

ICC Supplement Provisions Used in the Virginia Uniform Statewide Building Code—2000 Edition

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Note: The full code text for 124.1.1 through 124.1.8 and 124.2.

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302.3.3 Separated uses. Each portion of the building shall be individually classified as to use and shall be completely separated from adjacent areas by fire barrier walls or horizontal assemblies or both having a fire-resistance rating determined in accordance with Table 302.3.3 for uses being separated. Each fire area shall comply with the code based on the use of that space. Each fire area shall comply with the height limitations based on the use of that space and the type of construction classification. In each story, the building area shall be such that the sum of the ratios of the floor area of each use divided by the allowable area for each use shall not exceed 1.

Exception. Except for Group H and I-2 areas, where the building is equipped throughout with an automatic sprinkler system, installed in accordance with Section 903.3.1.1 the fire-resistance ratings in Table 302.3.3 shall be reduced by 1 hour but to not less than 1 hour and to not less than that required for floor construction according to the type of construction.

The private garage shall be separated from the dwelling unit and its attic area by means of minimum 1/2-inch (13 mm) gypsum board applied to the garage side. Garages beneath habitable rooms shall be separated from all habitable rooms above by not less than 5/8-inch Type X gypsum board or equivalent. Door openings between the garage and the dwelling unit shall be equipped with either solid wood doors not less than 1 3/8 inches (35 mm) thick, solid or honeycomb core steel doors not less than 1 3/8 inches (35 mm) thick or doors in compliance with Section 714.2.3. Openings from a private garage directly into a room used for sleeping purposes shall not be permitted.

308.4.3 Condition 3. This occupancy condition shall include buildings in which free movement is allowed within individual smoke compartments, such as within a residential unit comprised of individual sleeping units and group activity spaces, where egress is impeded by remote-controlled release of means of egress from such a smoke compartment to another smoke compartment.

308.4.4 Condition 4. This occupancy condition shall include buildings in which free movement is restricted from an occupied space. Remote-controlled release is provided to permit movement from sleeping units, activity spaces and other occupied areas within the smoke compartment to other smoke compartments.

308.4.5 Condition 5. This occupancy condition shall include buildings in which free movement is restricted from an occupied space. Staff-controlled manual release is provided to permit movement from sleeping units, activity spaces and other occupied areas within the smoke compartment to other smoke compartments.

310.1 Residential Group “R.” Residential Group R includes, among others, the use of a building or structure, or a portion

thereof, for sleeping purposes when not classed as an Institutional Group I. Residential occupancies shall include the following:

R-1 Residential occupancies where the occupants are primarily transient in nature, including:

- Boarding houses (transient)
- Hotels (transient)
- Motels (transient)

R-2 Residential occupancies containing sleeping units or more than two dwelling units where the occupants are primarily permanent in nature, including:

- Apartment houses
- Boarding houses (not transient)
- Convents
- Dormitories
- Fraternities and sororities
- Hotels (nontransient)
- Monasteries
- Motels (nontransient)
- Vacation timeshare properties

R-3 Residential occupancies where the occupants are primarily permanent in nature and not classified as R-1, R-2, R-4 or I and where buildings do not contain more than two dwelling units, as applicable in Section 101.2 or adult and child care facilities, that provide accommodations for five or fewer persons of any age for less than 24 hours. Adult and child care facilities that are within a single family home are permitted to comply with the *International Residential Code* in accordance with Section 101.2.

R-4 Residential occupancies shall include buildings arranged for occupancy as Residential Care/Assisted Living Facilities including more than five but not more than 16 occupants, excluding staff.

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3 except as otherwise provided for in this code or shall comply with the *International Residential Code* in accordance with Section 101.2.

310.3 Required dwelling unit and sleeping unit separation. Walls and floors separating dwelling units in the same building, or sleeping units in Group R-1 hotel occupancies, shall be fire partitions or horizontal assemblies as required by Sections 708 and 710.

402.7.2.1 Openings between anchor building and mall. Except for the separation between Group R-1 sleeping units and the mall, openings between anchor buildings of Types IA, IB, IIA and IIB construction and the mall need not be protected.

407.2.1 Spaces of unlimited area. Waiting areas and similar spaces constructed as required for corridors shall be permit-

ted to be open to a corridor, only where all of the following criteria are met:

1. The spaces are not occupied for patient sleeping units, treatment rooms, hazardous or incidental use areas as defined in Section 302.1.1.
2. The open space is protected by an automatic fire detection system installed in accordance with Section 907.
3. The corridors onto which the spaces open, in the same smoke compartment, are protected by an automatic fire detection system installed in accordance with Section 907, or the smoke compartment in which the spaces are located is equipped throughout with quick-response sprinklers in accordance with Section 903.3.2.
4. The space is arranged so as not to obstruct access to the required exits.

708.1 General. Wall assemblies installed as required by Sections 310.3, 402.7.2 and 1004.3.2.1 shall comply with this section. These include:

1. Walls separating dwelling units.
2. Walls separating sleeping units in occupancies in Group R-1.
3. Walls separating tenant spaces in covered mall buildings.
4. Corridor walls.

708.3 Fire-resistance rating. The fire-resistance rating of the walls shall be 1 hour.

Exceptions:

1. Corridor walls as permitted by Table 1004.3.2.1.
2. Dwelling unit and sleeping unit separations in buildings of Types IIB, IIIB and VB construction shall have fire-resistance ratings of not less than ½ hour in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

708.4 Continuity. Fire partitions shall extend from the top of the floor assembly below to the underside of the floor or roof slab or deck above or to the fire-resistance-rated floor/ceiling or roof/ceiling assembly above, and shall be securely attached thereto. If the partitions are not continuous to the deck, and where constructed of combustible construction, the space between the ceiling and the deck above shall be fireblocked or draftstopped in accordance with Sections 716.2.1 and 716.3.1 at the partition line. The supporting construction shall be protected to afford the required fire-resistance rating of the wall supported, except for tenant and sleeping unit separation walls and exit access corridor walls in buildings of Types IIB, IIIB, and VB construction.

Exceptions: (No change)

710.3 Fire-resistance rating. Unless required elsewhere in the code, smoke partitions are not required to have a fire-resistance rating.

Chapter 35. Referenced Standards.

NFPA 13—99 Installation of Sprinkler Systems 704.12, 707.2, 903.3.1.1, 903.3.2, 903.3.5.1.1, 904.11, 907.8, 1621.3.10.1, 3104.5, 3104.9

NFPA 13D—99 Installation of Sprinkler Systems in One- and Two-family Dwellings and Manufactured Homes 903.1.2, 903.3.1.3, 903.3.5.1.1

NFPA 13R—99 Installation of Sprinkler Systems in Residential Occupancies Up to and Including Four Stories in Height 903.1.2, 903.3.1.2, 903.3.5.1.1, 903.3.5.1.2, 903.4

NFPA 72—99 National Fire Alarm Code 505.4, 901.6, 903.4.1, 904.3.5, 907.2, 907.2.1, 907.2.1.1, 907.2.10, 907.2.10.4, 907.2.11.2, 907.2.11.3, 907.2.12.2.3, 907.2.12.3, 907.4, 907.5, 907.9.2, 907.10, 907.14, 907.16, 907.17, 909.12, 909.12.3, 911.1, 3006.5

202 Definitions.

ACCESSIBLE UNIT. A dwelling unit or sleeping unit that complies with this code and Chapters 1 through 9 of ICC A117.1.

DWELLING UNIT OR SLEEPING UNIT, TYPE A. A dwelling unit or sleeping unit designed and constructed for accessibility in accordance with ICC A117.1.

DWELLING UNIT OR SLEEPING UNIT, TYPE B. A dwelling unit or sleeping unit designed and constructed for accessibility in accordance with ICC A117.1, consistent with the design and construction requirements of the federal Fair Housing Act.

Delete the definition of “Dwelling Unit, Ground Floor”:

DWELLING UNIT OR SLEEPING UNIT, MULTI-STORY. A dwelling unit or sleeping unit with habitable space located on more than one story.

