2(5) "b."

**661—5.621 to 5.624** Reserved.

**661—5.625(100,231B) Elder group homes.** This rule applies to elder group homes certified by the Iowa department of elder affairs.

**5.625(1) Definitions.** The following definitions apply to rule 661—5.625(100,231B):

"Elder" means a person 60 years of age or older.

"Elder group home" means a single family residence that is the residence of a person who is providing room, board, and personal care to three to five elders who are not related to the person providing the service within the third degree of consanguinity or affinity and which is certified as an elder group home by the Iowa department of elder affairs.

**5.625(2) Exits.** There shall be a minimum of two approved exits from the main level of the home and from each level with resident sleeping rooms. Interior and exterior exit stairways shall have a minimum clear width of not less than 30 inches.

**5.625(3) Windows.** Each resident sleeping room shall have an outside window or outside door arranged and located to provide ventilation, access to fresh air, and an emergency escape route. New or replacement windows shall have a minimum net clear openable area of 5.7 square feet, minimum net clear openable height of 24 inches, minimum net clear openable width of 20 inches, and the finished sill height shall not be more than 44 inches above the floor.

**5.625(4) Interior finish.** Interior finish in resident occupied areas shall be Class A or B in accordance with Table 5-C, 661 IAC 5.105(100).

**5.625(5) Doors.** Door to resident sleeping rooms shall be a minimum of one and three-eighths inches solid core wood or equivalent.

**5.625(6) Fire detection.** An elder group home shall have smoke detectors installed on each floor, including the basement, and in each sleeping room, in accordance with National Fire Protection Association # 74, Standard for Household Fire Warning Equipment, 1989 edition, and 661 IAC 5.807(100). Smoke detectors shall be interconnected so that activation of any detector will activate detectors throughout the home.

**5.625(7) Fire extinguishers.** Fire extinguishers shall be provided on each floor and shall be located so that a person will not have to travel any more than 75 feet from any point in the home to reach the nearest extinguisher. An additional extinguisher shall be provided in, or adjacent to, the kitchen. Type, distribution, inspection, maintenance, and recharging of extinguishers shall conform to National Fire Protection Association # 10, Standard for Portable Fire Extinguishers, 1990 edition.

**5.625(8) Smoking.** There shall be no smoking in resident sleeping rooms. Smoking may be permitted in designated areas only. If an indoor area within an elder group home is designated as a smoking area, that area shall be equipped with ashtrays constructed of noncombustible material and with self-closing tops.

**5.625(9) Exit illumination.** Approved rechargeable battery-powered emergency lighting shall be installed to provide automatic exit illumination in the event of failure of the normal lighting system.

**5.625(10) Maintenance.** All fire and life safety equipment or devices shall be U.L. or independent testing laboratory approved, installed according to manufacturer specifications, and regularly and properly maintained at all times in accordance with nationally recognized standards. This includes, but is not limited to, fire extinguishing equipment, alarm systems, doors and their appurtenances, and exit facilities. Flammable and combustible materials shall be properly stored in original, properly labeled containers or approved safety containers. Storerooms shall be maintained in a neat and proper manner at all times. Excessive storage of combustible materials is not permitted.

**5.625(11) Equipment.** Electrical, heating, and ventilating equipment shall be installed and maintained in accordance with manufacturer's instructions and nationally recognized standards. Portable space heaters are not permitted.

**5.625(12) Emergency procedures.** Every home shall formulate a plan for the protection of occupants in the event of a fire or other emergency. The plan shall take into consideration areas of refuge within the building as well as evacuation from it. The written plan must be provided to each resident and explained to them at the time they move into the facility and at least annually thereafter.

**5.625(13) Compressed gases.** If oxygen or other compressed gases are required by residents for respiratory purposes, the applicable standards for use, containers, equipment, maintenance and storage of compressed gases, as set forth in National Fire Protection Association # 99, 1993 edition, shall be adhered to.

**5.625(14) Basements.** Interior basement stairways, if enclosed, must have walls and ceilings constructed of five-eighths inch gypsum board or material providing equivalent fire protection. Basements must be separated from the first floor by a self-closing one and three-eighths inch solid wood core door or equivalent. If a basement is used by residents, it must have a door leading to the outside or an operational window having a minimum net clear openable area of 5.7 square feet, minimum net clear openable height of 24 inches, minimum net clear openable width of 20 inches, and the finished sill height shall not be more than 44 inches above the floor.

**5.625(15) Construction.** Unprotected wood frame structures of more than two stories in height, excluding basement, shall not be permitted for use as elder group homes.

EXCEPTION: Unprotected wood frame structures protected throughout by an approved automatic sprinkler system may be used as elder group homes.

This rule is intended to implement Iowa Code chapter 100 and section 231B.2.

**661—5.626(231C) Assisted living housing.**

**5.626(1) Definitions.** The following definitions apply to rule 661—5.626(231C):

“*Assisted living*” means provisions of housing with services which may include but are not limited to health-related care, personal care and assistance with instrumental activities of daily living to six or more tenants that are certified by the department of elder affairs or voluntarily accredited.

“*Existing assisted living facility*” is an assisted living facility operating on or before June 30, 1997, or which was in use on or before June 30, 1997, in another category or categories of state-licensed, long-term residential care facilities and was converted after that date to use as an assisted living facility.

“*New assisted living facility*” is an assisted living facility which begins operation on or after July 1, 1997, and was not in operation prior to July 1, 1997, in any category of state-licensed, long-term care facility.

“*NFPA*” means the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269. References to the form “NFPA xx,” where “xx” is a number, refer to the NFPA standard or pamphlet of the corresponding number.

**5.626(2) New assisted living facilities.** The standard “NFPA 101, Chapter 22, New Residential Board and Care Occupancies,” 1994 edition, as published by the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269, is hereby adopted by reference as the rules governing new assisted living facilities, with the following deletion:

Delete the definition of “Residential board and care occupancy” from Section 22-1.3.

**5.626(3) Existing assisted living facilities.** The standard “NFPA 101, Chapter 23, Existing Residential Board and Care Occupancies,” 1994 edition, as published by the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269, is hereby adopted by reference as the rules governing assisted living facilities in existing apartments and in those buildings that are converted from other classifications of state-licensed, long-term residential care facilities with the following deletion:

Delete the definition of “Residential board and care occupancy” from Section 23-1.3.

**5.626(4) Alternative requirements.** In lieu of complying with the requirements established in subrule 5.626(2) or 5.626(3), assisted living facilities may alternatively comply with the requirements established in this subrule. Any assisted living facility certified or seeking certification for reimbursement under the federal Medicare and Medicaid programs shall comply with the provisions of this subrule as of September 11, 2003.

*a.* An assisted living facility that begins operation on or after September 11, 2003, or that received plan approval for initial construction or for its most recent major renovation or remodeling project on or after March 11, 2003, may comply with the requirements established in NFPA 101, Life Safety Code, 2000 edition, Chapter 32, in lieu of compliance with the requirements established in subrule 5.626(2).

*b.* An assisted living facility that begins operation prior to September 11, 2003, or that received plan approval for initial construction or for its most recent major renovation or remodeling project prior to March 11, 2003, may comply with the requirements established in NFPA 101, Life Safety Code, 2000 edition, Chapter 33, in lieu of compliance with the requirements established in subrule 5.626(3).

This rule is intended to implement Iowa Code chapter 231C.



**661—5.627 to 5.649** Reserved.

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## FIRE SAFETY RULES FOR SCHOOL AND COLLEGE BUILDINGS

**661—5.650(100) General requirements and definitions.**

**5.650(1)** Every building or structure designed for school or college occupancy shall be provided with exits sufficient to permit the prompt escape of students and teachers in case of fire or other emergency. The design of exits and other safeguards shall be such that reliance for safety to life in case of fire or other emergencies will not depend solely on any single safeguard; additional safeguards shall be provided for life safety in case any single safeguard is ineffective due to some human or mechanical failure.

**5.650(2)** Every building or structure shall be so constructed, arranged, equipped, maintained and operated as to avoid undue danger to lives and safety of its occupants from fire, smoke, fumes or resulting panic during the period of time reasonably necessary for escape from the building or structure in case of fire or other emergency.

**5.650(3)** Exits shall be provided of kinds, numbers, location and capacity appropriate to the individual building or structure, with due regard to the character of the occupancy, the number of persons exposed, the fire protection available and the height and type of construction of the building or structure, to afford all occupants convenient facilities for escape.

**5.650(4)** Fire escapes, where specified, shall be installed and the design and use of materials shall be in accordance with subrule 5.101(4).

**5.650(5)** All changes or alterations to be made in any school or college building shall conform with the applicable provisions of rules 661—5.650(100) through 661—5.799 and before any construction of new or additional installation is undertaken, drawings and specifications thereof made to scale shall be submitted to the state fire marshal for approval. Within a reasonable time (normally ten working days) after receipt of the drawings and specifications, the state fire marshal shall cause the same to be examined and if they conform as submitted or modified with the requirements of this division, the state fire marshal shall signify approval of the application either by endorsement thereon or by attachment thereto. If the drawings and specifications do not conform with applicable requirements of this division, the state fire marshal shall notify the applicant accordingly.

**5.650(6)** Each school building of two or more classrooms, not having a principal or superintendent on duty, shall have a teacher appointed by the school officials to supervise school fire drills and be in charge in event of fire or other emergency. This subrule shall not apply to college buildings.

**5.650(7)** Compliance with these rules shall not be construed as eliminating or reducing the necessity for other provisions for fire safety of persons using a school or college building under normal occupancy conditions nor shall any provision of these rules be construed as requiring or permitting any conditions that may be hazardous under normal occupancy conditions.

\*Effective date of 661—5.620(100,135C), introductory paragraph, and subrule 5.620(1) delayed 70 days by the Administrative Rules Review Committee at its meeting held February 8, 1999.

**5.650(8)** Drills. Each school and college shall conduct fire and tornado drills as required by Iowa Code section 100.31. Each school or college shall conduct four fire and four tornado drills yearly while school is in session, with two drills of each type between July 1 and December 31 and two drills of each type between January 1 and June 30. All drills shall be documented and such documentation shall be made available to the state fire marshal or other authorized person conducting a fire safety inspection of the school or college.

**5.650(9)** Definitions. The following definitions apply to rules 661—5.650(100) through 661—5.799.

*Approved.* Approved is defined as being acceptable to the state fire marshal. Any equipment or device which bears the seal of the Underwriters Laboratories, Inc., Factory Mutual Laboratory, American Standards Association, or the American Gas Association shall be accepted as approved.

*Basement.* A usable or unused floor space not meeting the definition of a story or first story.

*Classroom.* Any room originally designed, or later suitably adapted, to accommodate some form of group instruction on a day-by-day basis, excluding such areas as auditoriums, gymnasiums, lunchrooms, libraries, multipurpose rooms, study halls and similar areas. Storage and other service areas opening into and serving as an adjunct to a particular classroom shall be considered as part of that classroom area.

*College building.* For the purpose of these rules, college buildings are those used for instruction of levels higher than grade 12 by six or more persons for four or more hours per day or more than 12 hours per week and which are not school buildings.

*Elementary school.* An elementary school shall be those buildings that include prekindergarten through sixth grade.

*Existing.* Existing shall mean any school or college building or addition in use prior to February 1, 2000, or for which plans have received approval from the state fire marshal prior to February 1, 2000, other than buildings which received approval prior to February 1, 2000, to proceed with construction using the Life Safety Code with amendments as the basis for fire safety.

*Exit.* An exit is a way to get from the interior of a building or structure to the open air outside at the ground level. It may comprise vertical and horizontal means of travel such as doorways, stairways, ramps, corridors, passageways and fire escapes. An exit begins at any doorway or other point from which occupants may proceed to the exterior of the building or structure with reasonable safety under emergency conditions.

*Fire alarm system.* A fire alarm system shall be an electrically energized system approved by the state fire marshal, using component parts approved by the Underwriters Laboratories, Inc., and providing facilities of a type to warn the occupants of an existence of fire so that they may escape or to facilitate the orderly conduct of fire exit drills.

*First story.* The lowest story in a building which qualifies as a story, as defined herein, except that a floor level in a building having only one floor level shall be classified as a first story, provided such floor level is not more than 4 feet below grade for more than 50 percent of the total perimeter, or not more than 8 feet below grade at any point.

*Interior finish.* See Table No. 5-C following 661—5.105(100).

*Level of exit discharge.* The level or levels with direct access to grade which do not involve the use of stairs or ramps. The level with the fewest steps shall be the level of exit discharge when no level exists directly to grade. In the event of a dispute, the state fire marshal shall determine which level is the level of exit discharge.

*New construction.* Those buildings for which plans receive approval from the state fire marshal on or after February 1, 2000, or for which approval was granted by the fire marshal prior to February 1, 2000, to proceed with construction using the Life Safety Code with amendments. New construction includes additions to, renovations of, and reconstruction of existing buildings.

*NFPA.* NFPA means the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269. Reference to NFPA standards, pamphlets, and appendices are to publications of the National Fire Protection Association.

*Portable classroom building.* A building designed and constructed so that it can be disassembled and transported to another location, or transported to another location without disassembling.

*School buildings.* For the purpose of these rules, school buildings are those used for gatherings of groups of six or more persons for more than 12 hours per week or 4 hours in any one day for the purpose of instruction prekindergarten through the twelfth grade. These occupancies are distinguished from other types of occupancies in that the same occupants are regularly present and are subject to discipline and control. School occupancies include: schools, academies, and kindergartens.

*Story.* That portion of a building included between the upper surface of any floor and the upper surface of the floor next above, except that the topmost story shall be that portion of a building included between the upper surface of the topmost floor and the ceiling or roof above. If the finished floor level directly above a usable or unused underfloor space is more than 6 feet above grade for more than 50 percent of the total perimeter or is more than 12 feet above grade at any point, such usable or unused underfloor space shall be considered as a story.

#### EXISTING SCHOOL BUILDINGS

**661—5.651(100) Application.** Rules 661—5.651(100) to 661—5.667(100) apply to existing school buildings.

**661—5.652(100) Exits and occupancy load.**

**5.652(1)** The occupancy load shall be determined on the following basis:

*a.* The square feet of floor space for persons in school buildings shall be one person for each 40 square feet of gross area.

*b.* In the case of individual classrooms in schools, there shall be 20 square feet of classroom space for each student.

*c.* In gymnasiums and auditoriums, the capacity for seating shall be on the basis of 6 square feet net per person.

**5.652(2)** Exits shall be provided of kinds, numbers, location and capacity appropriate to the individual building and as required in Table No. 5-A following rule 661—5.105(100).