INTENDED TO BE OCCUPIED AS A RESIDENCE. This refers to a dwelling unit or sleeping unit that can or will be used all or part of the time as the occupant’s place of abode.

SLEEPING UNIT. A room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. Such rooms and spaces that are also part of a dwelling unit are not sleeping units.

TECHNICALLY INFEASIBLE. An alteration of a building or a facility that has little likelihood of being accomplished because the existing structural conditions require the removal or alteration of a load-bearing member that is an essential part of the structural frame, or because other existing physical or site constraints prohibit modification or addition of elements, spaces or features which are in full and strict compliance with the minimum requirements for new construction and which are necessary to provide accessibility.

407.5 Automatic sprinkler system. Smoke compartments containing patient sleeping units shall be equipped throughout with an automatic fire sprinkler system in accordance with Section 903.3.1.1. The smoke compartments shall be equipped with approved quick-response or residential sprinklers in accordance with Section 903.3.2.

407.6 Automatic fire detection. Corridors in nursing homes (both intermediate-care and skilled nursing facilities), detoxification facilities and spaces permitted to be open to corridors

by Section 407.2 shall be protected by an automatic fire detection system installed in accordance with Section 907.

Exceptions:

1. Corridor smoke detection is not required where patient sleeping units are provided with smoke detectors that comply with UL 268. Such detectors shall provide a visual display on the corridor side of each patient sleeping unit and an audible and visual alarm at the nursing station attending each unit.
2. Corridor smoke detection is not required where patient sleeping unit doors are equipped with automatic door-closing devices with integral smoke detectors on the unit sides installed in accordance with their listing, provided that the integral detectors perform the required alerting function.

408.3.1 Door width. Doors to resident sleeping units shall have a clear width of not less than 28 inches (711 mm).

714.2.7 Door closing. Fire doors shall be self-closing or automatic-closing in accordance with this section.

Exception: Fire doors located in common walls separating sleeping units in Group R-1 shall be permitted without automatic-closing or self-closing devices.

716.3.2 Groups R-1, R-2, R-3 and R-4. Draftstopping shall be provided in floor/ceiling spaces in Group R-1 buildings, in Group R-2 buildings as applicable in Section 101.2 with three or more dwelling units, in Group R-3 buildings as applicable in Section 101.2 with two dwelling units and in Group R-4 buildings. Draftstopping shall be located above and in line with the dwelling unit and sleeping unit separations.

Exceptions:

1. Draftstopping is not required in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
2. Draftstopping is not required in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.2, provided that automatic sprinklers are also installed in the combustible concealed spaces.

716.4.2 Groups R-1 and R-2. Draftstopping shall be provided in attics, mansards, overhangs or other concealed roof spaces of Group R-2 buildings with three or more dwelling units and in all Group R-1 buildings. Draftstopping shall be installed above, and in line with, sleeping unit and dwelling unit separation walls that do not extend to the underside of the roof sheathing above.

Exceptions:

1. Where corridor walls provide a sleeping unit or dwelling unit separation, draftstopping shall only be required above one of the corridor walls.
2. Draftstopping is not required in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
3. In occupancies in Group R-2 that do not exceed four stories in height, the attic space shall be subdivided by

draftstops into areas not exceeding 3,000 square feet (279 m²) or above every two dwelling units, whichever is smaller.

4. Draftstopping is not required in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.2, provided that automatic sprinklers are also installed in the combustible concealed spaces.

903.3.2 Quick-response and residential sprinklers. Where automatic sprinkler systems are required by this code, quick-response or residential automatic sprinklers shall be installed in the following areas in accordance with Section 903.3.1 and their listings:

1. Throughout all spaces within a smoke compartment containing patient sleeping units in Group I-2 in accordance with this code.
2. Dwelling units, and sleeping units in Group R and I-1 occupancies.
3. Light-hazard occupancies as defined in NFPA 13.

907.2.6.1 Group I-2. Corridors in nursing homes (both intermediate-care and skilled nursing facilities), detoxification facilities and spaces open to the corridors shall be equipped with an automatic fire detection system.

Exceptions:

1. Corridor smoke detection is not required where patient sleeping units are provided with smoke detectors that comply with UL 268. Such detectors shall provide a visual display on the corridor side of each patient sleeping unit and shall provide an audible and visual alarm at the nursing station attending each unit.
2. Corridor smoke detection is not required where patient sleeping unit doors are equipped with automatic door-closing devices with integral smoke detectors on the unit sides installed in accordance with their listing, provided that the integral detectors perform the required alerting function.

907.2.6.2.3 Smoke detectors (Group I-3). An approved automatic smoke detection system shall be installed throughout resident housing areas, including sleeping areas and contiguous day rooms, group activity spaces and other common spaces normally accessible to residents.

Exceptions:

1. Other approved smoke-detection arrangements providing equivalent protection including, but not limited to, placing detectors in exhaust ducts from cells or behind protective guards listed for the purpose are allowed when necessary to prevent damage or tampering.
2. Sleeping units in Use Conditions II and III.
3. Smoke detectors are not required in sleeping units with four or fewer occupants in smoke compartments that are equipped throughout with an approved automatic sprinkler system.

907.2.8 Group R-1. A manual fire alarm system and an automatic fire detection system shall be installed in Group R-1 occupancies.

Exceptions:

1. A manual fire alarm system is not required in buildings not over two stories in height where all individual sleeping units and contiguous attic and crawl spaces are separated from each other and public or common areas by at least 1-hour fire partitions and each individual sleeping unit has an exit directly to a public way, exit court or yard.
2. An automatic fire detection system is not required in buildings that do not have interior corridors serving sleeping units and where sleeping units have a means of egress door opening directly to an exterior exit access that leads directly to the exits.
3. A separate fire alarm system is not required in buildings that are equipped throughout with an approved supervised automatic sprinkler system and which have a local fire alarm that meets the notification requirements of Section 907.9.2.

907.2.8.1 Fire detection system. System smoke detectors are not required in sleeping units provided that the single-station smoke alarms required by Section 907.2.10 are connected to the emergency electrical system and are annunciated by sleeping unit at a constantly attended location from which the fire alarm system is capable of being manually activated.

907.2.10.1.1 Group R-1. Single- or multiple-station smoke alarms shall be installed in all of the following locations in Group R-1:

1. In sleeping areas.
2. In every room in the path of the means of egress from the sleeping area to the door leading from the sleeping unit.
3. In each story within the sleeping unit, including basements. For sleeping units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

907.2.10.2 Power source. In new construction, required smoke alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection.

Exception: Smoke alarms are not required to be equipped with battery backup in Group R-1 where they are connected to an emergency electrical system.

907.2.10.3 Interconnection. Where more than one smoke alarm is required to be installed within an individual dwelling unit in Group R-2, R-3 or R-4, or within an individual sleeping unit in Group R-1, the smoke alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit. The alarm shall be clearly audible

in all bedrooms over background noise levels with all intervening doors closed.

907.2.12.2 Emergency voice/alarm communication system (high-rise buildings). The operation of any automatic fire detector, sprinkler water-flow device or manual fire alarm box shall automatically sound an alert tone followed by voice instructions giving approved information and directions on a general or selective basis to the following terminal areas in accordance with the *International Fire Code*.

1. Elevator lobbies.
2. Corridors.
3. Rooms and tenant spaces exceeding 1,000 square feet (93 m²) in area.
4. Dwelling units in Group R-2 occupancies.
5. Sleeping units in Group R-1 occupancies.
6. Areas of refuge as defined in this code.

Exception: In Group I-1 and I-2 occupancies, the alarm shall sound in a constantly attended area and a general occupant notification shall be broadcast over the overhead page.

907.9.1.2 Groups I-1 and R-1. Group I-1 and Group R-1 sleeping units in accordance with Table 907.9.1.2 shall be provided with a visible alarm notification appliance, activated by both the in-room smoke alarm and the building fire alarm system.

**TABLE 907.9.1.2
VISIBLE AND AUDIBLE ALARMS**

| NUMBER OF SLEEPING UNITS | SLEEPING UNITS WITH VISIBLE AND AUDIBLE ALARMS |
|--------------------------|--|
|--------------------------|--|

(Remainder of table unchanged)

1003.2.10.1 Where required. Exits and exit access doors shall be marked by an approved exit sign readily visible from any direction of egress travel. Access to exits shall be marked by readily visible exit signs in cases where the exit or the path of egress travel is not immediately visible to the occupants. Exit sign placement shall be such that no point in an exit access corridor is more than 100 feet (30 480 mm) or the listed viewing distance for the sign, whichever is less, from the nearest visible exit sign.

Exceptions:

1. Exit signs are not required in rooms or areas which require only one exit or exit access.
2. Main exterior exit doors or gates which obviously and clearly are identifiable as exits need not have exit signs where approved by the building official.
3. Exit signs are not required in occupancies in Group U and individual sleeping units or dwelling units in Groups R-1, R-2 or R-3.
4. Exit signs are not required in sleeping areas in occupancies in Group I-3.
5. In occupancies in Groups A-4 and A-5 that include grandstand seating arrangements, exit signs are not required on the seating side of vomitories or open-

ings into seating areas where exit signs are provided in the concourse that are readily apparent from the vomitoriums. Egress lighting is provided to identify each vomitory or opening within the seating area in an emergency.

1003.2.11 Means of egress illumination. The means of egress, including the exit discharge, shall be illuminated at all times the building space served by the means of egress is occupied.

Exceptions:

1. Occupancies in Group U.
 - 1.1. Aisle accessways in Group A.
 - 1.2. Dwelling units and sleeping units in Groups R-1, R-2 and R-3.
 - 1.3. Sleeping units of Group I occupancies.

1003.3.1.1 Size of doors. The minimum width of each door opening shall be sufficient for the occupant load thereof and shall provide a clear width of not less than 32 inches (813 mm). Clear openings of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees (1.57 rad). Where this section requires a minimum clear width of 32 inches (813 mm) and a door opening includes two door leaves without a mullion, one leaf shall provide a clear opening width of 32 inches (813 mm). The maximum width of a swinging door leaf shall be 48 inches (1219 mm) nominal. Means of egress doors in an occupancy in Group I-2 used for the movement of beds shall provide a clear width not less than 41 1/2 inches (1054 mm). The height of doors shall not be less than 80 inches (2032 mm).

Exceptions:

1. The minimum and maximum width shall not apply to door openings that are not part of the required means of egress in occupancies in Groups R-2 and R-3 as applicable in Section 101.2.
2. Door openings to resident sleeping units in occupancies in Group I-3 shall have a clear width of not less than 28 inches (711 mm).
3. Door openings to storage closets less than 10 square feet (0.93 m²) in area shall not be limited by the minimum width.
4. Width of door leaves in revolving doors that comply with Section 1003.3.1.3.1 shall not be limited.
5. Door openings within a dwelling unit shall not be less than 78 inches (1981 mm) in height.
6. Exterior door openings in dwelling units, other than the required exit door, shall not be less than 76 inches (1930 mm) in height.
7. Interior egress door within a dwelling unit which is not required to be adaptable or accessible.
8. Door openings required to be accessible within Type B dwelling units shall have a minimum clear width of 31 3/4 inches (806 mm).

1003.3.1.8 Locks and latches. Egress doors shall be readily

openable from the egress side without the use of a key or special knowledge or effort.

Exceptions:

1. Places of detention or restraint.
2. In buildings in occupancy Group A having an occupant load of 300 or less, Groups B, F, M, and S, and in churches, the main exterior door or doors is permitted to be equipped with key-operated locking devices from the egress side provided:
 - 2.1. The locking device is readily distinguishable as locked,
 - 2.2. A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED. The sign shall be in letters 1 inch (25 mm) high on a contrasting background,
 - 2.3. The use of the key-operated locking device is revokable by the building official for due cause.
3. Where egress doors are used in pairs, approved automatic flush bolts shall be permitted to be used, provided that the door leaf having the automatic flush bolts has no doorknob or surface-mounted hardware.
4. Doors from individual dwelling or sleeping units of Group R occupancies having an occupant load of 10 or less are permitted to be equipped 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.

1004.2.3 Egress through intervening spaces. Egress from a room or space shall not pass through adjoining or intervening rooms or areas, except where such adjoining rooms or areas are accessory to the area served; are not a high-hazard occupancy; and provide a discernible path of egress travel to an exit. Egress shall not pass through kitchens, store rooms, closets or spaces used for similar purposes. An exit access shall not pass through a room that can be locked to prevent egress. Means of egress from dwelling units or sleeping areas shall not lead through other sleeping areas, toilet rooms or bathrooms.

Exceptions:

1. Means of egress are not prohibited through a kitchen area serving adjoining rooms constituting part of the same dwelling unit or sleeping unit.
2. Means of egress are not prohibited through adjoining or intervening rooms or spaces in a Group H occupancy when the adjoining or intervening rooms or spaces are the same or a lesser hazard occupancy group.

1004.2.3.1 Multiple tenants. Where more than one tenant occupies any one floor of a building or structure, each tenant

space, dwelling unit, and sleeping unit shall be provided with access to the required exits without passing through adjacent tenant spaces, dwelling units, and sleeping units.

1004.3.2.1 Construction. Corridors shall be fire-resistance rated in accordance with Table 1004.3.2.1. The corridor walls required to be fire-resistance rated shall comply with Section 708 for fire partitions.

Exceptions:

1. A fire-resistance rating is not required for corridors in an occupancy in Group E where each room that is used for instruction has at least one door directly to the exterior and rooms for assembly purposes have at least one-half of the required means of egress doors opening directly to the exterior. Exterior doors specified in this exception are required to be at ground level.
2. A fire-resistance rating is not required for corridors contained within a dwelling or sleeping unit in an occupancy in Group R.
3. A fire-resistance rating is not required for corridors in open parking garages.
4. A fire-resistance rating is not required for corridors in an occupancy in Group B which is a space requiring only a single means of egress complying with Section 1004.2.1.

1005.3.2 Enclosures. Interior exit stairways and exit ramps shall be enclosed with fire barriers. Enclosures four stories or more shall be 2-hour fire-resistance rated. Enclosures less than four stories shall be 1-hour fire-resistance rated. The number of stories shall be computed as all floor levels, including basements but excluding mezzanines. An exit enclosure shall not be used for any purpose other than means of egress. Enclosures shall be constructed as fire barriers in accordance with Section 706.

Exceptions:

1. In other than Groups H and I occupancies, a stairway serving an occupant load of less than 10 not more than one story above the level of exit discharge is not required to be enclosed.
2. Exits in buildings of Group A-5 where all portions of the means of egress are essentially open to the outside need not be enclosed.
3. Stairways serving and contained within a single residential dwelling unit in occupancies in Group R-2 or R-3 and sleeping units in occupancies in Group R-1 are not required to be enclosed.

1009.1 General. In addition to the means of egress required by this chapter, provisions shall be made for emergency escape and rescue in Group R as applicable in Section 101.2 and Group I-1 occupancies. Basements and sleeping rooms below the fourth story above grade plane shall have at least one exterior emergency escape and rescue opening in accordance with this section. Such opening shall open directly into a public street, public alley, yard or court.

Exceptions:

1. In other than Group R-3 occupancies as applicable in Section 101.2, buildings equipped throughout with an

approved automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

2. In other than Group R-3 occupancies as applicable in Section 101.2, sleeping rooms provided with a door to a fire-resistance-rated corridor having access to two remote exits in opposite directions.
3. The emergency escape and rescue opening is permitted to open onto a balcony within an atrium in accordance with the requirements of Section 404, provided the balcony provides access to an exit and the dwelling unit or sleeping unit has a means of egress that is not open to the atrium.
4. Basements with a ceiling height of less than 80 inches (2032 mm) shall not be required to have emergency escape and rescue windows.
5. High-rise buildings in accordance with Section 403.
6. Emergency escape and rescue openings are not required from basements or sleeping rooms which have an exit door or exit access door that opens directly into a public street, public alley, yard, egress court or to an exterior exit balcony that opens to a public street, public alley, yard or egress court.
7. Basements having no more than 200 square feet (18.6 square meters) in floor area and having ceiling heights less than 80 inches (2032 mm) shall not be required to have emergency escape windows.