**5.652(3)** Exits shall be so arranged and maintained as to provide free and unobstructed egress from all parts of every building or structure at all times when the building or structure is occupied. No locks or fasteners to prevent free escape from the inside of any building shall be installed.

**5.652(4)** Exits shall be clearly visible or routes to reach them shall be conspicuously indicated in such manner that every occupant of every educational building who is physically and mentally capable will readily know the direction of the escape from any point and each path of escape in its entirety shall be so arranged or marked that the way to a place of safety outside is unmistakable.

**5.652(5)** Where artificial illumination is needed, electric exit signs or directional indicators shall be installed and adequate lighting provided for all corridors and passageways.

**5.652(6)** Where additional outside stairs or fire escapes are required by law, they shall be 44 inches wide and shall extend to the ground. Platforms for outside stairs or fire escapes shall have a minimum dimension of 44 inches. Outside stairs and fire escapes shall be constructed in accordance with 661—5.101(4). Fire escapes shall not be permitted on new construction.

**5.652(7)** There shall be a minimum of two means of exit remote from each other from each floor of every school building. The traveled distance from any point to an exit shall not exceed 150 feet measured along the line of travel. In sprinklered buildings, the distance may be increased to 200 feet.

**5.652(8)** Every room with a capacity of 50 persons or over and having more than 1,000 square feet of floor area shall have at least two doorways as remote from each other as practicable. Such doorways shall provide access to separate exits but may open onto a common corridor leading to separate exits in opposite directions.

**5.652(9)** Each elementary classroom shall have a secondary avenue of escape. This may be a door leading directly outside the building, a window [see 5.655(100)], another door to an alternate corridor or a connecting door to a second room and thence to a secondary route of escape. In one-room classroom buildings the second exit shall be a door remote from the door used for normal entrance.

**5.652(10)** Rooms normally occupied by preschool, kindergarten or first grade pupils shall not be located above or below the level of exit discharge. Rooms normally occupied by second grade pupils shall not be located more than one story above the level of exit discharge.

#### **661—5.653(100) Corridors.**

**5.653(1)** Corridors used as means of access to exits, and corridors used for discharge from exits, shall provide a clearance of at least 6 feet in width, except in the case of buildings constructed prior to the effective date of this rule. Room doors or locker doors swinging into corridors shall not, at any point in the swing, reduce the clear effective width of the corridor to less than 6 feet, nor shall drinking fountains or other equipment, fixed or movable, be so placed as to obstruct the required minimum 6-foot width.

**5.653(2)** Open clothing storage.

*a.* Where clothes are hung exposed in exit corridors, they shall be separated by partitions of sheet metal or equivalent material. Partitions shall be placed at 6-foot intervals, be a minimum of 18 inches in depth, extend at least 1 foot above the coat hooks and within 8 inches of the floor.

*b.* Where open clothing is hung in exit corridors as described in paragraph “a,” an automatic fire detection system shall be installed in the corridor. Sprinkler systems may be installed in lieu of the automatic detection system.

**5.653(3)** Rescinded IAB 12/1/99, effective 2/1/00.

**5.653(4)** Except as permitted in 5.653(2), no combustible materials shall be stored in exit corridors.

**5.653(5)** The walls of corridors, used for exit facilities, shall be solid partitions of noncombustible finish material.

**5.653(6)** Where borrowed light panels of clear glass are used in exit corridors, the requirements of 5.667(100) shall apply, except that clear glass windows in doors and transoms may be permitted in existing buildings when nonhazardous activities are carried on in the classroom.

**5.653(7)** Any single corridor or combination of corridors having an unbroken length of 300 feet or more shall be divided into sections by smoke barriers consisting of smoke stop doors. Doors may be of ordinary solid wood type not less than 1¾-inch thick with clear wired glass panels. Such doors shall be of self-closing type and may be either single or double. They shall close the opening completely with only such clearance as is reasonably necessary for proper operation. Underwriters Laboratories, Inc., listed electromagnetic holders may be used to hold these doors open provided they are hooked into the fire alarm system and a smoke detector is located at a strategic point near the doors.

**5.653(8)** There shall be no dead end in any corridor or hall more than 20 feet beyond the exit.

#### **661—5.654(100) Doors.**

**5.654(1)** Building entrance and exit doors and the doors of all classrooms shall open outward.

**5.654(2)** Doors shall be provided for main exit facilities leading to a platform connecting with either outside stairs or fire escapes. Doors leading to outside stairways or fire escapes shall have a minimum width of 40 inches, except that on existing buildings where it is not practical to install a door of 40-inch width, a narrower door at least 30 inches in width may be installed.

**5.654(3)** The main exit and entrance doors and doors leading to fire escapes shall be equipped with panic-type latches that cannot be locked against the exit.

**5.654(4)** Doors protecting stairways and doors leading to fire escapes or outside stairs may have wire glass panes installed providing that the size of any single pane does not exceed 900 square inches.

**5.654(5)** Doors protecting vertical openings or fire doors installed where protection of hazardous rooms or areas are required shall be equipped with door closers and shall not be blocked open. Underwriters Laboratories, Inc., listed electromagnetic holders may be used to hold these doors open provided they are hooked into the fire alarm system and a smoke detector is located at a strategic point near the doors.

**5.654(6)** Classroom doors.

*a.* Classroom doors of not less than 30 inches in width may be used. Replacement doors must be a minimum of 1¾-inch solid core wood.

*b.* School buildings designed without doors to classrooms shall meet the requirements of rule 661—5.667(100).

**5.654(7)** Boiler-, furnace- or fuel-room doors, communicating to other building areas, shall be 1½-hour rated doors and frames, normally closed and hung to swing into the boiler room.

**5.654(8)** Doors to storage of combustibles off corridors shall be at least 1¾-inch solid core wood.

**5.654(9)** Doors from classrooms to corridors may have closeable louvers up to 24 inches above the floor. No other louvers or openable transoms shall be permitted in corridor partitions.

#### **661—5.655(100) Windows.**

**5.655(1)** Windows below or within 10 feet of an outside stairway or fire escape shall have panes of wire glass.

**5.655(2)** Emergency rescue or ventilation.

*a.* Every room or space used for classroom or other educational purposes or subject to normally scheduled student occupancy shall have at least one outside window for emergency rescue or ventilation. Such window shall be openable from the inside without the use of tools and provide a clear opening of not less than 20 inches in width, 24 inches in height and 5.7 square feet in area. The bottom of the opening shall be not more than 44 inches above the floor.

EXCEPTION 1: Buildings protected throughout by an approved automatic sprinkler system.

EXCEPTION 2: Rooms or spaces that have a door leading directly to the outside of the building.

EXCEPTION 3: Existing awning or hopper-type windows with a clear opening of 600 square inches may be continued in use.

EXCEPTION 4: Doors that allow travel between adjacent classrooms and, when used to travel from classroom to classroom, provide direct access to exits in both directions or direct access to an exit in one direction and to a separate smoke compartment that provides access to another exit in the other direction.

EXCEPTION 5: Buildings protected by an approved automatic fire detection system.

*b.* Reserved.

#### **661—5.656(100) Stairway enclosures and floor cutoffs.**

**5.656(1)** In buildings of more than one story, stairs shall be enclosed with protected noncombustible construction except those in accordance with 5.656(2). Doors shall be 1¾-inch solid wood construction, or better, with wire glass allowable.

**5.656(2)** In buildings of two stories with no basement, where such buildings are fire-resistive construction throughout, or fire-resistive first story and noncombustible or heavy timber second story, the stairs need not be enclosed, provided, (*a*) all exit-way finish is Class A (flame spread rating not exceeding 25), (*b*) no open storage of wardrobe, books, or furniture in exit ways or spaces common to them and (*c*) the stairs from the second floor lead directly to an outside door or vestibule leading to the outside of the building.

**5.656(3)** Rescinded IAB 12/1/99, effective 2/1/00.

**5.656(4)** Stairway enclosures or the protection of vertical openings shall be the equivalent of wood studding with gypsum lath and plaster on both sides. The doors shall be at least 1¾-inch solid core wood doors, with maximum 900 square inch glass panels allowable.

**5.656(5)** Stairways from boiler, furnace or fuel rooms, communicating to other building areas, shall be enclosed at top and bottom. The entire stair enclosure shall be noncombustible construction. The doors (other than to the boiler room) may be 1¾-inch solid wood with a maximum of 900 square inches of wired glass allowable.

**5.656(6)** Except as provided elsewhere in this section, interior stairways used as exits shall be enclosed. The construction of the enclosure shall be in accordance with the provisions of 5.656(1).

**5.656(7)** Cutoffs between floors for stairways not used as exit facilities shall use the same type of construction as provided in 5.656(1).

**661—5.657(100) Interior finishes.**

**5.657(1)** Interior finish shall be Class A in exit and Class A or B in access to exits. See Table No. 5-C following 661—5.105(100).

**5.657(2)** Whenever the fire marshal determines the fire hazard is great enough, Class A materials for room finishes shall be used in science laboratories, shop areas and such other areas as the fire marshal shall designate, in addition to those areas designated by 5.657(1).

**5.657(3)** Ceiling finishes not meeting the requirements of 5.657(1) may be corrected by the use of a fire-retardant treatment.

**661—5.658(100) Construction.**

**5.658(1)** Types of construction as defined in the National Fire Protection Association Pamphlet No. 220, Standard Types of Building Construction, 1961.

- a. Fire resistive.
- b. Heavy timber.
- c. Noncombustible.
- d. Ordinary.
- e. Wood frame.

**5.658(2)** Noncombustible, ordinary or wood frame construction may be modified by using materials giving one-hour or greater fire protection.

**5.658(3)** Types of construction permitted:

a. One-story buildings and one-story wings on multistory buildings may be any of the types designated in 5.658(1), or combinations thereof, but with ordinary or wood frame construction, protected materials shall be used.

b. One-room portable classroom buildings may be of lesser construction provided the interior finish of the classrooms complies with 5.657(2) and 5.657(3) as use requires. Only noncombustible types of insulation may be used in such instances and each building shall be a minimum of 20 feet from another building.

c. Two-story buildings may be constructed of fire-resistive or protected noncombustible materials throughout, or the first story may be constructed of fire-resistive or protected noncombustible materials with the second story having either heavy timber or noncombustible materials.

d. Buildings of more than two stories shall be fire-resistive throughout.

**5.658(4)** Construction of the floor located above a basement shall be of fire-resistive or protected noncombustible materials.

**5.658(5)** Construction of the floor located above a crawl space or a pipe tunnel shall be of fire-resistive or noncombustible materials except in portable one-room classroom buildings an Underwriters Laboratories, Inc., approved fire-retardant paint may be used.

**5.658(6)** Portable classroom buildings shall maintain a minimum of 20 feet distance from another building if complying with 5.658(3)“b.” One-room portable classroom buildings located 20 feet or less between adjacent walls shall have not less than a one-hour, fire-rated separation. All portable classroom buildings with raised floors shall be skirted to the ground with material equal to the siding of the building.

**5.658(7)** Boiler rooms, furnace rooms or fuel rooms which have no stories located above may be constructed of fire-resistive, noncombustible, protected heavy timber or protected ordinary materials.

**5.658(8)** Boiler rooms, furnace rooms or fuel rooms with building above shall be of two-hour, fire-resistive construction.

**661—5.659(100) Fire alarm systems.**

**5.659(1)** Buildings having two or more classrooms shall be equipped with a fire alarm system. Alarm stations shall be provided on each floor and so located that the alarm station is not more than 75 feet from any classroom door within the building. Minimum detection shall be corridor smoke detection, at a maximum spacing of 30 feet on centers, and heat detection in any hazardous areas. This minimum detection shall be installed by July 1, 2001. Horns or bells that provide a distinctive sound different from other bell systems shall be provided that will give audible warning to all occupants of the building in case of a fire or other emergency. A test device shall be provided for the purpose of conducting fire drills and tests of the alarm system. One-room classroom buildings placed in a complex of other classrooms shall be connected to the central alarm system.

**5.659(2)** Underwriters Laboratories, Inc., equipment and component parts shall be used in the installation of the fire alarm system. The electrical energy for the fire alarm system shall be on a separate circuit and shall be taken off the utility service to the school building ahead of the entrance disconnect. Fire alarm system shall be maintained in accordance with NFPA Pamphlet 72, National Fire Alarm Code, 1996 edition.

**5.659(3)** Whenever the fire marshal determines it advisable, the fire marshal may require that the fire alarm system be extended or designed to provide automatic fire detection devices in unsupervised areas, boiler rooms, storerooms or shop areas.

**661—5.660(100) Electrical wiring.**

**5.660(1)** Electrical wiring shall have enough circuits to provide adequate service without the need of overfusing the circuits.

**5.660(2)** The electrical wiring and component parts shall be properly maintained and serviced so as to eliminate the overheating or shorting that could cause a fire.

**5.660(3)** New or replacement electrical wiring installed after February 1, 2000, shall be in metal raceways.

**5.660(4)** All exit lights shall be connected ahead of the service disconnect.

**661—5.661(100) Heating equipment.**

**5.661(1)** Heating equipment shall be installed, where applicable, in rooms constructed in accordance with 5.658(6) and 5.658(7).

**5.661(2)** Installation for any heating equipment shall be in accordance with the manufacturer’s instruction and conditions of safe operation.

**5.661(3)** Acceptable evidence for complying with 5.661(2) shall be labeling or listed equipment by Underwriters Laboratories, Inc., The American Gas Association Testing Laboratories, or approval of the state fire marshal.

**5.661(4)** Oil burning equipment shall be installed, maintained and operated in accordance with rule 661—5.350(101).

**5.661(5)** All gas burning equipment shall be installed and maintained in accordance with rule 661—5.250(101). Gas piping shall comply with NFPA Standard 54, Natural Fuel Gas Code, 1992 edition. Gas service lines into buildings shall be brought out of the ground before entering the building and shall be equipped with a shutoff valve outside the building. Gas piping shall not run in enclosed space without proper venting.

**5.661(6)** Floor-mounted flame heating equipment shall not be allowed to be installed in any classroom.

**661—5.662(100) Gas piping.** Rescinded IAB 12/1/99, effective 2/1/00.

**661—5.663(100) Fire extinguishers.**

**5.663(1)** Each building shall be equipped with fire extinguishers, in compliance with NFPA Standard 10, Installation of Portable Fire Extinguishers, 1998 edition.