1103.2.11 Residential Group R-1. Buildings of Group R-1 containing not more than five sleeping units for rent or hire that are also occupied as the residence of the proprietor are not required to be accessible.

1103.2.12 Day care facilities. Where a day care facility (Groups A-3, E, I-4 and R-3) is part of a dwelling unit, only the portion of the structure utilized for the day care facility is required to be accessible.

1105.1 Required. At least 50 percent but not less than one entrance to each building and structure, and each separate tenant space within the building or structure, shall comply with the accessible route provisions of this chapter.

Exceptions:

1. Entrances to spaces not required to be accessible as provided for in Sections 1107 or 1108.
2. Loading and service entrances that are not the only entrance to a building or to a tenant space.

1106.2 Groups R-2 and R-3. Two percent, but not less than one, of each type of parking space provided for occupancies in Groups R-2 and R-3, which are required to have Type A or Type B dwelling or sleeping units, shall be accessible. Where parking is provided within or beneath a building, accessible parking spaces shall also be provided within or beneath the building.

1106.5 Location. Accessible parking spaces shall be located on the shortest accessible route of travel from adjacent parking to an accessible building entrance. Accessible parking spaces shall be dispersed among the various types of parking facilities provided. In parking facilities that do not serve a particular building, accessible parking spaces shall be located on

the shortest route to an accessible pedestrian entrance to the parking facility. Where buildings have multiple accessible entrances with adjacent parking, accessible parking spaces shall be dispersed and located near the accessible entrances.

SECTION 1107 DWELLING UNITS AND SLEEPING UNITS

1107.1 General. In addition to the other requirements of this chapter, occupancies having dwelling units or sleeping units shall be provided with accessible features in accordance with Sections 1107.2 through 1107.7.5.

1107.2 Design. Dwelling units and sleeping units which are required to be accessible units shall comply with this code and the applicable portions of Chapters 1 through 9 of ICC A117.1. Type A and Type B units shall comply with the applicable portions of Chapter 10 of ICC A117.1. Units required to be Type A units are permitted to be designed and constructed as accessible units. Units required to be Type B units are permitted to be designed and constructed as accessible units or as Type A units.

1107.3 Accessible spaces. Rooms and spaces available to the general public or available for use by residents and serving accessible units, Type A units or Type B units shall be accessible. Accessible spaces shall include toilet and bathing rooms, kitchen, living and dining areas and any exterior spaces, including patios, terraces and balconies.

Exception: Recreational facilities in accordance with Section 1109.14.

1107.4 Accessible route. At least one accessible route shall connect accessible building or facility entrances with the primary entrance of each accessible unit, Type A unit and Type B unit within the building or facility and with those exterior and interior spaces and facilities that serve the units.

Exceptions:

1. If the slope of the finished ground level between accessible facilities and buildings exceeds one unit vertical in 12 units horizontal (1:12), or where physical barriers prevent the installation of an accessible route, a vehicular route with parking that complies with Section 1106 at each public or common use facility or building is permitted in place of the accessible route.
2. Exterior decks, patios, or balconies that are part of Type B units and have impervious surfaces, and that are not more than 4 inches (102 mm) below the finished floor level of the adjacent interior space of the unit.

1107.5 Group I. Occupancies in Group I shall be provided with accessible features in accordance with Sections 1107.5.1 through 1107.5.5.

1107.5.1 Group I-1. Group I-1 occupancies shall be provided with accessible features in accordance with Sections 1107.5.1.1 and 1107.5.1.2.

1107.5.1.1 Accessible units. At least 4 percent, but not less than one, of the dwelling units and sleeping units shall be accessible units.

1107.5.1.2 Type B units. In structures with four or more dwelling or sleeping units intended to be occupied as a residence, ev-

ery dwelling and sleeping unit intended to be occupied as a residence shall be a Type B unit.

Exception: The number of Type B units is permitted to be reduced in accordance with Section 1107.7.

1107.5.2 Group I-2 Nursing homes. Nursing homes of Group I-2 shall be provided with accessible features in accordance with Sections 1107.5.2.1 and 1107.5.2.2.

1107.5.2.1 Accessible units. At least 50 percent, but not less than one, of the dwelling units and sleeping units shall be accessible units.

1107.5.2.2 Type B units. In structures with four or more dwelling or sleeping units intended to be occupied as a residence, every dwelling and sleeping unit intended to be occupied as a residence shall be a Type B unit.

Exception: The number of Type B units is permitted to be reduced in accordance with Section 1107.7.

1107.5.3 Group I-2 Hospitals. In general-purpose hospitals, psychiatric facilities, detoxification facilities and residential care/assisted living facilities of Group I-2 shall be provided with accessible features in accordance with Sections 1107.5.3.1 and 1107.5.3.2.

1107.5.3.1 Accessible Units. At least 10 percent, but not less than one, of the dwelling units and sleeping units shall be accessible units.

1107.5.3.2 Type B units. In structures with four or more dwelling or sleeping units intended to be occupied as a residence, every dwelling and sleeping unit intended to be occupied as a residence shall be a Type B unit.

Exception: The number of Type B units is permitted to be reduced in accordance with Section 1107.7.

1107.5.4 Group I-2 Rehabilitation facilities. In hospitals and rehabilitation facilities of Group I-2 which specialize in treating conditions that affect mobility, or units within either which specialize in treating conditions that affect mobility, 100 percent of the dwelling units and sleeping units shall be accessible units.

1107.5.5 Group I-3. In occupancies in Group I-3, at least 5 percent, but not less than one, of the dwelling units and sleeping units shall be accessible units.

1107.6 Group R. Occupancies in Group R shall be provided with accessible features in accordance with Sections 1107.6.1 through 1107.6.4.

1107.6.1 Group R-1. Group R-1 occupancies shall be provided with accessible features in accordance with Sections 1107.6.1.1 and 1107.6.1.2.

1107.6.1.1 Accessible units. In occupancies in Group R-1, accessible dwelling units and sleeping units shall be provided in accordance with Table 1107.6.1.1. All facilities on a site shall be considered to determine the total number of accessible units. Accessible units shall be dispersed among the various classes of units. Roll-in showers provided in accessible units shall include a permanently mounted folding shower seat.

**TABLE 1107.6.1.1
ACCESSIBLE DWELLING AND SLEEPING UNITS**

| TOTAL NUMBER OF UNITS PROVIDED | MINIMUM REQUIRED NUMBER OF ACCESSIBLE UNITS ASSOCIATED WITH ROLL-IN SHOWERS | TOTAL NUMBER OF REQUIRED ACCESSIBLE UNITS |
|--------------------------------|---|---|
| 1 to 25 | 0 | 1 |
| 26 to 50 | 0 | 2 |
| 51 to 75 | 1 | 4 |
| 76 to 100 | 1 | 5 |
| 101 to 150 | 2 | 7 |
| 151 to 200 | 2 | 8 |
| 201 to 300 | 3 | 10 |
| 301 to 400 | 4 | 12 |
| 401 to 500 | 4 | 13 |
| 501 to 1,000 | 1% of total | 3% of total |
| Over 1,001 | 10 plus 1 for each 100 over 1,000 | 30 plus 2 for each 100 over 1,000 |

1107.6.1.2 Type B units. In structures with four or more dwelling or sleeping units intended to be occupied as a residence, every dwelling and sleeping unit intended to be occupied as a residence shall be a Type B unit.

Exception: The number of Type B units is permitted to be reduced in accordance with Section 1107.7.

1107.6.2 Group R-2. Type A and Type B units shall be provided in occupancies in Group R-2 in accordance with Sections 1107.6.2.1 and 1107.6.2.2.