**5.663(2)** Rescinded IAB 12/1/99, effective 2/1/00.

**661—5.664(100) Basement, underground and windowless classrooms.**

**5.664(1)** Basement classrooms may be used provided there is compliance with either paragraphs “a” and “d,” or compliance with paragraphs “b,” “c,” “d” and “e” below.

a. Direct approved egress door from classrooms to the outside.

b. Classroom doors open into a corridor that leads directly outside.

c. Inside stairs from basement corridors, serving basement classrooms, shall not communicate with other stories above.

d. Doors from basement classroom corridors, to other areas of the basement, shall be at least 1¾-inch solid core wood and equipped with door closers.

e. Buildings, unless of fire-resistive construction, using the basement area for classroom purposes, shall have sprinkler or automatic alarm systems in the entire basement area.

**5.664(2)** Underground or windowless school buildings constructed after October 17, 1969, and in use prior to February 1, 2000, or for which plans have been approved by the state fire marshal prior to February 1, 2000, shall be provided with:

a. Complete approved, automatic sprinkler systems.

b. Approved automatic smoke venting facilities in addition to automatic sprinkler protection.

c. An approved-type emergency exit lighting system, if no natural lighting is provided.

d. Where required exit from underground structures involves upward travel, such as ascending stairs or ramp, such upward exits shall be cut off from main floor areas. If the area contains any combustible contents or combustible interior finish, it shall be provided with outside vented smoke traps or other means to prevent the exit serving as a flue for smoke from any fire in the area served by the exit, thereby making the exit impassable.

e. Every windowless building shall be provided with outside access panels on each floor level, designed for fire department access from ladders for purposes of ventilation and rescue of trapped occupants.

**5.664(3)** Reserved.

**5.664(4) to 5.664(7)** Rescinded IAB 12/1/99, effective 2/1/00.

**661—5.665(100) Fire hazard safeguards.**

**5.665(1)** Ventilating ducts discharging into attics of combustible construction shall be blocked off, protected with fire dampers or extended in a standard manner through the roof. Any light and ventilation shaft, chute, or other vertical opening between stories shall be protected as required for stairways.

**5.665(2)** Cooking ranges and other cooking appliances in food service area kitchens shall be provided with ventilating hoods, grease filters, and shall be vented to the outside in an approved manner.



**5.665(3)** Discarded furniture, furnishings or other combustible material shall not be stored or allowed to accumulate in attics or concealed spaces. Designated storage space shall be provided for equipment that may be used periodically throughout the school year and necessary to the school operation or curriculum schedule.

**5.665(4)** Space under stairways shall not be used for storage unless the storage area is lined with material that will provide a one-hour, fire-resistant rating and provided with a tight-fitting door that has a comparable fire-resistant rating. Except when removing or storing stock, the door shall be kept closed and locked.

**5.665(5)** Wastepaper baling and storage shall be in a room without ignition hazards and separated from other parts of the building by fire-resistant construction. Storage of paint products and flammable liquids shall be in a fire-resistive room or approved metal cabinet.

**5.665(6)** Decorative materials.

*a.* No furnishings, decorations, wall coverings, paints, etc., shall be used which are of a highly flammable character or which in the amounts used will endanger egress due to rapid spread of fire or formation of heavy smoke or toxic gases.

*b.* Highly flammable finishes such as lacquer and shellac are not permitted.

*c.* Draperies, curtains, loosely attached wall coverings, cloth hangings and similar materials shall be noncombustible or flame-proof in corridor exit ways and assembly occupancies. In other areas up to 10 percent of the wall area may have combustible coverings and hangings.

**5.665(7)** Spray finishing operations shall not be conducted except in a room designed for the purpose, protected with an approved automatic extinguishing system, and separated vertically and horizontally from such occupancies by construction having not less than two-hour fire resistance. NFPA Standard No. 33, Spray Finishing, 1995 edition, shall apply to construction and operation of all paint spray booths.

#### **661—5.666(100) Automatic sprinklers.**

**5.666(1)** Where automatic sprinkler protection is provided, other requirements of these regulations may be modified to such extent as permitted by other provisions in this section.

**5.666(2)** Automatic sprinkler systems shall be of standard, approved types so installed and maintained as to provide complete coverage for all portions of the premises protected, except insofar as partial protection is specified in other paragraphs of this section.

**5.666(3)** Automatic sprinkler systems for schools shall be those designed to protect occupancy classifications that are considered light hazard occupancies.

**5.666(4)** Automatic sprinkler systems shall be provided with water flow alarm devices to give warning of operation of the sprinkler due to fire, and such alarm devices shall be installed so as to give warning throughout the entire school building. The sprinkler alarm detection may be connected to the fire alarm system required by state law.

**5.666(5)** Partial automatic sprinkler systems shall provide complete protection in the basement and other hazardous areas. Above the basement area, stairwells and corridors shall be sprinklered. Nonhazardous classrooms are not required to be sprinklered for partial systems.

**5.666(6)** Water supplies.

*a.* All automatic sprinklers installed in school buildings shall be provided with adequate and reliable water supplies.

*b.* Public water supplies for sprinkler systems in schools shall have a minimum of 4-inch service pipe providing a minimum of 500 gallons of water per minute and shall have at least 15 pounds pressure at the highest sprinkler head.

*c.* Where public water supply is not available and a pressure supply tank is used, the tank shall be a minimum of 6,000 gallons capacity. The pressure tank shall operate at an air pressure adequate to discharge all of the water in the tank.

**5.666(7)** All automatic sprinkler systems required by these regulations shall be maintained in a reliable operating condition at all times in accordance with NFPA Standard No. 13, Installation of Sprinkler Systems, 1996 edition.

**5.666(8)** In buildings of ordinary or better construction, stairway enclosures shall not be required if protected by a partial or standard sprinkler system. Basement cutoffs of vertical openings are required. This modification of open stairways is permitted only in buildings that do not exceed a basement and two full stories.

**661—5.667(100) Open plan buildings.**

**5.667(1)** An “open plan building” is defined as any building where there are no permanent solid partitions between rooms or between rooms and corridors that are used for exit facilities.

**5.667(2)** Open plan buildings shall have enclosed stairways and any other vertical openings between floors protected in accordance with 5.666(1).

**5.667(3)** Open plan buildings shall not exceed 30,000 square feet in undivided area. Solid walls or smoke stop partitions shall be provided at intervals not to exceed 300 feet. Such walls or partitions shall have doors of a type that are at least 1¾-inch solid core wood doors and the partitions shall be the equivalent of one-hour construction.

**5.667(4)** Any cafeterias, gymnasiums or auditoriums shall be separated from the rest of the building by solid walls and no exits from other parts of the building shall require passing through such assembly areas.

**5.667(5)** Open plan buildings that do not have a direct exit door from each classroom to the outside shall be protected by a complete automatic fire detection system.

**5.667(6)** A sprinkler system may be installed in lieu of an automatic fire detection system in an open plan building.

**5.667(7)** Distance of travel to the nearest exit in an open plan building shall not exceed 100 feet from any point except that in a sprinklered building the distance may be increased to 150 feet.

Rules 5.650(100) to 5.667(100) are intended to implement Iowa Code section 100.35.

[Filed 12/19/60]

[Filed 6/22/62; amended 4/6/65, 10/17/69]

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[Filed 11/9/99, Notice 4/21/99—published 12/1/99, effective 2/1/00]

**661—5.668 to 5.674** Reserved.

NEW SCHOOL BUILDINGS

**661—5.675(100) New school buildings.** This rule applies to new school buildings.

**5.675(1)** Chapters 10-1 through 10-5 of the NFPA Life Safety Code 101, 1994 edition, along with referenced appendices and chapters are hereby adopted by reference as the rules governing school buildings, additions, alterations and renovations for which plans are approved by the fire marshal division on or after February 1, 2000, with the following amendments:

a. Delete 10-1.4.4 and 10-1.4.5.

b. Add 10-1.6.1 as follows:

10-1.6.1 Portable classroom buildings shall be located a minimum distance of 20 feet from another building, or shall have not less than a one-hour, fire-rated separation. All portable classroom buildings with raised floors shall be skirted to the ground with material equal to the siding of the building. Portable classroom buildings placed in a complex of other classrooms shall be connected to the central alarm system.

c. Delete 10-2.2.2.2 and replace it with the following:

10-2.2.2.2 Panic hardware or fire exit hardware. Any door in a required means of egress from an area having an occupant load of 50 or more persons shall be permitted to be provided with a latch or lock only if it is panic hardware or fire exit hardware complying with 5-2.1.7.

d. Add Exception No. 4 to 10-2.11.1 to read as follows:

Exception No. 4: Fire-resistive or noncombustible buildings protected throughout by a complete fire detection system.

e. Delete 10-3.2.3 and replace it with the following:

10-3.2.3 Doors to janitor closets shall be permitted to have ventilating louvers when the room is protected by an automatic sprinkler system in accordance with 7-7.1.2.

f. Delete 10-3.4.1 and replace it with the following:

10-3.4.1 General. Educational occupancies shall be provided with a fire alarm system and partial smoke detection system in accordance with Section 7-6.

g. Delete 10-3.4.2.2 and replace it with the following:

10-3.4.2.2 In buildings provided with smoke detection or automatic sprinkler protection, the operation of the smoke detection or the sprinkler system shall automatically activate the fire alarm system in addition to the initiation means required in 10-3.4.2.1.

h. Add 10-3.5.1 as follows:

10-3.5.1 Portable fire extinguishers shall be provided and located such that the maximum travel distance from any location in the building to a fire extinguisher is 75 feet. Where provided portable fire extinguishers shall be installed and maintained as specified in 7-7.4.1.

**5.675(2)** Every school building with two or more classrooms shall have a fire and tornado warning system. Equipment must be approved by a nationally recognized testing laboratory and the state fire marshal.

**5.675(3)** Delete 31-3.1 from LSC.

[Filed 11/9/99, Notice 4/21/99—published 12/1/99, effective 2/1/00]

**661—5.676 to 5.699** Reserved.

#### NEW COLLEGE BUILDINGS

**661—5.700(100) to 5.714(100)** Rescinded IAB 12/1/99, effective 2/1/00. See 661—5.775(100).

[Filed April 6, 1965; amended October 17, 1969]

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**661—5.715 to 5.748** Reserved.

#### EXISTING COLLEGE BUILDINGS

**661—5.749(100) Application.** Rules 661—5.749(100) to 661—5.765(100) apply to existing college buildings.

**661—5.750(100) Exits.**

**5.750(1)** Exits shall be provided of kinds, numbers, location and capacity appropriate to the individual building or structure, with due regard to the character of the occupancy, the number of persons exposed, the fire protection available, and the height and type of construction of the building or structure, to afford all occupants convenient facilities for escape.

**5.750(2)** The occupancy load, for the purpose of determining the required exits and the required space for classroom use, shall be determined on the following basis.

*a.* The square feet of floor space for persons in college buildings shall be one person for each 40 square feet of gross area.

*b.* In gymnasiums and auditoriums, the capacity for seating shall be on the basis of 6 square feet net per person.

**5.750(3)** Exits shall be so arranged and maintained as to provide free and unobstructed egress from all parts of every existing college building or structure at all times when the building or structure is occupied. No locks or fasteners to prevent free escape from the inside of any building shall be installed.

**5.750(4)** Exits shall be clearly marked, routes to reach them shall be conspicuously indicated and each path of escape in its entirety shall be so arranged or marked so that the way to a place of safety outside is unmistakable.

**5.750(5)** Where artificial illumination is needed, electric exit signs or directional indicators shall be installed and adequate lighting provided for all corridors and passageways.

**5.750(6)** Where additional outside stairs or fire escapes are required by law, they shall be 44 inches wide and shall extend to the ground. Platforms for outside stairs or fire escapes shall have a minimum dimension of 44 inches. Outside stairs and fire escapes shall be constructed in accordance with 5.101(4).

**5.750(7)** There shall be a minimum of two means of exit remote from each other from each floor. The traveled distance from any point to an exit shall not exceed 150 feet measured along the line of travel.

EXCEPTION: In sprinklered buildings, the traveled distance from any point to an exit may be 200 feet measured along the line of travel.

**5.750(8)** Every room with a capacity of 50 persons or over and having more than 1,000 square feet of floor area shall have at least two doorways as remote from each other as practicable. Such doorways shall provide access to separate exits but may open onto a common corridor leading to separate exits in opposite directions.

**5.750(9)** Where exits do not comply with the requirements of this rule and in which hazardous conditions exist because of the number, width, construction or location of exits, the fire marshal may order additional exits to ensure adequate safety of the occupants but under no condition may outside fire escapes exceed 50 percent of the required stairs.

#### **661—5.751(100) Corridors.**

**5.751(1)** Corridors used as means of access to exits, and corridors used for discharge from exits, shall provide a clearance of at least 6 feet in width, except in the case of buildings constructed prior to May 6, 1965. Room doors or locker doors swinging into corridors shall not, at any point in the swing, reduce the clear effective width of the corridor to less than 6 feet, nor shall drinking fountains or other equipment, fixed or movable, be so placed as to obstruct the required minimum 6-foot width.

**5.751(2)** Open clothing storage.

*a.* Where clothes are hung exposed in exit corridors, they shall be separated by partitions of sheet metal or equivalent material. Partitions shall be placed at 6-foot intervals, be a minimum of 18 inches in depth, extend at least 1 foot above the coat hooks and within 8 inches of the floor.

*b.* Where open clothing is hung in exit corridors as described above, an automatic fire detection system shall be installed in the corridor. Sprinkler systems may be installed in lieu of the automatic detection system.

**5.751(3)** Except as permitted in 5.751(2), no combustible materials shall be stored in exit corridors.

**5.751(4)** The walls of corridors, used for exit facilities, shall be solid partitions of noncombustible finish material.

**5.751(5)** Where borrowed light panels of clear glass are used in exit corridors, the requirements of 5.765(100) shall apply, except that clear glass windows in doors and transoms may be permitted in existing buildings when nonhazardous activities are carried on in the classroom.

**5.751(6)** Any single corridor or combination of corridors having an unbroken length of 300 feet or more shall be divided into sections by smoke barriers consisting of smoke stop doors. Doors may be of ordinary solid wood type not less than 1¾ inches thick with clear wired glass panels. Such doors shall be of self-closing type and may be either single or double. They shall close the opening completely with only such clearance as is reasonably necessary for proper operation. Underwriters Laboratories, Inc. listed electromagnetic holders may be used to hold these doors open provided they are hooked into the fire alarm system and a smoke detector is located at a strategic point near the doors.

**5.751(7)** There shall be no dead end in any corridor or hall more than 20 feet beyond the exit.

**661—5.752(100) Doors.**

**5.752(1)** Building entrance and exit doors and the doors of all classrooms shall open outward.

**5.752(2)** Doors shall be provided for main exit facilities leading to a platform connecting with either outside stairs or fire escapes. Doors leading to outside stairways or fire escapes shall have a minimum width of 40 inches, except that where it is not practical to install a door of 40-inch width, a narrower door at least 30 inches in width may be installed.