1107.6.2.1 Type A units. In occupancies in Group R-2 containing more than 20 dwelling units or sleeping units, at least 2 percent, but not less than one, of the units shall be a Type A unit. All units on a site shall be considered to determine the total number of units and the required number of Type A units. Type A units shall be dispersed among the various classes of units.

Exceptions:

1. The number of Type A units is permitted to be reduced in accordance with Section 1107.7.
2. Existing structures on a site shall not contribute to the total number of units on a site.

1107.6.2.2 Type B units. Where there are four or more dwelling units or sleeping units intended to be occupied as a residence in a single structure, every dwelling unit and sleeping unit intended to be occupied as a residence shall be a Type B unit.

Exception: The number of Type B units is permitted to be reduced in accordance with Section 1107.7.

1107.6.3 Group R-3. In occupancies in Group R-3 where there are four or more dwelling units or sleeping units intended to be occupied as a residence in a single structure, every dwelling and sleeping unit intended to be occupied as a residence shall be a Type B unit.

Exception: The number of Type B units is permitted to be reduced in accordance with Section 1107.7.

1107.6.4 Group R-4. Group R-4 occupancies shall be provided with accessible features in accordance with Sections 1107.6.4.1 and 1107.6.4.2.

1107.6.4.1 Accessible units. At least one of the dwelling or sleeping units shall be an accessible unit.

1107.6.4.2 Type B units. In structures with four or more dwelling or sleeping units intended to be occupied as a residence, every dwelling and sleeping unit intended to be occupied as a residence shall be a Type B unit.

Exception: The number of Type B units is permitted to be reduced in accordance with Section 1107.7.

1107.7 General exceptions. Where specifically permitted by Sections 1107.5 or 1107.6, the required number of Type A and Type B units is permitted to be reduced in accordance with Sections 1107.7.1 through 1107.7.5.

1107.7.1 Buildings without elevator service. Where no elevator service is provided in a building, only the dwelling and sleeping units that are located on stories indicated in Sections 1107.7.1.1 and 1107.7.1.2 are required to be Type A and Type B units. The number of Type A units shall be determined in accordance with Section 1107.6.2.

1107.7.1.1 One story with Type B units required. At least one story containing dwelling units or sleeping units intended to be occupied as a residence shall be provided with an accessible entrance from the exterior of the building and all units intended to be occupied as a residence on that story shall be Type B units.

1107.7.1.2 Additional stories with Type B units. On all other stories that have a building entrance in proximity to arrival points intended to serve units on that story, as indicated in Items 1 and 2, all dwelling units and sleeping units intended to be occupied as a residence served by that entrance on that story shall be Type B units.

1. Where the slopes of the undisturbed site measured between the planned entrance and all vehicular or pedestrian arrival points within 50 feet of the planned entrance are 10 percent or less, and
2. Where the slopes of the planned finished grade measured between the entrance and all vehicular or pedestrian arrival points within 50 feet of the planned entrance are 10 percent or less.

Where no such arrival points are within 50 feet (15 240 mm) of the entrance, the closest arrival point shall be used unless that arrival point serves the story required by Section 1107.7.1.1.

1107.7.2 Multistory units. A multistory dwelling or sleeping unit which is not provided with elevator service is not required to be a Type B unit. Where a multistory unit is provided with external elevator service to only one floor, the floor provided with elevator service shall be the primary entry to the unit, shall comply with the requirements for a Type B unit, and a toilet facility shall be provided on that floor.

1107.7.3 Elevator service to the lowest story with units. Where elevator service in the building provides an accessible route only to the lowest story containing dwelling or sleeping units intended to be occupied as a residence, only the units on that story which are intended to be occupied as a residence are required to be Type B units.

1107.7.4 Site impracticality. On a site with multiple nonelevator buildings, the number of units required by Section 1107.7.1 to be Type B units is permitted to be reduced to a percentage which is equal to the percentage of the entire site having grades, prior to development, which are less than 10 percent, provided that all of the following conditions are met:

1. Not less than 20 percent of the units required by Section 1107.7.1 on the site are Type B units;
2. Units required by Section 1107.7.1, where the slope between the building entrance serving the units on that story and a pedestrian or vehicular arrival point is no greater than 8.33 percent, are Type B units,
3. Units required by Section 1107.7.1, where an elevated walkway is planned between a building entrance serving the units on that story and a pedestrian or vehicular arrival point and the slope between them is 10 percent or less are Type B units, and
4. Units served by an elevator in accordance with Section 1107.7.3 are Type B units.

1107.7.5 Base flood elevation. The required number of Type A and Type B units shall not apply to a site where the lowest floor or the lowest structural building members of nonelevator buildings are required to be at or above the base flood elevation resulting in:

1. A difference in elevation between the minimum required floor elevation at the primary entrances and vehicular and pedestrian arrival points within 50 feet (15 240 mm) exceeding 30 inches (762 mm), and
2. A slope exceeding 10 percent between the minimum required floor elevation at the primary entrances and vehicular and pedestrian arrival points within 50 feet (15 240 mm).

Where no such arrival points are within 50 feet (15 240 mm) of the primary entrances, the closest arrival point shall be used.

SECTION 1108 SPECIAL OCCUPANCIES

1108.1 General. In addition to the other requirements of this chapter, the requirements of Sections 1108.2 through 1108.3.1 shall apply to specific occupancies.

1108.2 Assembly area seating. Assembly areas with fixed seating shall comply with Sections 1108.2.1 through 1108.2.4.1. Dining areas shall comply with Sections 1108.2.5 through 1108.2.5.2.

1108.2.1 Services. *(Text not revised)*

1108.2.2 Wheelchair spaces. In theaters, bleachers, grandstands and other fixed seating assembly areas, accessible wheelchair spaces shall be provided in accordance with Table 1108.2.2. At least one seat for a companion shall be provided beside each wheelchair space.

**TABLE 1108.2.2
ACCESSIBLE WHEELCHAIR SPACES**

(Table not revised)

1108.2.2.1 Wheelchair space clusters. Accessible wheelchair spaces shall be grouped in wheelchair space clusters in accordance with Table 1108.2.2.1.

Exception: In fixed seating assembly areas where sightlines require more than one step for a rise in elevation between rows, the minimum required number of wheelchair space clusters in that area shall be one-half of that required by Table 1108.2.2.1.

**TABLE 1108.2.2.1
WHEELCHAIR SPACE CLUSTERS**

(Table not revised)

1108.2.3 Dispersion of wheelchair space clusters. *(Text not revised)*

1108.2.3.1 Multilevel assembly seating areas. *(Text not revised)*

1108.2.3.2 Separation between clusters. *(Text not revised)*

1108.2.4 Assistive listening systems. *(Text not revised)*

1108.2.4.1 Receivers. Receivers shall be provided for assistive listening systems in accordance with Table 1108.2.4.1. Twenty-five percent of receivers, but not less than two, shall be hearing-aid compatible.

**TABLE 1108.2.4.1
RECEIVERS FOR ASSISTIVE LISTENING SYSTEMS**

(Table not revised)

1108.2.5 Dining areas. *(Text not revised)*

1108.2.5.1 Fixed or built-in seating or tables. *(Text not revised)*

1108.2.5.2 Dining counters. *(Text not revised)*

Delete current Sections 1107.3 through 1107.3.3 (Revised and relocated as new Sections 1107.5 through 1107.5.5).

Delete current Section 1107.4. (Section 1107.4 has been relocated to Section 1103.2.12).

Delete current Sections 1107.5 through 1107.5.7 (Revised and relocated as Sections 1107.3, 1107.4 and 1107.6 through 1107.7.5).

Revise and renumber current Section 1107.6 to 1108.3 as shown:

1108.3 Self-service storage facilities. Self-service storage facilities shall provide accessible individual self-storage spaces in accordance with Table 1108.3.