**5.752(3)** The main exit and entrance doors and doors leading to fire escapes shall be equipped with a latching device that cannot be locked against the exit.

**5.752(4)** Doors protecting stairways and doors leading to fire escapes or outside stairs may have wire-glass panes installed providing that the size of any single pane does not exceed 900 square inches.

**5.752(5)** Doors protecting vertical openings or fire doors installed where protection of hazardous rooms or areas is required shall be equipped with door closers and shall not be blocked open. Underwriters Laboratories, Inc. listed electromagnetic holders may be used to hold these doors open provided they are hooked into the fire alarm system and a smoke detector is located at a strategic point near the doors.

**5.752(6)** Classroom doors.

*a.* Doors of not less than 30 inches in width may be used. Doors must be a minimum of 1¾-inch solid core wood.

*b.* Buildings designed without doors to classrooms shall meet the requirements of rule 5.765(100).

**5.752(7)** Boiler, furnace or fuel room doors, communicating to other building areas, shall be 1½-hour rated doors and frames, normally closed and hung to swing into the boiler room.

**5.752(8)** Doors to storage of combustibles off corridors shall be at least 1¾-inch solid core wood.

**5.752(9)** Doors from classrooms to corridors may have closeable louvers up to 24 inches above the floor. No other louvers or openable transoms shall be permitted in corridor partitions.

**661—5.753(100) Windows.** Windows below or within 10 feet of an outside stairway or fire escape shall have panes of wire glass.

**661—5.754(100) Stairway enclosures and floor cutoffs.**

**5.754(1)** In buildings of more than one story, stairs shall be enclosed with protected noncombustible construction except those in accordance with 5.754(2). Doors shall be 1¾-inch solid wood construction, or better, with wire glass allowable.

**5.754(2)** In buildings of two stories with no basement where such buildings are fire-resistive construction throughout, or fire-resistive first story and noncombustible or heavy timber second story, the stairs need not be enclosed, provided:

*a.* All exit-way finish is Class A (flame spread rating not exceeding 25),

*b.* There is no open storage of wardrobe, books or furniture in exit ways or spaces common to them, and

*c.* Stairs from the second floor lead directly to an outside door or vestibule leading to the outside of the building.

**5.754(3)** Stairway enclosures or the protection of vertical openings shall be the equivalent of wood studding with gypsum lath and plaster on both sides. The doors shall be at least 1¾-inch solid core wood doors, with maximum 900 square inch glass panels allowable.

**5.754(4)** Stairways from boiler, furnace or fuel rooms, communicating to other building areas, shall be enclosed at top and bottom. The entire stair enclosure shall be noncombustible construction. The doors (other than to the boiler room) may be 1¾-inch solid wood with maximum of 900 square inches of wired glass allowable.

**5.754(5)** Except as provided elsewhere in this rule, interior stairways used as exits shall be enclosed. The construction of the enclosure shall be in accordance with the provisions of 5.754(1).

**5.754(6)** Cutoffs between floors for stairways not used as exit facilities shall use the same type of construction as provided in 5.754(1).

**5.754(7)** Where building layout or construction makes it impractical to comply with rule 5.754(100), the fire marshal shall make an analysis of the building and may then order remedial construction or installation of fire detection or equipment which will correct hazardous conditions.

**661—5.755(100) Interior finishes.**

**5.755(1)** Interior finish shall be Class A in exit and Class A or B in access to exits. See Table No. 5-C following 661—5.105(100).

**5.755(2)** Whenever the fire marshal determines the fire hazard is great enough, Class A materials for room finishes shall be used in science laboratories, shop areas, and such other areas as the fire marshal shall designate, in addition to those areas designated by 5.755(1).

**661—5.756(100) Construction.** All additions shall comply with rule 661—5.775(100).

**661—5.757(100) Fire alarm systems.**

**5.757(1)** All schools having two or more classrooms shall be equipped with a fire alarm system. Alarm stations shall be provided on each floor and so located that the alarm station is not more than 75 feet from any classroom door within the building. Horns or bells that provide a distinctive sound different from other bell systems shall be provided that will give audible warning to all occupants of the building in case of a fire or other emergency. A test device shall be provided for the purpose of conducting fire drills and tests of the alarm system. One-room classroom buildings placed in a complex of other classrooms shall be connected to the central alarm system.

**5.757(2)** Underwriters Laboratories, Inc. equipment and component parts shall be used in the installation of the fire alarm system. The electrical energy for the fire alarm system shall be on a separate circuit and shall be taken off the utility service to the school building ahead of the entrance disconnect.

**5.757(3)** Whenever the fire marshal determines it advisable, the fire marshal may require that the fire alarm system be extended or designed to provide automatic fire detection devices in unsupervised areas, boiler rooms, storerooms or shop areas.

**661—5.758(100) Electrical wiring.**

**5.758(1)** The electrical wiring of any educational building shall have enough circuits to provide adequate service without the need of overfusing the circuits.

**5.758(2)** The electrical wiring and component parts shall be properly maintained and serviced so as to eliminate the overheating or shorting that could cause a fire.

**5.758(3)** New or replacement electrical wiring installed on or after February 1, 2000, shall be in metal raceways.

**5.758(4)** All exit lights shall be connected ahead of the service disconnect.

**661—5.759(100) Heating equipment.**

**5.759(1)** Heating equipment shall be installed, where applicable, in rooms constructed in accordance with the following requirements:

- a.* Boiler rooms, furnace rooms, or fuel rooms which have no stories located above shall be constructed of fire-resistive, noncombustible, protected heavy timber, or protected ordinary materials.
- b.* Boiler rooms, furnace rooms, or fuel rooms with one or more stories above shall be of two-hour, fire-resistive construction.

EXCEPTION: Heating equipment in one- or two-room portable classroom buildings is not required to have fire-rated separation.

**5.759(2)** Installation for any heating equipment shall be in accordance with the manufacturer's instruction and conditions of safe operation.

**5.759(3)** Acceptable evidence for complying with subrule 5.759(1) shall be labeled or listed equipment by Underwriters Laboratories, Inc., The American Gas Association Testing Laboratories, or approval of the state fire marshal.

**5.759(4)** Oil burning equipment shall be installed, maintained and operated in accordance with rule 661—5.350(101).

**5.759(5)** All gas burning equipment shall be installed and maintained in accordance with rule 661—5.250(101).

**5.759(6)** Floor-mounted flame heating equipment shall not be allowed to be installed in any classroom.

**661—5.760(100) Gas piping.**

**5.760(1)** Gas piping shall be in accordance with rule 661—5.250(101).

**5.760(2)** All gas service lines into buildings shall be brought out of the ground before entering the building and shall be equipped with a shutoff valve outside the building.

**5.760(3)** Gas piping cannot run in enclosed space without proper venting.

**661—5.761(100) Fire extinguishers.**

**5.761(1)** Each college building shall be equipped with fire extinguishers of a type, size, and number approved by the state fire marshal.

**5.761(2)** NFPA Standard No. 10, Installation of Portable Fire Extinguishers, 1994 edition, is applicable. Vaporizing extinguishers containing halogenated hydrocarbon extinguishing agents shall not be approved except in accordance with rule 661—5.40(17A,80,100).

**661—5.762(100) Basements.** Basement classrooms may be used provided there is compliance with paragraph "1" or "2" and compliance with paragraphs "3," "4" and "5":

1. Direct approved egress door from classrooms to the outside.
2. Classroom doors open into a corridor that leads directly outside.
3. Inside stairs from basement corridors, serving basement classrooms, shall not communicate with other stories above unless of fire-resistive construction.
4. Doors from basement classroom corridors, to other areas of the basement, shall be Class B and equipped with door closers except that solid frames and solid core wood doors, not less than 1¾ inches thick, shall be permitted.
5. Buildings, unless of fire-resistive construction, using the basement area for classroom purposes, shall have sprinkler or automatic alarm systems in the entire basement area.

**661—5.763(100) Fire hazard safeguards.**

**5.763(1)** Ventilating ducts discharging into attics of combustible construction shall be blocked off, protected with fire dampers or extended in a standard manner through the roof.

**5.763(2)** Cooking ranges and other cooking appliances in food service area kitchens shall be provided with ventilating hoods, grease filters, and shall be vented to the outside in an approved manner.

**5.763(3)** Discarded furniture, furnishings or other combustible material shall not be stored or allowed to accumulate in attics or concealed spaces. Designated storage space shall be provided for equipment that may be used periodically throughout the school year and necessary to the college operation or curriculum schedule.

**5.763(4)** Space used for storage under stairways shall not be allowed unless the storage area is lined with material that will provide a one-hour, fire-resistant rating and provided with a tight-fitting door that has a comparable fire-resistant rating. Except when removing or storing stock, the door shall be kept closed and locked.

**5.763(5)** Wastepaper baling and storage shall be in a room without ignition hazards and separated from other parts of the building by fire-resistant construction.

**5.763(6)** Storage of paint products and flammable liquids shall be in a fire-resistive room or approved metal cabinet.

**5.763(7)** Decorative materials.

*a.* No furnishings, decorations, wall coverings, paints, etc., shall be used which are of a highly flammable character or which in amounts used will endanger egress due to rapid spread of fire or formation of heavy smoke or toxic gases.

*b.* Highly flammable finishes such as lacquer and shellac are not permitted.

*c.* Draperies, curtains, loosely attached wall coverings, cloth hangings and similar materials shall be noncombustible or flameproof in corridor exit ways and assembly occupancies. In other areas up to 10 percent of the wall area may have combustible coverings and hangings.

**5.763(8)** Spray finishing operations shall not be conducted except in a room designed for the purpose, protected with an approved automatic extinguishing system, and separated vertically and horizontally from such occupancies by construction having not less than two-hour fire resistance. NFPA Standard No. 33, Spray Finishing, 1995 edition, shall be applicable for construction and operation of all paint spray booths.

**661—5.764(100) Automatic sprinklers.**

**5.764(1)** Subrules 5.764(2) to 5.764(9) shall apply, if upon inspection by the fire marshal a building or area is deemed hazardous for life safety and a sprinkler system installation is ordered.

**5.764(2)** Where automatic sprinkler protection is provided, other requirements of these rules may be modified to such extent as permitted by other provisions in 5.764(100).

**5.764(3)** Automatic sprinkler systems shall be of standard, approved types so installed and maintained as to provide complete coverage for all portions of the premises protected, except insofar as partial protection is specified in other subrules of 5.764(100).

**5.764(4)** Automatic sprinkler systems for college buildings shall be those designed to protect occupancy classifications that are considered light hazard occupancies.

**5.764(5)** Automatic sprinkler systems shall be provided with water flow alarm devices to give warning of operation of the sprinkler due to fire, and such alarm devices shall be installed so as to give warning throughout the entire building. The sprinkler alarm detection may be connected to the fire alarm system required by state law.

**5.764(6)** Partial automatic sprinkler systems shall provide complete protection in basement and other hazardous areas. Above the basement area, stairwells and corridors shall be sprinklered. Non-hazardous classrooms are not required to be sprinklered for partial systems.



**5.764(7)** Water supplies.

*a.* All automatic sprinklers installed in college buildings shall be provided with adequate and reliable water supplies.

*b.* Public water supplies for sprinkler systems in college buildings shall have a minimum of 4-inch service pipe providing a minimum of 500 gallons of water per minute and shall have at least 15 pounds pressure at the highest sprinkler head.

*c.* Where public water supply is not available and a pressure supply tank is used, the tank shall be a minimum of 6,000 gallons capacity. The pressure tank shall operate at an air pressure adequate to discharge all of the water in the tank.

**5.764(8)** All automatic sprinkler systems required by these regulations shall be maintained in a reliable operating condition at all times and such periodic inspections and tests as are necessary shall be made to ensure proper maintenance.

**5.764(9)** In buildings of ordinary or better construction, stairway enclosures will not be required if protected by a partial or standard sprinkler system. Basement cutoffs of vertical openings will be required. This modification of open stairways is permitted only in buildings that do not exceed a basement and two full stories.

**661—5.765(100) Open plan buildings.**

**5.765(1)** In buildings where the design of the building lends itself to the classification of an open plan building, the requirements for fire safety of subrules 5.764(2) to 5.764(9) shall apply.

**5.765(2)** This will include regulations for all buildings where there are no permanent solid partitions between rooms or between rooms and corridors that are used for exit facilities.

**5.765(3)** Open plan buildings shall have enclosed stairways and any other vertical openings between floors protected in accordance with subrule 5.754(1).

**5.765(4)** Open plan buildings shall not exceed 30,000 square feet in undivided area. Solid walls or smoke stop partitions shall be provided at intervals not to exceed 300 feet. Such walls or partitions shall have doors of a type that are at least 1¾-inch solid core wood doors and the partitions shall be the equivalent of one-hour construction.

**5.765(5)** Any cafeterias, gymnasiums or auditoriums shall be separated from the rest of the building by solid walls and no exits from other parts of the building shall require passing through such assembly areas.

**5.765(6)** Open plan buildings that do not have a direct exit door from each classroom to the outside shall be protected by a complete automatic fire detection system.

**5.765(7)** A sprinkler system may be installed in lieu of an automatic fire detection system in an open plan building.

**5.765(8)** Distance of travel to the nearest exit in an open plan building shall not exceed 100 feet from any point.

EXCEPTION: In a sprinklered building, the distance may be increased to 150 feet.

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**661—5.766 to 5.774** Reserved.

## NEW COLLEGE BUILDINGS

**661—5.775(100) New college buildings.** Subsection 10-1.1.2 of the NFPA Life Safety Code 101, 1994 edition, along with referenced appendices and chapters, is hereby adopted by reference as the rules governing college buildings, additions, alterations and renovations for which plans are approved by the state fire marshal on or after February 1, 2000, with the following amendments:

1. Add 10-1.1.2.1 to read as follows:

10-1.1.2.1 Panic hardware or fire exit hardware. Any door in a required means of egress from an area having an occupant load of 50 or more persons shall be permitted to be provided with a latch or lock only if it is panic hardware or fire exit hardware complying with 5-2.1.7.

2. Add 10-1.1.2.2 to read as follows:

10-1.1.2.2 Fire alarms. A fire alarm system and partial smoke detector system shall be provided in accordance with Section 7-6.

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**661—5.776 to 5.799** Reserved.

## FIRE SAFETY RULES FOR RESIDENTIAL OCCUPANCIES

**661—5.800(100) General provisions.**

**5.800(1) Scope.** Rules 661—5.801(100) through 661—5.806(100) apply to residential occupancies, except for bed and breakfast inns. In addition, rules 661—5.807(100) through 661—5.809(100) apply to residential occupancies, including bed and breakfast inns, and to all one- and two-family dwellings.

**5.800(2) Definitions.** The following definitions apply to rules 661—5.801(100) through 661—5.820(100).

“*Apartment house*” is any building or portion thereof which contains three or more dwelling units.

“*Atrium*” is an opening through two or more floor levels other than enclosed stairways, elevators, hoistways, escalator, plumbing, electrical, air conditioning or other equipment which is closed at the top and not defined as a mall.

“*Bed and breakfast home*” means a private residence which provides lodging and meals for guests, in which the host or hostess resides and in which no more than four guest families are lodged at the same time and which, while it may advertise and accept reservations, does not hold itself out to the public to be a restaurant, hotel, or motel, does not require reservations, and serves food only to overnight guests. Rule 661—5.820(100) shall not apply to bed and breakfast homes. However, a bed and breakfast home shall have a smoke detector in proper working order in each sleeping room and a fire extinguisher in proper working order on each floor.

“*Bed and breakfast inn*” is a building or structure equipped, used, or advertised as or held out to the public to be an inn, hotel, motel, motor inn, or place where sleeping accommodations are furnished for hire to transient guests and which has nine or fewer guest rooms.

“*Convent or monastery*” is a place of residence occupied by a religious group of people, especially monks or nuns.

“*Dormitories*” are buildings or spaces where group sleeping accommodations are provided for guests in a series of closely associated rooms under joint occupancy and single management, such as college dormitories, fraternity houses, sorority houses, with or without meals but without individual cooking facilities.

“*Existing residential occupancy*” is a residential occupancy placed in its current use prior to October 31, 1985.

“*Guest*” is any person hiring or occupying a room for living or sleeping purposes.

“*Guest room*” is any room or rooms used or intended to be used by a guest for sleeping purposes. Every hundred square feet of superficial floor area in a dormitory shall be considered to be a guest room.

“*Hotel/motel*” is any building containing six or more guest rooms intended or designed to be used or which are used, rented or hired out to be occupied or which are occupied for sleeping purposes by guests.

“*Lodging or rooming house*” is any building or portion thereof containing not more than five guest rooms where rent is paid in money, goods, labor or otherwise.

“*New residential occupancy*” is a residential occupancy placed into its current use on or after October 31, 1985.

“*Residential occupancies*” include hotels, motels, apartment houses, dormitories, lodging and rooming houses, convents and monasteries each accommodating more than ten persons.

#### NEW RESIDENTIAL OCCUPANCIES

### **661—5.801(100) General requirements.**

#### **5.801(1) Construction, height and allowable floor area.**

*a. General.* Buildings or parts of buildings classed as residential occupancies shall be limited to the types of construction set forth in Table 5-B in rule 5.50(100) “Exits” and shall not exceed, in area or height, the limits specified in Table 8-B.

*b. Special provisions.* Residential occupancies more than two stories in height or having more than 3,000 square feet of floor area above the first story shall be limited to the types of construction and height in Table 8-B.

EXCEPTION: Interior nonload-bearing partitions within individual dwelling units in apartment houses and guest rooms or suites in hotels when such dwelling units, guest rooms or suites are separated from each other and from corridors by not less than one-hour fire-resistive construction may be constructed of:

1. Noncombustible materials or fire-retardant treated wood in buildings of any type of construction; or
2. Combustible framing with noncombustible materials applied to the framing in buildings of Type III or V construction.

Storage or laundry rooms that are within residential occupancies that are used in common by tenants shall be separated from the rest of the building by not less than one-hour fire-resistive occupancy separation.

**5.801(2) Light and ventilation.** All guest rooms, dormitories and habitable rooms within a dwelling unit shall be provided with natural light by means of exterior glazed openings with an area not less than one-tenth of the floor area of such rooms with a minimum of 10 square feet. All bathrooms, water closet compartments, laundry rooms and similar rooms shall be provided with natural ventilation by means of openable exterior openings with an area not less than one-twentieth of the floor area of the rooms with a minimum of 1½ square feet.

All guest rooms, dormitories and habitable rooms within a dwelling unit shall be provided with natural ventilation by means of openable exterior openings with an area of not less than one-twentieth of the floor area of such rooms with a minimum of 5 square feet.

In lieu of required exterior openings for natural ventilation, an approved mechanical ventilating system may be provided. Such systems shall be capable of providing two air changes per hour in all guest rooms, dormitories, habitable rooms and public corridors. One-fifth of the air supply shall be taken from the outside. In bathrooms, water closet compartments, laundry rooms and similar rooms, a mechanical ventilation system connected directly to the outside shall be capable of providing five air changes per hour.

For the purpose of determining light and ventilation requirements, any room may be considered as a portion of an adjoining room when one-half of the area of the common wall is open and unobstructed and provides an opening of not less than one-tenth of the floor area of the interior room or 25 square feet, whichever is greater.

Required exterior openings for natural light and ventilation shall open directly onto a street or public alley, yard or court located on the same lot as the building.

EXCEPTION: Required windows may open into a roofed porch where the porch:

1. Abuts a street, yard or court;
2. Has a ceiling height of not less than 7 feet; and
3. Has the longer side at least 65 percent open and unobstructed.

**5.801(3) *Mixed occupancies general.*** When a building is used for more than one occupancy purpose, each part of the building comprising a distinct "Occupancy," as shown in the occupancy classification Table 8-A shall be separated from any other occupancy as specified in Table 8-C.

EXCEPTION: Gift shops, administrative offices and similar rooms not exceeding 10 percent of the floor area of the major use.

**5.801(4) *Occupant load.*** For the purpose of establishing exit requirements, the occupant load of any building or portion thereof used for the purpose of rules 5.801(100) to 5.803(100) shall be determined by dividing the net floor area assigned to that use by the square feet per occupant as indicated in Table 5-A and rule 661—5.51(100).

**5.801(5) *Dormitories.*** New dormitories shall comply with the requirements for new hotels within this chapter.

#### **661—5.802(100) Exit facilities in new residential occupancies.**

**5.802(1) *Types of exits.*** Exits of the specified number and width shall be one or more of the following types as listed in state fire marshal's fire safety rules and regulations for new and existing buildings.

1. Doors of the swinging type leading directly to the outside or to a lobby or passageway leading to the outside of the building. (See rule 5.53(100))
2. Horizontal exits. (See rule 5.57(100))
3. Smokeproof towers. (See rule 5.59(100))
4. Interior stairs. (See rule 5.55(100) and 5.58(100))
5. Outside stairs. (See rule 5.55(100))
6. Ramps. (See rule 5.56(100))
7. Escalators. (See rule 5.58(100))
8. Exit passageways. (See rule 5.61(100))
9. Corridors and exterior balconies. (See rule 5.54(100))
10. Exit courts. (See rule 5.60(100))

**5.802(2) *Number of exits.*** The minimum number of exits shall be as prescribed in rule 5.52(100).

EXCEPTION 1: Except as provided in Table 5-A, only one exit need be provided from the second story within an individual dwelling unit.

EXCEPTION 2: Two or more dwelling units on the second story may have access to only one common exit when the total occupant load using that exit does not exceed 10 or 2,000 square feet of floor area. See Table 5-A.

**5.802(3) *Required exit width.*** Exit width shall be determined as outlined in subrule 5.52(2).

**5.802(4) *Arrangement of exits.*** The arrangement of required exits shall be as prescribed in subrule 5.52(3).

**5.802(5) *Travel distance.*** The maximum travel distance from any point to an exterior exit door, horizontal exit, exit passageway, or an enclosed stairway shall not exceed 150 feet, or 200 feet in a building equipped with an automatic sprinkler system complying with subrule 5.52(6). These distances may be increased 100 feet when the last 150 feet is within a corridor complying with rule 5.54(100).

**5.802(6) Exit illumination.** At any time the building is occupied, exits shall be illuminated with light having an intensity of not less than one foot-candle at floor level and in accordance with the requirements of rule 5.62(100).

**5.802(7) Exit signs.** Exit signs shall be installed at required exit doorways and where otherwise necessary to clearly indicate the direction of egress in accordance with the requirements of rule 5.63(100).

**5.802(8) Shaft enclosures.**

*a. General.* Openings extending vertically through floors shall be enclosed in a shaft of fire-resistive construction having the time period set forth in Table 5-B for shaft enclosures. Protection for stairways shall be as specified in rules 5.58(100) and 5.59(100).

EXCEPTION 1: An enclosure will not be required for openings which serve only one adjacent floor and are not connected with openings serving other floors and which are not concealed within the building construction.

EXCEPTION 2: Stairs within individual apartments need not be enclosed.

*b. Rubbish and linen chutes.* In new residential occupancies, rubbish and linen chutes shall terminate in rooms separated from the remainder of the building by a one-hour fire-resistive occupancy separation. Openings into the chutes and termination rooms shall not be located in exit corridors or stairways.

**5.802(9) Atriums.**

*a. General.* Buildings classified as residential occupancies with automatic sprinkler protection throughout may have atriums complying with the provisions of this rule. Such atriums shall have a minimum opening and dimensions as follows:

Height in Stories	Minimum Clear Opening (Ft.)	Minimum Area (Sq. Ft.)
3-4	20	400
5-8	30	900
8 or more	40	1,600

NOTE: The above dimensions are the diameters of inscribed circles whose centers fall on a common axis for the full heights of the atrium.

*b. Smoke-control system.* A mechanically operated air-handling system shall be installed that will exhaust smoke either entering or developed within the atrium. Exhaust openings shall be located in the ceiling or in a smoke-trap area immediately adjacent to the ceiling of the atrium. The lowest level of the exhaust openings shall be located above the top of the highest portion of door openings into the atrium. Supply openings sized to provide a minimum of 50 percent of the exhaust volume shall be located at the lowest level of the atrium.

When the height of the atrium is 55 feet or less, supply air may be introduced by gravity, provided smoke control is accomplished. When the height of the atrium is more than 55 feet, supply air shall be introduced mechanically from the floor of the atrium and be directed vertically toward the exhaust outlets. In atriums over six stories in height or where tenant spaces above the second story are open to the atrium, supplemental supply air may be introduced at upper levels. The exhaust and supply system for the atrium shall operate automatically upon the actuation of the automatic sprinkler system within the atrium or areas open to the atrium or by the actuation of two or more smoke detectors required by this rule. The exhaust and supply equipment shall also be manually operable by controls designed for fire department use. The smoke-control system may be separate or integrated with other air-handling systems. When the smoke-control mode is actuated, air-handling systems which would interfere with the smoke-control system shall be automatically shut down.

Enclosed tenant spaces shall be provided with an approved smoke-control system.

The atrium smoke-control system shall exhaust not less than the following quantities of air:

1. For atriums having a volume of not more than 600,000 cubic feet, including the volume of any levels not physically separated from the atrium, not less than six air changes per hour nor less than 40,000 cfm. A lesser cfm is acceptable if it can be shown by test that smoke will not migrate beyond the perimeter of the atrium.

2. For atriums having a volume of more than 600,000 cubic feet, including the volume of any levels not physically separated from the atrium, not less than four air changes per hour.

Smoke detectors which will automatically operate the atrium smoke-control system shall be installed at the perimeter and on the ceiling of the atrium and on the ceiling of each floor level that is open to the atrium. In floor levels open to the atrium, detectors shall be within 15 feet of the atrium. Detectors shall be located in accordance with their listing.

c. *Enclosure of atriums.* Atriums shall be separated from adjacent spaces by not less than one-hour fire-resistive construction.

EXCEPTION: Open exit balconies are permitted within the atrium.

Openings in the atrium enclosure other than fixed glazing shall be protected by tight-fitting fire assembly doors which are maintained automatic closing by actuation of a smoke detector, or self-closing.

Fixed glazed openings in the atrium enclosure shall be equipped with fire windows having a fire-resistive rating of not less than three-fourths hour, and the total area of such openings shall not exceed 25 percent of the area of the common wall between the atrium and the room into which the opening is provided.

EXCEPTION: In residential occupancies, openings may be unprotected when the floor area of each room or dwelling unit does not exceed 1,000 square feet and each room or unit has an approved exit not entering the atrium.

d. *Travel distance.* When a required exit enters the atrium space, the travel distance from the doorway of the tenant space to an enclosed stairway, horizontal exit, exterior door or exit passageway shall not exceed 100 feet.

e. *Standby power.* The smoke-control system for the atrium and the smoke-control system for the tenant space are to be provided with approved standby power.

f. *Interior finish.* The interior finish of walls and ceilings of the atrium and all unseparated tenant spaces shall be Class A with no reduction in class for sprinkler protection.

g. *Acceptance of the smoke-control system.* Before the certificate of occupancy is issued, the smoke-control systems shall be tested in an approved manner and shall show compliance with the requirements of this rule.

h. *Inspection of the smoke-control system.* All operating parts of the smoke-control systems shall be tested by an approved inspection agency or by the owner or the owner's representative when so approved. Inspections shall be made every three months and a log of the tests be kept by the testing agency. The log shall be on the premises and available for examination by fire department personnel.

i. *Combustible furnishings in atriums.* The quantity of combustible furnishings in atriums shall not exceed that specified below:

(1) The potential heat of combustible furnishings and decorative materials within atriums shall not exceed 9,000 Btu per pound when located within an area of the atrium that is more than 20 feet below ceiling-mounted sprinklers.

(2) All decorative materials shall be noncombustible or shall be flame-retardant treated and so maintained.

(3) Devices generating an open flame shall not be used nor installed within atriums.

**661—5.803(100) General safety requirements.**

**5.803(1) Special hazards.** Chimneys and heating apparatus shall conform to manufacturer's instruction and nationally recognized codes. The storage and handling of gasoline, fuel oil or other flammable liquids shall be in accordance with national fire codes. Doors leading into rooms in which volatile flammable liquids are stored or used shall be protected by a fire assembly having a one-hour fire protection rating. The fire assembly shall be self-closing and shall be posted with a sign on each side of the door in 1-inch block letters stating: FIRE DOOR — KEEP CLOSED.

Every room containing a boiler or central heating plant shall be separated from the rest of the building by not less than a one-hour fire-resistive occupancy separation.

EXCEPTION: A separation shall not be required for rooms with equipment servicing only one dwelling unit.

**5.803(2) Interior finish.**

*a. Corridors, lobbies and enclosed stairways.* Interior finish in all corridors and lobbies shall be Class A, or Class B will be permitted in a fully sprinklered building, and in enclosed stairways, Class A.

*b. General assembly.* Interior finish in general assembly areas shall be Class A in exit. See Table No. 5-C following 661—5.105(100).

*c. Interior floor finish.* Interior floor finish within corridors and exits shall be Class I or Class II interior floor finish. See Table No. 5-D following 661—5.105(100).