**TABLE 1108.3
ACCESSIBLE SELF-SERVICE STORAGE FACILITIES**

(Table not revised)

1108.3.1 Dispersion. Accessible individual self-service storage spaces shall be dispersed throughout the various classes of spaces provided. Where more classes of spaces are provided than the number of required accessible spaces, the number of accessible spaces shall not be required to exceed that required by Table 1108.3. Accessible spaces are permitted to be dispersed in a single building of a multibuilding facility.

Revise and renumber current Section 1108 to Section 1109 as shown:

SECTION 1109 OTHER FEATURES AND FACILITIES

1109.1 General. Accessible building features and facilities shall be provided in accordance with Sections 1109.2 through 1109.15.

Exception: Type A and Type B dwelling and sleeping units shall comply with ICC A117.1.

1109.2 Toilet and bathing facilities. Toilet rooms and bathing facilities shall be accessible. Where a floor level is not required to be connected by an accessible route, the only toilet rooms or bathing facilities provided within the facility shall not be located on the inaccessible floor. At least one of each type of fixture, element, control or dispenser in each accessible toilet room and bathing facility shall be accessible.

Exceptions:

1. In toilet rooms or bathing facilities accessed only through a private office, not for common or public use, and intended for use by a single occupant, any of the following alternatives are allowed:
 - 1.1. Doors are permitted to swing into the clear floor space provided the door swing can be reversed to meet the requirements in ICC A117.1,
 - 1.2. The height requirements for the water closet in ICC A117.1 are not applicable,
 - 1.3. Grab bars are not required to be installed in a toilet room, provided that reinforcement has been installed in the walls and located so as to permit the installation of such grab bars, and
 - 1.4. The requirement for height, knee and toe clearance shall not apply to a lavatory.
2. This section is not applicable to toilet and bathing facilities that serve dwelling units or sleeping units that are not required to be accessible by Section 1107.
3. Where multiple single-user toilet rooms or bathing facilities are clustered at a single location and contain fixtures in excess of the minimum required number of plumbing fixtures, at least 5 percent, but not less than one room for each use at each cluster, shall be accessible.
4. Toilet room fixtures that are in excess of those required by the *International Plumbing Code* and that are designated for use by children in day care and primary school occupancies.

1109.2.1 Unisex toilet and bathing rooms. *(Text not revised)*

Section 1109.2.1.1 Standard. *(Text not revised)*

1109.2.1.2 Unisex toilet rooms. Unisex toilet rooms shall include only one water closet and only one lavatory. A unisex bathing room in accordance with Section 1109.2.1.3 shall be considered a unisex toilet room.

Exception: A urinal is permitted to be provided in addition to the water closet in a unisex toilet room.

Sections 1109.2.1.3 thru 1109.6. *(Text not revised)*

Section 1109.7

1109.7 Lifts. Platform (wheelchair) lifts shall not be a part of a required accessible route in new construction.

Exceptions: Platform (wheelchair) lifts are permitted for:

1. An accessible route to a performing area in occupancies in Group A.
2. An accessible route to wheelchair spaces required by Section 1108.2.2.
3. An accessible route to spaces that are not open to the general public with an occupant load of not more than five.
4. An accessible route within a dwelling or sleeping unit.
5. An accessible route to wheelchair seating spaces located in outdoor dining terraces in A-5 occupancies where the means of egress from the dining terraces to a public way is open to the outdoors.

Sections 1109.8 thru 1109.13.1. *(Text not revised)*

1109.14 Recreational facilities. Recreational facilities shall be provided with accessible features in accordance with Sections 1109.14.1 through 1109.14.3.

1109.14.1 Facilities serving a single building. In Group R-2 and R-3 occupancies where recreational facilities are provided serving a single building containing Type A or Type B units, 25 percent, but not less than one, of each type of recreational facility shall be accessible. Every recreational facility of each type on a site shall be considered to determine the total number of each type that are required to be accessible.

1109.14.2 Facilities serving multiple buildings. In Group R-2 and R-3 occupancies on a single site where multiple buildings containing Type A or Type B units are served by recreational facilities, 25 percent, but not less than one, of each type of recreational facility serving each building shall be accessible. The total number of each type of recreational facility that is required to be accessible shall be determined by considering every recreational facility of each type serving each building on the site.

1109.14.3 Other occupancies. All recreational facilities not falling within the purview of Sections 1109.14.1 or 1109.14.2 shall be accessible.

1109.15 Stairways. Stairways located along accessible routes connecting floor levels that are not connected by an elevator shall be designed and constructed to comply with ICC A117.1 and Chapter 10.

Revise and renumber current Section 1109 to 1110:

**SECTION 1110
SIGNAGE**

1110.1 Signs. *(Text not revised)*

1110.2 Directional signage. Directional signage indicating the route to the nearest like accessible element shall be provided at the following locations. These directional signs shall include the International Symbol of Accessibility:

1. Inaccessible building entrances.
2. Inaccessible public toilets and bathing facilities.
3. Elevators not serving an accessible route.

4. At each separate-sex toilet and bathing room indicating the location of the nearest unisex toilet or bathing room where provided in accordance with Section 1109.2.1.
5. At exits and elevators serving a required accessible space, but not providing an approved accessible means of egress, signage shall be provided in accordance with Section 1003.2.13.6.

1110.3 Other signs. Signage indicating special accessibility provisions shall be provided as shown:

1. In assembly areas required to comply with Section 1108.2.4, a sign notifying the general public of the availability of assistive listening systems shall be provided at ticket offices or similar locations.
2. At each door to an exit stairway, signage shall be provided in accordance with Section 1003.2.10.3.
3. At areas of refuge, signage shall be provided in accordance with Sections 1003.2.13.5.3 through 1003.2.13.5.5.
4. At areas for assisted rescue, signage shall be provided in accordance with Section 1003.2.13.7.3.

1209.2 Walls. Walls within 2 feet (610 mm) of urinals and water closets shall have a smooth, hard, nonabsorbent surface, to a height of 4 feet (1219 mm) above the floor, and except for structural elements, the materials used in such walls shall be of a type that is not adversely affected by moisture.

Exceptions:

1. Dwelling units and sleeping units.
2. Toilet rooms that are not accessible to the public and which have not more than one water closet.

Accessories such as grab bars, towel bars, paper dispensers and soap dishes, provided on or within walls, shall be installed and sealed to protect structural elements from moisture.

3109.4.1.8 Dwelling wall as a barrier. Where a wall of a dwelling serves as part of the barrier, one of the following shall apply:

1. Doors with direct access to the pool through that wall shall be equipped with an alarm which produces an audible warning when the door and its screen are opened. The alarm shall sound continuously for a minimum of 30 seconds immediately after the door is opened and be capable of being heard throughout the house during normal household activities. The alarm shall automatically reset under all conditions. The alarm shall be equipped with a manual means to temporarily deactivate the alarm for a single opening. Such deactivation shall last no more than 15 seconds.

onds. The deactivation switch shall be located at least 54 inches (1372 mm) above the threshold of the door.

2. The pool shall be equipped with a power safety cover which complies with ASTM F 1346.
3. Other means of protection, such as self-closing doors with self-latching devices, which are approved by the administrative authority, shall be accepted so long as the degree of protection afforded is not less than the protection afforded by Section 3109.4.1.8, Item 1 or 2.

3408.1 Scope. The provisions of Sections 3408.1 through 3408.8.5 apply to maintenance, change of occupancy, additions and alterations to existing buildings, including those identified as historic buildings.

Exception: Type B dwelling or sleeping units required by Section 1107 are not required to be provided in existing buildings and facilities.

3408.7.2 Platform lifts. Platform (wheelchair) lifts complying with ICC A117.1 and installed in accordance with ASME A18.1 shall be permitted as a component of an accessible route.

3408.7.8 Dwelling or sleeping units. Where I-1, I-2, I-3, R-1, R-2 or R-4 dwelling or sleeping units are being altered or added, the requirements of Section 1107 for accessible or Type A units and Chapter 9 for accessible alarms apply only to the quantity of spaces being altered or added.