**5.803(3) Windows for rescue.** Every sleeping room below the fourth story shall have at least one openable window or exterior door approved for emergency rescue. The units shall be openable from the inside without the use of separate tools.

All rescue windows from sleeping rooms shall have a minimum net clear opening of 5.7 square feet. The minimum net clear opening height dimension shall be 24 inches. The minimum clear opening width dimension shall be 20 inches. Where windows are provided as a means of rescue, they shall have a finished sill height of not more than 44 inches above the floor.

Bars, grilles, grates or similar devices may be installed on emergency escape or rescue windows or doors, provided:

1. Devices are equipped with approved release mechanisms which are openable from the inside without use of a key or special knowledge or effort; and

2. The building is equipped with smoke detectors installed in accordance with subrule 5.803(4).

**5.803(4) Protection systems.**

*a. Smoke detectors.* Every dwelling unit in apartment houses, dormitories, and every guest room in a hotel/motel or lodging house used for sleeping purposes shall be provided with approved smoke detectors. In all new construction, required smoke detectors shall receive their primary power from the building wiring when wiring is served from a commercial source. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection. In dwelling units, detectors shall be mounted on the ceiling or wall at a point centrally located in the corridor or area giving access to rooms used for sleeping purposes. (For specific requirements see Iowa Code section 100.18.)

*b. Alarm systems.* Every apartment house three stories or more in height or containing more than 15 apartments and every hotel three stories or more in height, or containing 20 or more guest rooms shall have installed therein an approved automatic or manually operated fire alarm system designed to warn the occupants of the building in the event of fire. Fire alarm systems shall be so designed that all occupants of the building may be warned simultaneously.

EXCEPTION: An alarm system need not be installed in buildings not over two stories in height when all individual apartments and guest rooms and contiguous attic and crawl spaces are separated from each other and from common areas by at least one-hour fire-resistive occupancy separations and each individual apartment or guest room has an exit direct to a yard or public way.

*c. Automatic sprinkler system.* Automatic sprinkler systems shall be provided in all residential occupancies more than four stories in height or more than 65 feet above grade level. (Also see subrule 5.52(6) and Iowa Code section 100.39.)

*d. Portable fire extinguishers.* Approved-type fire extinguishers shall be provided on each floor, so located that they will be accessible to the occupants, and spaced so that no person will have to travel more than 75 feet from any point to reach the nearest extinguisher. Additional extinguishers may be required in areas that constitute a special hazard. Type and number of portable extinguishers shall be determined by the state fire marshal or local fire authority.

*e. Maintenance.* Regular and proper maintenance of electric service, heating plants, alarm systems, sprinkler systems, fire doors and exit facilities shall be required.

#### EXISTING RESIDENTIAL OCCUPANCIES

### **661—5.804(100) Existing residential occupancies.**

**5.804(1) Application.** The requirements of rules 661—5.804(100) through 661—5.807(100) shall apply to existing hotels/motels, apartment houses, dormitories, lodging and rooming houses, convents accommodating more than ten persons, and monasteries accommodating more than ten persons.

No building or structure housing existing residential occupancies shall be occupied in violation of rules 5.804(100) to 5.806(100).

**5.804(2) Reasonable safety provisions.** The state fire marshal or local enforcement authority shall determine the adequacy of means of egress and other measures for safety from fire in accordance with these rules. In existing buildings where physical limitations may require disproportionate effort or expense with little increase in life safety, the state fire marshal or local enforcement authority may grant exceptions to these rules, but only when it is clearly evident that reasonable safety is provided.

**5.804(3) Change of occupancy.** No existing building or portion of an existing building may have its occupancy changed to residential use unless the building or portion thereof meets the requirements for new residential occupancies.

**5.804(4) Occupant load.** For the purpose of establishing exit requirements, the occupant load of any building or portion thereof used for the purposes of rules 5.804(100) to 5.806(100) shall be determined by dividing the net floor area assigned to that use by the square feet per occupant as indicated in Table 5-A and rule 661—5.51(100) of the state fire marshal's fire safety rules regarding exits.

### **661—5.805(100) Exit facilities.**

**5.805(1) Types of exits.** Exits of the specified number and width shall be one or more of the following types as listed in the state fire marshal's fire safety rules and regulations for new and existing buildings.

1. Doors of the swinging types leading directly to the outside or to a lobby or passageway leading to the outside of the building. (See rule 5.53(100))
2. Horizontal exits. (See rule 5.57(100))
3. Smokeproof towers. (See rule 5.59(100))
4. Interior stairs (See rules 5.55(100) and 5.58(100))
5. Outside stairs. (See rule 5.55(100))
6. Ramps. (See rule 5.56(100))
7. Escalators. (See rule 5.58(100))
8. Exit passageways. (See rules 5.61(100) and 5.101(100))
9. Corridors and exterior balconies. (See rule 5.54(100))
10. Exit courts. (See rule 5.60(100))



An existing stairway, fire escape or other exit component which meets the requirements of rules 5.100(100) to 5.105(100) may be continued in use provided it is in good repair and acceptable to the authority having jurisdiction.

Any exit modification required by this chapter shall meet the requirements for new construction.

**5.805(2) Number of exits.** The minimum number of exits shall be as prescribed in subrule 5.52(1) or 5.101(1).

EXCEPTION 1: Any living unit which has an exit directly to the street or yard at ground level or by way of an outside stairway, or an enclosed stairway with fire-resistance rating of one hour or more serving that apartment only and not communicating with any floor below the level of exit discharge or other area not a part of the apartment served, may have a single exit serving that unit only.

EXCEPTION 2: Any building less than three stories in height with no floor below the floor of exit discharge or, in case there is such a floor, with the street floor construction of at least one-hour fire resistance, may have a single exit, under the following conditions:

*a.* The stairway is completely enclosed with a partition having a fire-resistance rating of at least one hour with self-closing fire doors protecting all openings between the stairway enclosure and the building.

*b.* The stairway does not serve any floor below the floor of exit discharge.

*c.* All corridors serving as access to exits have at least a one-hour fire-resistance rating.

*d.* There is not more than 35 feet of travel distance to reach an exit from the entrance door of any living unit.

**5.805(3) Required exit width.** Exit width shall be determined as outlined in subrule 5.52(2).

**5.805(4) Arrangement of exits.** The arrangement of required exits shall be as prescribed in subrule 5.52(3).

**5.805(5) Travel distance.** The maximum travel distance from any point to an exterior exit door, horizontal exit, exit passageway, or an enclosed stairway shall not exceed 150 feet.

EXCEPTION: The travel distance may be increased to 200 feet if protected throughout by an automatic sprinkler system.

**5.805(6) Dead-end corridors.** Dead-end corridors shall not exceed 20 feet in length.

EXCEPTION: When corridors meet requirements of rule 5.105(100).

**5.805(7) Exit illumination.** Exits shall be illuminated at any time the building is occupied with light having an intensity of not less than 1 foot-candle at floor level and in accordance with the requirements of rule 5.62(100).

**5.805(8) Exit signs.** Exit signs shall be installed at required exit doorways and where otherwise necessary to clearly indicate the direction of egress in accordance with the requirements of subrule 5.101(5).

**5.805(9) Protection of vertical openings.** All interior stairways, elevator shafts, light and ventilation shafts and other vertical openings shall be enclosed or protected as provided in rule 5.102(100).

EXCEPTION 1: Unprotected openings connecting not more than three floors may be permitted provided the building is completely sprinklered.

EXCEPTION 2: Stairs within individual apartments need not be enclosed.

## **661—5.806(100) General provisions.**

**5.806(1) Hazardous areas.** An area used for general storage, boiler or furnace rooms, fuel storage, janitor's closets, maintenance shops, including woodworking and painting area, laundries and kitchens shall be separated from other parts of the building by construction having not less than one-hour fire-resistance rating, and all openings shall be protected with at least 1¾-inch solid core wood doors or equivalent equipped with approved self-closing devices, or such rooms or spaces may be protected by an automatic sprinkler system.

EXCEPTION: A separation shall not be required for such rooms with equipment serving only one dwelling unit.

**5.806(2) Interior finish.**

*a. Corridors, lobbies, and enclosed stairways.* Interior finish in all corridors and lobbies shall be Class A, or Class B will be permitted in a fully sprinklered building, and in enclosed stairways, Class A.

*b. General assembly.* Interior finish in general assembly areas shall be Class A in exit. See Table No. 5-C following 661—5.105(100).

*c. Interior floor finish.* Interior floor finish within corridors and exits shall be Class I or Class II interior floor finish. See Table No. 5-D following 661—5.105(100).

**5.806(3) Windows for rescue.** Every sleeping room below the fourth story should have at least one openable window or exterior door approved for emergency rescue. The units shall be openable from the inside without the use of separate tools.

Any new or replacement windows from sleeping rooms shall have a minimum net clear opening of 5.7 square feet. The minimum net clear opening height dimension shall be 24 inches. The minimum clear opening width dimension shall be 20 inches. Where windows are provided as a means of rescue, they shall have a finished sill height of not more than 44 inches above the floor.

**5.806(4) Protection systems.**

*a. Smoke detectors.* Every dwelling unit within an apartment house, dormitory and every guest room in a hotel used for sleeping purposes shall be provided with approved smoke detectors. In dwelling units, detectors shall be mounted on the ceiling or wall at a point centrally located in the corridor or area giving access to rooms used for sleeping purposes. (For specific requirements see Iowa Code section 100.18.)

*b. Alarm systems.* Every apartment house three stories or more in height or containing more than 15 apartments and every hotel three stories or more in height containing 20 or more guest rooms shall have installed therein an approved automatic or manually operated fire alarm system designed to warn the occupants of the building in the event of fire. The fire alarm system shall be so designed that all occupants of the building may be warned simultaneously.

EXCEPTION: An alarm system need not be installed in buildings when all individual apartments and guest rooms and contiguous attic and crawl spaces are separated from each other and from common areas by at least one-hour fire-resistive occupancy separations and each individual apartment or guest room has an exit direct to a yard or public way.

Stations for operating any manually operated fire alarm system shall be placed immediately adjacent to the telephone switchboard in the building if there is a switchboard and at such other locations as may be required by the authority having jurisdiction.

Preignal alarm systems will not be permitted.

*c. Automatic sprinkler protection.* When automatic sprinkler protection is provided it shall be as required by subrule 5.52(6).

**5.806(5) Portable fire extinguishers.** Approved-type fire extinguishers shall be provided on each floor, so located that they will be accessible to the occupants, and spaced so that no person will have to travel more than 75 feet from any point to reach the nearest extinguisher. Additional extinguishers may be required in areas that constitute a special hazard. Type and number of portable extinguishers shall be determined by the state fire marshal or local fire authority.

**5.806(6) Fire and general equipment.** All fire and life safety equipment or devices shall be regularly and properly maintained in an operable condition at all times in accordance with nationally recognized standards. This includes fire extinguishing equipment, alarm systems, exit facilities, doors and their appurtenances, electric service, heating and ventilation equipment.

All fire protection or extinguishing systems, coverage, spacing and specifications shall also be maintained in accordance with recognized standards at all times and shall be extended, altered or augmented as necessary to maintain and continue protection whenever any building so equipped is altered, remodeled, or added to. All additions, repairs, alterations or servicing shall be made in accordance with recognized standards.

**5.806(7) Storage.** Excessive storage of combustible or flammable materials such as papers, cartons, magazines, paints, and similar materials so as to constitute an unnecessary hazard in the opinion of the authority having jurisdiction shall not be permitted.

These rules are intended to implement Iowa Code chapter 100.

**661—5.807(100) Smoke detectors definition.** “Approved” is defined as being acceptable to the state fire marshal. Any equipment, device or procedure which bears the stamp of approval or meets applicable standards prescribed by an organization of national reputation such as the Underwriters Laboratories, Inc., National Bureau of Standards, Factory Mutual Laboratories, American Society for National Fire Protection Association, American Society of Mechanical Engineers or American Standards Association, which undertakes to test and approve or provide standards for equipment, devices or procedures of the nature prescribed in these regulations shall be deemed acceptable to the state fire marshal.

**661—5.808(100) General requirements.**

**5.808(1)** Approved single station smoke detectors will be acceptable in all areas covered by these regulations, unless other fire warning equipment or materials are required by other standards.

**5.808(2)** Any installation of wiring and equipment shall be in accordance with the latest edition of the National Fire Protection Association Standard No. 70, National Electric Code, and other applicable standards.

**5.808(3)** All devices, combinations of devices, and equipment to be installed in conformity with these regulations shall be approved and used for the purposes for which they are intended.

**5.808(4)** A combination system, such as a household fire warning system whose components may be used in whole or in part, in common with a nonfire emergency signaling system, such as a burglar alarm system or an intercom system, shall not be permitted or approved, except for one- or two-family dwellings.

**5.808(5)** All power supplies shall be sufficient to operate the alarm for at least four continuous minutes.

**5.808(6) Power source.**

*a.* In new buildings and additions constructed after July 1, 1991, required smoke detectors shall receive their primary power from the building wiring when such wiring is served from a commercial source. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection. Smoke detectors may be solely battery operated when installed in existing buildings, or in buildings without commercial power, or in buildings which undergo alterations, repairs or additions regulated by subrule 5.808(2).

*b.* New and replacement smoke detectors installed after May 1, 1993, which receive their primary power from the building wiring shall be equipped with a battery backup.

**5.808(7)** The failure of any nonreliable or short-life component which renders the detector inoperative shall be readily apparent to the occupant of the sleeping unit without the need for a test. Each smoke detector shall detect abnormal quantities of smoke that may occur and shall properly operate in the normal environmental condition.

**5.808(8)** Equipment shall be installed, located and spaced in accordance with the manufacturer’s recommendations.

**5.808(9)** Installed fire warning equipment shall be mounted so as to be supported independently of its attachment to wires.

**5.808(10)** All apparatus shall be restored to normal immediately after each alarm or test.

**5.808(11) Location within dwelling units.**

*a.* In dwelling units, detectors shall be mounted on the ceiling or wall at a point centrally located in the corridor or area giving access to each separate sleeping area. When the dwelling unit has more than one story and in dwellings with basements, a detector shall be installed on each story and in the basement. In dwelling units where a story or basement is split into two or more levels, the smoke detector shall be installed on the upper level, except that when the lower level contains a sleeping area, a detector shall be installed on each level. When sleeping rooms are on an upper level, the detector shall be placed at the ceiling of the upper level in close proximity to the stairway. In dwelling units where the ceiling height of a room open to the hallway serving the bedrooms exceeds that of the hallway by 24 inches or more, smoke detectors shall be installed in the hallway and in the adjacent room. Detectors shall sound an alarm audible in all sleeping areas of the dwelling unit in which they are located.