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ASME A18.1—99 Safety Standard for Platform Lifts and Stairway Chair Lifts...1003.2.13.4, 3408.7.2

IRC

R301.1.2 Engineered design. When a building of otherwise conventional light-frame construction contains structural elements not conforming to this code, these elements shall be designed in accordance with accepted engineering practice. The extent of such design need only demonstrate compliance of nonconventional elements with other applicable provisions and shall be compatible with the performance of the conventional framed system. Engineered design in accordance with the *International Building Code* is permitted for all buildings and structures, and parts thereof, included in the scope of this code.

R303.4.1 Light activation. The control for activation of the required interior stairway lighting shall be accessible at the

**TABLE R301.2(1)
CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA**

| GROUND SNOW LOAD | Wind | SEISMIC DESIGN CATEGORY ⁹ | SUBJECT TO DAMAGE FROM | | | | Winter Design Temp ^f | Ice Shield Underlayment Required ⁱ | Flood Hazards ^h |
|------------------|-----------------------------|--------------------------------------|-------------------------|-------------------------------|----------------------|--------------------|---------------------------------|---|----------------------------|
| | SPEED ^e (mph) | | Weathering ^a | Frost Line Depth ^b | Termite ^c | Decay ^d | | | |
| | | | | | | | | | |

(No change to Footnotes a – h)

i. In accordance with Sections R905.2.7.1, R905.4.3, R905.5.3, R905.6.3, R905.7.3 and R905.8.3, for areas where the average daily temperature in January is 25° F (-4° C) or less, or where there has been a history of local damage from the effects of ice damming, the jurisdiction shall fill in this part of the table with "YES". Otherwise, the jurisdiction shall fill in this part of the table with "NO".

top and bottom of each stairway without traversing any steps. The illumination of exterior stairways shall be controlled from inside the dwelling unit.

Exception: Lights that are continuously illuminated or automatically controlled.

R309.2 Separation required. The garage shall be separated from the residence and its attic area by not less than ½-inch (12.7 mm) gypsum board applied to the garage side. Garages beneath habitable rooms shall be separated from all habitable rooms above by not less than 5/8-inch Type X gypsum board or equivalent. Where the separation is a floor-ceiling assembly, the structure supporting the separation shall also be protected by not less than ½-inch (12.7 mm) gypsum board or equivalent.

R312.1.2 Landings at doors. (Renumbered in the 2002 Accumulative Supplement as R311.4.3). There shall be a floor or landing on each side of each exterior door.

Exception: Where a stairway of two or fewer risers is located on the exterior side of a door, other than the required exit door, a landing is not required for the exterior side of the door.

The floor or landing at the exit door required by Section R311.4.1 shall not be more than 1.5 inches (38 mm) lower than the top of the threshold. The floor or landing at exterior doors other than the exit door required by Section R311.4.1 shall not be required to comply with this requirement but shall have a rise no greater than that permitted in Section R311.5.3.

Exception: The landing at an exterior doorway shall not be more than 7 ¾ inches (197 mm) below the top of the threshold, provided the door, other than an exterior storm or screen door does not swing over the landing.

The width of each landing shall not be less than the door served. Every landing shall have a minimum dimension of 36 inches (914 mm) measured in the direction of travel.

R313.2 Handrails required. (Renumbered in the 2002 Accumulative Supplement as R311.6.3). Handrails shall be provided on at least one side of all ramps exceeding a slope of one unit vertical in 12 units horizontal (8.33-percent slope).

R315.2 Handrail grip size. (Renumbered in the 2002 Accumulative Supplement as R311.5.6.3). All required handrails shall be of one of the following types or provide equivalent graspability.

1. Type I. Handrails with a circular cross section shall have an outside diameter of at least 1 ¼ inches (32 mm) and not greater than 2 inches (51 mm). If the handrail is not circular it shall have a perimeter dimension of at least 4 inches (102 mm) and not greater than 6 ¼ inches (160 mm) with a maximum cross section of dimension of 2 ¼ inches (57 mm).
2. Type II. Handrails with a perimeter greater than 6 ¼ inches (160 mm) shall provide a graspable finger recess area on both sides of the profile. The finger recess shall begin within a distance of ¾ inches (19 mm) measured vertically from the tallest portion of the profile and achieve a depth of at least 5/16 inches (8 mm) within 7/8 inches (22 mm) below the widest portion of the profile. This required depth shall continue for at least 3/8 inches (10 mm) to a level that is not less than 1 ¾ inches (45 mm) below the tallest portion of the profile. The minimum width of the handrail

above the recess shall be 1 ¼ inches (32 mm) to a maximum of 2 ¾ inches (70 mm). Edges shall have a minimum radius of 0.01 inches (0.25 mm).

R316.2 Guardrail opening limitations. Required guards on open sides of stairways, raised floor areas, balconies and porches shall have intermediate rails or ornamental closures which do not allow passage of a sphere 4 inches (102 mm) or more in diameter.

Exceptions:

1. The triangular openings formed by the riser, tread and bottom rail of a guard at the open side of a stairway are permitted to be of such a size that a sphere 6 inches (152 mm) cannot pass through.
2. Openings for required guards on the sides of stair treads shall not allow a sphere 4 ¾ inches (107 mm) to pass through.

R502.4 Joists under bearing partitions. Joists under parallel bearing partitions shall be of adequate size to support the load. Double joists, sized to adequately support the load, that are separated to permit the installation of piping or vents shall be full-depth solid blocked with lumber not less than 2 inches (51 mm) in nominal thickness spaced not more than 4 feet (1219 mm) on center.

R602.8 Fireblocking required. Fireblocking shall be provided to cut off all concealed draft openings (both vertical and horizontal) and to form an effective fire barrier between stories, and between a top story and the roof space. Fireblocking shall be provided in wood-frame construction in the following locations.

1. In concealed spaces of stud walls and partitions, including furred spaces, at the ceiling and floor levels. Concealed horizontal furred spaces shall also be fireblocked at intervals not exceeding 10 feet (3048). Batts or blankets of mineral or glass fiber or other approved nonrigid materials shall be allowed as fireblocking in walls constructed using parallel rows of studs or staggered studs.

(2 through 6 unchanged)

R905.2.7.1 Ice protection. In areas where the average daily temperature in January is 25EF (-4EC) or less or when Table R301.2(1) criteria so designate, an ice barrier that consists of a least two layers of underlayment cemented together or of a self-adhering polymer modified bitumen sheet, shall be used in lieu of normal underlayment and extend from the eave's edge to a point at least 24 inches (610 mm) inside the exterior wall line of the building.

R905.4.3 Underlayment. In areas where the average daily temperature in January is 25EF (-4EC) or less, or when Table R301.2(1) criteria so designate, an ice barrier that consists of at least two layers of underlayment cemented together or of a self-adhering polymer modified bitumen sheet, shall be used in lieu of normal underlayment and extend from the eave's edge to a point at least 24 inches (610 mm) inside the exterior wall line of the building. Underlayment shall comply with ASTM D 226, Type I.

R905.5.3 Underlayment. In areas where the average daily temperature in January is 25EF (-4EC) or less, or when Table

R301.2(1) criteria so designate, an ice barrier that consists of at least two layers of underlayment cemented together or of a self-adhering polymer modified bitumen sheet, shall extend from the eave's edge to a point at least 24 inches (610 mm) inside the exterior wall line of the building. Underlayment shall comply with ASTM D 226, Type I.

R905.6.3 Underlayment. In areas where the average daily temperature in January is 25EF (-4EC) or less, or when Table R301.2(1) criteria so designate, an ice barrier that consists of at least two layers of underlayment cemented together or of a self-adhering polymer modified bitumen sheet, shall extend from the eave's edge to a point at least 24 inches (610 mm) inside the exterior wall line of the building. Underlayment shall comply with ASTM D 226, Type I.

R905.7.3 Underlayment. In areas where the average daily temperature in January is 25BF (-4BC) or less, or when Table R301.2(1) criteria so designate, an ice barrier that consists of at least two layers of underlayment cemented together or of a self-adhering polymer modified bitumen sheet, shall extend from the eave's edge to a point at least 24 inches (610 mm) inside the exterior wall line of the building. Underlayment shall comply with ASTM D 226, Type I.