*b.* Location in efficiency dwelling units and hotels. In efficiency dwelling units, hotel suites and in hotel sleeping rooms, detectors shall be located on the ceiling or wall of the main room or hotel sleeping room. When sleeping rooms within an efficiency dwelling unit or hotel suite are on an upper level, the detector shall be placed at the ceiling of the upper level in close proximity to the stairway. When actuated, the detector shall sound an alarm audible within the sleeping area of the dwelling unit, hotel suite or sleeping room in which it is located.

**661—5.809(100) Smoke detectors—notice and certification of installation.**

**5.809(1) Notice of installation.** Owners of rental residential buildings containing two or more units required by law to install smoke detectors shall notify their local fire department upon installation of required smoke detectors.

**5.809(2) Certification—single-family dwelling units.** A person who files for homestead credit pursuant to Iowa Code chapter 425 shall certify that the single-family dwelling unit for which credit is filed has a smoke detector(s) installed in accordance with 5.808(6) and 5.808(11)“*a.*,” or that such smoke detector(s) will be installed within 30 days of the date of filing for credit.

**5.809(3) Reports to fire marshal.** Each county or city assessor charged with the responsibility of accepting homestead exemption credit applications will obtain certification of smoke detection on a form acceptable to the state fire marshal, signed by the person making application for credit and file a quarterly report with the fire marshal listing the name, address and whether applicant attested to a detector(s) being present at the time of application or that a detector(s) would be installed as required within 30 days.

**661—5.810(100) Smoke detectors—new and existing construction.**

**5.810(1) New construction.** All multiple-unit residential buildings and single-family dwellings which are constructed after July 1, 1991, shall include the installation of smoke detectors meeting the requirements of rule 661—5.807(100) and rule 661—5.808(100).

**5.810(2) Existing construction.** All existing single-family units and multiple-unit residential buildings shall be equipped with smoke detectors as required in 5.808(11)“*a.*”

Rules 5.807(100) to 5.810(100) are intended to implement Iowa Code section 100.18.

## OCCUPANCY CLASSIFICATIONS PER TABLE 8-A

General Occupation Description	Current Occupancy Designation	Complete Occupancy Description
Assembly	A-1	Any assembly building with a stage and occupant load of 1,000 or more in building.
	A-2	Any building or portion of a building having an assembly room with an occupant load of less than 1,000 and a stage.
	A-2.1	Any building or portion of a building having an assembly room with an occupant load of 300 or more without a stage, including such buildings used for educational purposes and not classed as a Group E or Group B, Division 2 Occupancy.
	A-3	Any building or portion of building having an assembly room with an occupant load of 300 or more without a stage, including such buildings used for educational purposes and not classed as a Group E or Group B, Division 2 Occupancy.
	A-4	Stadiums, reviewing stands and amusement park structures not included within other Group A Occupancies.
Business, including offices, factories, mercantile and storage	B-1	Gasoline service stations, storage garages where no repair work is done except exchange of parts and maintenance requiring no open flame, welding or the use of highly flammable liquids.
	B-2	<p>Drinking and dining establishments having an occupant load of less than 50, wholesale and retail stores, office buildings, printing plants, municipal police and fire stations, factories and workshops using material not highly flammable or combustible, storage and sales rooms for combustible goods, paint stores without bulk handling.</p> <p>Buildings or portions of buildings having rooms used for educational purposes, beyond the 12th grade, with less than 50 occupants in any room.</p>
	B-3	Aircraft hangers where no repair work is done except change of parts and maintenance requiring no open flame, welding or use of highly flammable liquids. Open parking garages, heliports.
	B-4	Ice plants, power plants, pumping plants, cold storage, creameries. Factories and workshops using noncombustible and nonexplosive materials. Storage and sales rooms for noncombustible and nonexplosive materials.

Educational	E-1	Any building used for educational purposes through 12th grade by 50 or more persons for more than twelve hours per week or four hours in any one day.
	E-2	Any building used for educational purposes through 12th grade by less than 50 persons for more than twelve hours per week or four hours in one day.
	E-3	Any building used for day-care purposes for more than six children.
Hazardous	H-1	Storage, handling, use or sale of hazardous and highly flammable or explosive materials other than Class I, II, or III-A liquids.
	H-2	Storage and handling of Class I, II and III-A liquids, dry cleaning plants using flammable liquids; paint stores with bulk handling; paint shops and spray painting rooms and shops. The storage or sale of hazardous materials or chemicals or Class I, II and III-A liquids in amounts that do not exceed those set forth in Table No. 9-A is permitted in buildings or portions thereof without classifying such buildings as a Group H Occupancy, provided such chemicals, hazardous materials or liquids are stored and handled in compliance with the provisions of the Fire Code.
	H-3	Woodworking establishments, planing mills, box factories, buffing rooms for tire rebuilding plants and picking rooms; shops, factories or warehouses where loose combustible fibers or dust are manufactured, processed, generated or stored; and pin-refinishing rooms.
	H-4	Repair garages.
	H-5	Aircraft repair hangers.
Institutional	I-1	Nurseries for full-time care of children under the age of six (each accommodating more than five persons). Hospitals, sanitariums, nursing homes with nonambulatory patients and similar buildings (each accommodating more than five persons).
	I-2	Nursing homes for ambulatory patients, homes for children six years of age or over (each accommodating more than five persons).
	I-3	Mental hospitals, mental sanitariums, jails, prisons, reformatories and buildings where personal liberties of inmates are similarly restrained.
		EXCEPTION: Group I Occupancies shall not include buildings used only for private residential purposes for a family group.

Miscellaneous structures	11	M-1	Private garages, carports.
		M-2	Fences over six feet high, tanks and towers.
Residential	12	R-1	Hotels and apartment houses. Convents and monasteries (more than 10 people).
		R-3	Lodging houses (five guests or rooms).

TABLE 8-B: ALLOWABLE FLOOR AREA  
(Per single story)  
AND MAXIMUM HEIGHT OF BUILDINGS

TYPES OF CONSTRUCTION									
I		II			III		IV	V	
F.R.	F.R.	ONE-HOUR	N	ONE-HOUR	N	H.T.	ONE-HOUR	N	

BASIC ALLOWABLE FLOOR AREA FOR BUILDINGS ONE STORY IN HEIGHT  
(In Square Feet)

Unlimited	29,900	13,500	9,100	13,500	9,100	13,500	10,500	6,000
MAXIMUM HEIGHT IN FEET								
Unlimited	160	65	55	65	55	65	50	40
MAXIMUM HEIGHT IN STORIES								
Unlimited	12	4	2	4	2	4	3	2

See Notes 1. - 6.

N — No Requirements for Fire Resistance

F.R. — Fire Resistive

H.T. — Heavy Timber

NOTE 1: Separation on two sides. Where public space, streets, or yards more than twenty feet in width extend along and adjoin the sides of the building, floor areas may be increased at a rate of 1¼ percent for each foot by which the minimum width exceeds twenty feet but the increase shall not exceed 50 percent.

NOTE 2: Separation on three sides. Where public space, streets or yards more than twenty feet in width extend along and enjoin three sides of the building, floor areas may be increased at a rate of 2½ percent for each foot by which the minimum width exceeds twenty feet, but the increase shall not exceed 100 percent.

NOTE 3: Separation on all sides. Where public space, streets or yards more than twenty feet in width extend on all sides of a building and enjoin the entire perimeter, floor areas may be increased at a rate of 5 percent for each foot by which the minimum width exceeds twenty feet. Such increases shall not exceed 100 percent.

NOTE 4: Areas of buildings over one story. The total combined floor area for multistory buildings may be twice that permitted by Table 8-B for one-story buildings, and the floor area of any single story shall not exceed that permitted for a one-story building.

NOTE 5: Automatic sprinkler system. The areas specified in Table 8-B may be tripled in one-story buildings and doubled in buildings of more than one story if the building is provided with an approved automatic sprinkler system throughout. The area increases permitted for installing an approved automatic sprinkler system may be compounded with that specified in Notes 1, 2, and 3.

NOTE 6: The area increases permitted in Note 5 shall not apply when automatic sprinkler systems are installed under the following provisions:

- a. An increase in allowable number of stories.
- b. Substitution for one-hour fire-resistive construction.
- c. Atriums.

**TABLE 8-C—REQUIRED SEPARATION  
IN BUILDINGS OF MIXED OCCUPANCY  
(In Hours)**

	A-1	A-2	A-2.1	A-3	A-4	B-1	B-2	B-3	B-4	E	H-1	H-2	H-3	H-4,5	I	M <sup>2</sup>	R-1	R-3
I	3	3	3	3	3	4	2	4	4	1	NP <sup>3</sup>	4	4	4	—	1	1	1
R-1	1	1	1	1	1	3 <sup>1</sup>	1	1	1	1	4	3	3	3	1	1	—	N
R-3	1	1	1	1	1	1	N	N	N	1	4	3	3	3	1	1	N	—

<sup>1</sup>The three-hour separation may be reduced to one hour where the Group B, Division 1 Occupancy, is limited to the storage of passenger motor vehicles having a capacity of not more than nine persons per vehicle and provided no repair or fueling is done and the area does not exceed 3,000 square feet in a building.

<sup>2</sup>In the one-hour occupancy separation between a Group R, Division 3 and M Occupancy, the separation may be limited to the installation of materials approved for one-hour fire-resistive construction on the garage side and a self-closing, tight fitting solid wood door in lieu of a one-hour fire assembly. Fire dampers shall not be required in ducts piercing this separation for ducts constructed of not less than No. 26 gauge galvanized steel.

<sup>3</sup>Not permitted.



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#### BED AND BREAKFAST INNS

### **661—5.820(100,137C) Bed and breakfast inns.**

**5.820(1) Appliances.** Heating, cooking and gas and electrical equipment and appliances must conform with nationally recognized codes and standards and be installed and maintained in accordance with manufacturer's recommendations. If the building has an operable solid fuel fireplace, all components must be cleaned and maintained in accordance with NFPA 211, 2000 edition.

**5.820(2) Smoke detectors.** Each bed and breakfast inn shall have an operable smoke detector in each guest room, at the top of each stairwell, and at intervals not to exceed 30 feet in each exit corridor. Detectors shall be installed and maintained in accordance with NFPA 72, 1999 edition.

*a. Existing facilities.* In bed and breakfast inns which begin operation or are constructed or remodeled prior to February 1, 2002, required smoke detectors may be battery operated.

*b. New facilities.* Each bed and breakfast inn which begins operation or is constructed or remodeled on or after February 1, 2002, shall be equipped with a system of interconnected smoke detectors with detectors at the top of each stairwell and at intervals not to exceed 30 feet in each exit corridor. These smoke detectors shall receive primary power from the building's electrical wiring and shall include battery backup. Each guest room shall be equipped with a smoke detector which may be a single station detector that complies with subrule 5.807(6).

**5.820(3) Emergency lighting.** Each bed and breakfast inn must be equipped with approved emergency lighting so located and directed in a manner that will illuminate the routes of travel from each guest-occupied room to the outside of the building.

**5.820(4) Windows.** Each bed and breakfast inn guest sleeping room must have at least one outside window that is openable without the use of tools or special knowledge. The window must be large enough that, when open and without breaking glass, it will permit the emergency egress of guests.

**5.820(5) Exits.** Each story that has one or more guest sleeping rooms must have two means of exit that are remote from each other and so arranged and constructed as to minimize any possibility that both may be blocked by any one fire or other emergency.

**5.820(6) Exit door markings.** Exit doors must be marked in accordance with 661—5.63(100), except internally illuminated exit signs are not required if the door is clearly illuminated by emergency lighting.

**5.820(7) Fire extinguishers.** Fire extinguishers must be installed and maintained in accordance with National Fire Protection Association Standard Number 10, 1998 edition.

**5.820(8) Smoking prohibited.** Smoking is not permitted in any sleeping room, and rooms shall be posted with plainly visible signs so stating.

**5.820(9) Additional prohibitions.** Candles, lamps with power sources other than electricity or solid fuel fireplaces shall not be used in guest sleeping rooms.

\*Effective date of amendments to 5.800 to 5.810 and 5.820 delayed 70 days by the Administrative Rules Review Committee at its meeting held April 6, 2001. These amendments were published in the March 21, 2001, Iowa Administrative Bulletin as ARC 0566B. [See Notice ARC 9970A, IAB 7/12/00.] At its meeting held June 5, 2001, the Committee voted to delay the effective date until adjournment of the 2002 Session of the General Assembly. At its meeting held February 8, 2002, the Committee voted to lift the delay, effective February 9, 2002.

**5.820(10) Directions.** Each bed and breakfast inn shall have clearly displayed in each guest bedroom printed directions and a diagram for emergency evacuation procedures. These directions must include the primary route to the outside and how to use the emergency egress window in the event the primary route cannot be traversed.

This rule is intended to implement Iowa Code section 137C.35.

**661—5.821 to 5.849** Reserved.

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#### EXPLOSIVE MATERIALS

**661—5.850(101A) Rules generally.** The code, “NFPA 495 Manufacture, Transportation, Storage, and Use of Explosive Materials,” 1992 edition, as published by the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269, with the exception of chapter 2 and references to other specific standards contained in chapter 2, is hereby adopted by reference as the rules governing the manufacture, transportation, storage, and use of explosive materials in the state of Iowa.

This rule is intended to implement Iowa Code section 101A.5.

**661—5.851(101A) Inventory.** Inventory shall be of such that it shows amount of explosive material on hand, quantities dispensed and to whom, and quantity on hand at the end of each calendar working day. Anytime a shortage appears it shall be reported immediately to the chief of police or sheriff having jurisdiction, who in turn shall cause a federal form 4712 (Department of Treasury, Internal Revenue Service) to be implemented, a copy of which shall be sent to the Iowa Department of Public Safety, attention of state fire marshal.

This rule is intended to implement Iowa Code section 101A.5.

**661—5.852 to 5.864** Reserved.

**661—5.865(101A,252J) Grounds for suspension, revocation, or denial of commercial explosives licenses.** The department may refuse to issue a commercial license for the manufacture, importation, distribution, sale, and commercial use of explosives sought pursuant to Iowa Code section 101A.2 or may suspend or revoke such a license for any of the following reasons:

1. Finding that the applicant or licensee is not of good moral character and sound judgment.
2. Finding that the applicant or licensee lacks sufficient knowledge of the use, handling, and storage of explosive materials to protect the public safety.
3. Finding that the applicant or licensee falsified information in the current or any previous license application.
4. Proof that the licensee or applicant has violated any provision of Iowa Code chapter 101A or these rules.
5. Receipt by the department of a certificate of noncompliance from the child support recovery unit of the Iowa department of human services, pursuant to the procedures set forth in Iowa Code Supplement chapter 252J.

\*Effective date of amendments to 5.800 to 5.810 and 5.820 delayed 70 days by the Administrative Rules Review Committee at its meeting held April 6, 2001. These amendments were published in the March 21, 2001, Iowa Administrative Bulletin as ARC 0566B. [See Notice ARC 9970A, IAB 7/12/00.] At its meeting held June 5, 2001, the Committee voted to delay the effective date until adjournment of the 2002 Session of the General Assembly.

At its meeting held February 8, 2002, the Committee voted to lift the delay, effective February 9, 2002.

An applicant or licensee whose application is denied or a licensee whose license is suspended or revoked other than because of receipt of a certificate of noncompliance from the child support recovery unit may appeal that action pursuant to 661—Chapter 10. Applicants or licensees whose licenses are denied, suspended, or revoked because of receipt by the department of a certificate of noncompliance issued by the child support recovery unit shall be subject to the provisions of rule 661—5.866(252J) and procedures specified in 661—Chapter 10 for contesting department actions shall not apply in these cases.

This rule is intended to implement Iowa Code section 101A.2 and Iowa Code Supplement chapter 252J.

**661—5.866(252J) Child support collection procedures.** The following procedures shall apply to actions taken by the department on a certificate of noncompliance received from the Iowa department of human services pursuant to Iowa Code Supplement chapter 252J:

**5.866(1)** The notice required by Iowa Code Supplement section 252J.8 shall be served upon the applicant or licensee by restricted certified mail, return receipt requested, or personal service in accordance with Rules of Civil Procedure 56.1. Alternatively, the licensee, identification card holder, or applicant may accept service personally or through authorized counsel.

**5.866(2)** The effective date of revocation or suspension of a license, or denial of the issuance or renewal of a license, as specified in the notice required by Iowa Code Supplement section 252J.8, shall be 60 days following service upon the licensee or applicant.

**5.866(3)** Licensees and applicants for licenses shall keep the department informed of all court actions and all child support recovery unit actions taken under or in connection with Iowa Code Supplement chapter 252J and shall provide the department with copies, within seven days of filing or issuance, of all applications filed with the district court pursuant to Iowa Code Supplement section 252J.9, all court orders entered in such actions, and withdrawals of certificates of noncompliance by the child support recovery unit.

**5.866(4)** All departmental fees for applications, license renewal or reinstatement must be paid by the licensee or applicant before a license will be issued, renewed, or reinstated after the department has denied the issuance or renewal of a license, or has suspended or revoked a license pursuant to Iowa Code Supplement chapter 252J.

**5.866(5)** In the event a licensee or applicant files a timely district court action following service of a department notice pursuant to Iowa Code Supplement sections 252J.8 and 252J.9, the department shall continue with the intended action described in the notice upon the receipt of a court order lifting the stay, dismissing the action, or otherwise directing the department to proceed. For the purpose of determining the effective date of revocation or suspension or denial of the issuance or renewal of a license, the department shall count the number of days before the action was filed and the number of days after the action was disposed of by the court.

This rule is intended to implement Iowa Code chapter 252J.

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**661—5.867 to 5.899** Reserved.

HOSPITALS AND LICENSED HEALTH CARE FACILITIES  
[Prior to 4/2/03, see rules 661—5.550(100) to 661—5.603(100)]

**661—5.900(100) Definitions.** The following definitions apply to rules 661—5.900(100) through 661—5.925(100).

“*Ambulatory health care facility*” means a facility or portion thereof used to provide services or treatment that provides, on an outpatient basis, treatment for one or more patients that renders the patients incapable of taking action for self-preservation under emergency conditions without the assistance of others; or provides, on an outpatient basis, anesthesia that renders the patient incapable of taking action for self-preservation under emergency conditions without the assistance of others.

“*Existing*” means that a facility (1) has been in continuous operation under its current classification of occupancy since before September 11, 2003, and has not undergone major renovation or remodeling on or after September 11, 2003, or (2) received plan approval for initial construction or for its most recent major renovation or remodeling project, if any, from the building code bureau of the fire marshal division prior to March 11, 2003.

“*Hospice*” means a facility licensed or seeking licensure pursuant to Iowa Code section 135J.2.

“*Hospital*” means a facility licensed or seeking licensure pursuant to Iowa Code chapter 135B.

“*Intermediate care facility for the mentally retarded*” means a facility licensed or seeking licensure pursuant to Iowa Code section 135C.2(3)“c.”

“*New*” means that a facility (1) commenced continuous operation under its current classification of occupancy on or after September 11, 2003, (2) has undergone major renovation or remodeling on or after September 11, 2003, or (3) received plan approval from the building code bureau of the fire marshal division for the initial construction of the facility or the most recent major renovation of the facility on or after March 11, 2003.

“*NFPA*” means the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269. References to the form “NFPA xx,” where “xx” is a number, refer to the NFPA standard or pamphlet of the corresponding number.

“*Nursing facility*” means a facility licensed or seeking licensure pursuant to Iowa Code section 135C.6, including a nursing facility for intermediate care or a nursing facility for skilled care.

**661—5.901 to 5.904** Reserved.

**661—5.905(100) Hospitals.**

**5.905(1) *New hospitals.*** NFPA 101, Life Safety Code, 2000 edition, Chapter 18, is adopted by reference as the fire safety rules for new hospitals.

**5.905(2) *Existing hospitals.*** NFPA 101, Life Safety Code, 2000 edition, Chapter 19, is adopted by reference as the fire safety rules for existing hospitals, with the following amendments:

Effective March 13, 2006, Section 19.3.6.3.2, Exception No. 2, is deleted.

Section 19.2.9 is not effective prior to March 13, 2006.

EXCEPTION 1: Prior to September 11, 2003, existing hospitals may comply with NFPA 101, Life Safety Code, 1985 edition, Chapter 13, in lieu of NFPA 101, Life Safety Code, 2000 edition, Chapter 19.

EXCEPTION 2: Prior to September 11, 2003, any hospital that on or before May 9, 1988, complied with the relevant provisions of NFPA 101, Life Safety Code, 1981 edition, may continue to comply with those provisions in lieu of NFPA 101, Life Safety Code, 2000 edition, Chapter 19.

EXCEPTION 3: Prior to September 11, 2003, any hospital that on or before November 26, 1982, complied with the relevant provisions of NFPA 101, Life Safety Code, 1967 edition, may continue to comply with those provisions in lieu of NFPA 101, Life Safety Code, 2000 edition, Chapter 19.

**661—5.906 to 5.909** Reserved.

**661—5.910(100) Nursing facilities and hospices.**

**5.910(1)** *New nursing facilities and hospices.* NFPA 101, Life Safety Code, 2000 edition, Chapter 18, is adopted by reference as the fire safety rules for new nursing facilities and hospices that provide inpatient care directly.

**5.910(2)** *Existing nursing facilities and hospices.* NFPA 101, Life Safety Code, 2000 edition, Chapter 19, is adopted by reference as the fire safety rules for existing nursing facilities and hospices that provide inpatient care directly, with the following amendments:

Effective March 13, 2006, Section 19.3.6.3.2, Exception No. 2, is deleted.

Section 19.2.9 is not effective prior to March 13, 2006.

EXCEPTION 1: Prior to September 11, 2003, existing nursing facilities or hospices that provide inpatient care directly may comply with the provisions of NFPA 101, Life Safety Code, 1985 edition, Chapter 13, in lieu of NFPA 101, Life Safety Code, 2000 edition, Chapter 19.

EXCEPTION 2: Prior to September 11, 2003, any existing nursing facility or hospice that provides inpatient care directly, that on or before May 9, 1988, complied with the relevant provisions of NFPA 101, Life Safety Code, 1981 edition, may continue to comply with those provisions in lieu of NFPA 101, Life Safety Code, 2000 edition, Chapter 19.

EXCEPTION 3: Prior to September 11, 2003, any existing nursing facility or hospice that provides inpatient care directly, that on or before November 26, 1982, complied with the relevant provisions of NFPA 101, Life Safety Code, 1967 edition, or NFPA 101, Life Safety Code, 1973 edition, may continue to comply with those provisions in lieu of NFPA 101, Life Safety Code, 2000 edition, Chapter 19.

**661—5.911 to 5.914** Reserved.

**661—5.915(100) Intermediate care facilities for the mentally retarded.**

**5.915(1)** *New intermediate care facilities for the mentally retarded.* New intermediate care facilities for the mentally retarded shall comply with the provisions of one of the following:

*a.* NFPA 101, Life Safety Code, 1985 edition, Chapter 12.

*b.* NFPA 101, Life Safety Code, 1985 edition, Chapter 21.

NOTE 1: Compliance with the provisions of either Chapter 12 or Chapter 21 of NFPA 101, Life Safety Code, 1985 edition, is required by Iowa Code section 135C.2(3)“c.”

NOTE 2: As of September 11, 2003, new intermediate care facilities for the mentally retarded will be required to comply with the provisions of either Chapter 18 or Chapter 32 of NFPA 101, Life Safety Code, 2000 edition, in order to be eligible for certification for reimbursement under the federal Medicare and Medicaid programs.

**5.915(2)** *Existing intermediate care facilities for the mentally retarded.* Existing intermediate care facilities for the mentally retarded shall comply with the provisions of one of the following:

*a.* NFPA 101, Life Safety Code, 1985 edition, Chapter 13.

*b.* NFPA 101, Life Safety Code, 1985 edition, Chapter 21.

NOTE 1: Compliance with either Chapter 13 or Chapter 21 of NFPA 101, Life Safety Code, 1985 edition, is required by Iowa Code section 135C.2(3)“c.”

NOTE 2: As of September 11, 2003, existing intermediate care facilities for the mentally retarded will be required to comply with the provisions of either Chapter 19 or Chapter 33 of NFPA 101, Life Safety Code, 2000 edition, in order to be eligible for certification for reimbursement under the federal Medicare and Medicaid programs.

**661—5.916(100) Intermediate care facilities for persons with mental illness (ICF/PMI).** All health care facilities which are licensed by the Iowa department of inspections and appeals as intermediate care facilities for persons with mental illness (ICF/PMI) shall comply with the applicable provisions for limited care facilities, Chapter 12, and use condition IV, Chapter 14, Life Safety Code, 1991 edition, as published by the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

EXCEPTION 1: An intermediate care facility for persons with mental illness (ICF/PMI) that begins operation on or after September 11, 2003, or that received plan approval for initial construction or for its most recent major renovation or remodeling project on or after March 11, 2003, may comply with the requirements established in NFPA 101, Life Safety Code, 2000 edition, Chapter 32, in lieu of compliance with the requirements established in rule 661—5.916(100).

EXCEPTION 2: An intermediate care facility for persons with mental illness (ICF/PMI) that begins operation prior to September 11, 2003, or that received plan approval for initial construction or for its most recent major renovation or remodeling project prior to March 11, 2003, may comply with the requirements established in NFPA 101, Life Safety Code, 2000 edition, Chapter 33, in lieu of compliance with the requirements established in rule 661—5.916(100).

**661—5.917 to 5.919** Reserved.

**661—5.920(100) Ambulatory health care facilities.**

**5.920(1) New ambulatory health care facilities.** NFPA 101, Life Safety Code, 2000 edition, Chapter 20, is adopted by reference as the fire safety rules for new ambulatory health care facilities.

**5.920(2) Existing ambulatory health care facilities.** NFPA 101, Life Safety Code, 2000 edition, Chapter 21, is adopted by reference as the fire safety rules for existing ambulatory health care facilities, with the following amendments:

Section 21.2.9.1 is not effective prior to March 13, 2006.

EXCEPTION 1: Prior to September 11, 2003, existing ambulatory health care facilities may comply with NFPA 101, Life Safety Code, 1985 edition, Section 13-6, in lieu of NFPA 101, Life Safety Code, 2000 edition, Chapter 21.

EXCEPTION 2: Prior to September 11, 2003, an existing ambulatory health care facility which on or prior to May 9, 1988, complied with the relevant requirements of NFPA 101, Life Safety Code, 1981 edition, may continue to comply with those requirements in lieu of compliance with NFPA 101, Life Safety Code, 2000 edition, Chapter 21.

**661—5.921 to 5.924** Reserved.

**661—5.925(100) Religious nonmedical health care institutions.**

**5.925(1) New religious nonmedical health care institutions.** NFPA 101, Life Safety Code, 2000 edition, Chapter 18, is adopted by reference as the fire safety rules for new religious nonmedical health care institutions.

**5.925(2) Existing religious nonmedical health care institutions.** NFPA 101, Life Safety Code, 2000 edition, Chapter 19, is adopted by reference as the fire safety rules for existing religious nonmedical health care institutions, with the following amendments:

Effective March 13, 2003, Section 19.3.6.3.2, Exception No. 2, is deleted.

Section 19.2.9 is not effective prior to March 13, 2006.

EXCEPTION: Prior to September 11, 2003, existing religious nonmedical health care institutions may comply with the provisions for existing health care facilities of NFPA 101, Life Safety Code, 1997 edition, in lieu of compliance with the provisions of NFPA 101, Life Safety Code, 2000 edition, Chapter 19.

Rules 661—5.900(100) to 661—5.925(100) are intended to implement Iowa Code section 100.35.

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**661—5.926 to 5.999** Reserved.

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\*Editor's Note:

Effective date of 5.300, 5.301(6), 5.301(7), 5.302, 5.304(2) "c"(2), 5.304(3), 5.304(4), 5.305, 5.350 and 5.351 delayed by the Administrative Rules Review Committee 70 days.

Subrule 5.305(3) which was delayed 70 days from November 8, 1979, is renumbered and amended as 5.305(2) to be effective January 17, 1980.

Effective date of 5.400 and 5.450 to 5.452 delayed by the Administrative Rules Review Committee 70 days. These amendments published in IAC 10/3/79, ARC 0596.

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\*\*Effective date of 661—5.620(100,135C), introductory paragraph, and subrule 5.620(1) delayed 70 days by the Administrative Rules Review Committee at its meeting held February 8, 1999.

\*\*\*Effective date of amendments to 5.800 to 5.810 and 5.820 delayed 70 days by the Administrative Rules Review Committee at its meeting held April 6, 2001. These amendments were published in the March 21, 2001, Iowa Administrative Bulletin as ARC 0566B. [See Notice ARC 9970A, IAB 7/12/00.] At its meeting held June 5, 2001, the Committee voted to delay the effective date until adjournment of the 2002 Session of the General Assembly.

At its meeting held February 8, 2002, the Committee voted to lift the delay effective February 9, 2002.