R905.8.3 Underlayment. In areas where the average daily temperature in January is 25EF (-4EC) or less, or when Table R301.2(1) criteria so designate, an ice barrier that consists of at least two layers of underlayment cemented together or a self-adhering polymer modified bitumen sheet, shall extend from the edge of the eave to a point at least 24 inches (610 mm) inside the exterior wall line of the building. Underlayment shall comply with ASTM D 226, Type I.

R907.3 Recovering versus replacement. New roof coverings shall not be installed without first removing all existing layers of roof coverings where any of the following conditions occur:

1. Where the existing roof or roof covering is water-soaked or has deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing.
2. Where the existing roof covering is wood shake, slate, clay, cement or asbestos-cement tile.
3. Where the existing roof has two or more applications of any type of roof covering.

Exceptions: (No change)

M1411.3.2 Drain pipe materials and sizes. Components of the condensate disposal system shall be cast iron, galvanized steel, copper, polybutylene, polyethylene, ABS, CPVC or PVC pipe or tubing. All components shall be selected for the pressure and temperature rating of the installation. Condensate waste and drain line size shall be not less than 3/4-inch (91 mm) internal diameter and shall not decrease in size from the drain pan connection to the place of condensate disposal. Where the drain pipes from more than one unit are manifolded together for condensate drainage, the pipe or tubing shall be sized in accordance with an approved method. All horizontal sections of drain piping shall be installed in uniform alignment at a uniform slope.

M1804.2.6 Mechanical draft systems. Mechanical draft systems shall be installed in accordance with their listing, the manu-

facturer's installation instructions and, except for direct vent appliances, the following requirements:

1. (No change)
2. The vent terminal shall be located not less than 4 feet (1219 mm) below, 4 feet (1219 mm) horizontally from or 1 foot (305 mm) above any door, window or gravity air inlet into a dwelling.
3. The vent termination point shall not be located closer than 3 feet (914 mm) to an interior corner formed by two walls perpendicular to each other.
4. (No change)

M2001.3 Valves. Every boiler or modular boiler shall have a shutoff valve in the supply and return piping.

For multiple boiler or multiple modular boiler installations, each boiler or modular boiler shall have individual shutoff valves in the supply and return piping.

Exception: Shutoff valves are not required in a system having a single low-pressure steam boiler.

M2002.2 Boiler low-water cutoff. All steam and hot water boilers shall be protected with a low-water cutoff control. The low-water cutoff shall automatically stop the combustion operation of the appliance when the water level drops below the lowest safe water level as established by the manufacturer.

M2004.1 General. Water heaters utilized both to supply potable hot water and to provide hot water for space heating shall be installed in accordance with this chapter, Chapter 24, Chapter 28, and the manufacturer's installation instructions.

P2903.5 Water hammer. The flow velocity of the water distribution system shall be controlled to reduce the possibility of water hammer. A water-hammer arrestor shall be installed where quick-closing valves are utilized. Water-hammer arrestors shall be installed in accordance with the manufacturer's specifications. Water-hammer arrestors shall conform to ASSE 1010.

P2904.5.1 Under concrete slabs. Inaccessible water-distribution piping under slabs shall be copper water tube minimum Type M, brass, ductile iron pressure pipe, galvanized steel-pipe, cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX) pressure pipe, chlorinated polyvinyl chloride (CPVC) or polybutylene (PB) or cross-linked polyethylene (PEX) plastic pipe or tubing—all to be installed with approved fittings or bends. The minimum pressure rating for plastic pipe or tubing installed under slabs shall be 100 psi at 180°F (689 kPa at 82°C).

R303.4 Stairway illumination. All interior and exterior stairways shall be provided with a means to illuminate the stairs, including the landings and treads. Interior stairways shall be provided with an artificial light source located in the immediate vicinity of each landing of the stairway. For interior stairs the artificial light sources shall be capable of illuminating treads and landings to levels not less than 1 foot-candle (11 lux) measured at the center of treads and landings. Exterior stairways shall be provided with an artificial light source located in the immediate vicinity of the top landing of the

stairway. Exterior stairways providing access to a basement from the outside grade level shall be provided with an artificial light source located in the immediate vicinity of the bottom landing of the stairway.

Exception: An artificial light source is not required at the top and bottom landing, provided an artificial light source is located directly over each stairway section.

R305.1 Minimum height. Habitable rooms, hallways, corridors, bathrooms, toilet rooms, laundry rooms and basements shall have a ceiling height of not less than 7 feet (2134 mm). The required height shall be measured from the finish floor to the lowest projection from the ceiling.

Exceptions:

1. Beams and girders spaced not less than 4 feet(1219 mm) on center may project not more than 6 inches (152 mm) below the required ceiling height.
2. Ceilings in basements without habitable spaces may project to within 6 feet, 8 inches (2032 mm) of the finish floor; and beams, girders, ducts or other obstructions may project to within 6 feet, 4 inches (1931 mm) of the finished floor.
3. Not more than 50 percent of the required floor area of a room or space is permitted to have a sloped ceiling less than 7 feet (2134 mm) in height with no portion of the required floor area less than 5 feet (1524 mm) in height.
4. Bathrooms shall have a minimum ceiling height of 6 feet 8 inches (2036 mm) over the fixture and at the front clearance area for fixtures as shown in Figure R307.2. A shower or tub equipped with a showerhead shall have a minimum ceiling height of 6 feet 8 inches (2036 mm) above a minimum area 30 inches (762 mm) by 30 inches (762 mm) at the showerhead.

E3802.9 Bedrooms. All branch circuits that supply 125-volt, single-phase, 15- and 20-ampere receptacle outlets installed in bedrooms shall be protected by arc-fault circuit interrupters.

403.2 Separate facilities. Where plumbing fixtures are required, separate facilities shall be provided for each sex.

Exceptions:

(No change to Exceptions 1, 2 and 3)

4. Separate facilities shall not be required in mercantile occupancies in which the maximum occupant load is 50 or less.

403.4 Location of employee toilet facilities in occupancies other than assembly or mercantile. Access to toilet facilities in occupancies other than mercantile and assembly occupancies shall be from within the employees’ working area. Employee facilities shall be either separate facilities or combined employee and public facilities.

Exception: Facilities that are required for employees in storage structures or kiosks, and are located in adjacent structures under the same ownership, lease or control, shall be a maximum travel distance of 500 feet (152 m) from the employees’ regular working area.

403.4.1 Travel distance. The required toilet facilities in occupancies other than assembly or mercantile shall be located not more than one story above or below the employee’s working area and the path of travel to such facilities shall not exceed a distance of 500 feet (152 m).

Exception: The location and maximum travel distances to required employee toilet facilities in factory and industrial occupancies are permitted to exceed that required in Section 403.4.1, provided the location and maximum travel distance are approved by the code official.

**TABLE P2904.4.1
WATER SERVICE PIPE**

| MATERIAL | STANDARD |
|---|---|
| Acrylonitrile butadiene styrene (ABS) plastic pipe | ASTM D 1527; ASTM D 2282 |
| Asbestos-cement pipe | ASTM C 296 |
| Brass pipe | ASTM B 43 |
| Chlorinated polyvinyl chloride (CPVC) plastic pipe | ASTM D 2846; ASTM F 441; ASTM F 442; CSA B137.6 |
| Copper or copper-alloy pipe | ASTM B 42; ASTM B 302 |
| Copper or copper-alloy tubing (Type K, WK, L, WL, M or WM) | ASTM B 75; ASTM B 88; ASTM B 251; ASTM B 447 |
| Cross-linked polyethylene (PEX) plastic tubing | ASTM F 876; ASTM F 877; CSA CAN/CSA-B137.5 |
| Cross-linked polyethylene/ aluminum/cross-linked polyethylene (PEX-AL-PEX) pipe | ASTM F 1281; CSA CAN/CSA B137.10 |
| Ductile iron water pipe | AWWA C115; AWWA C151 |
| Galvanized steel pipe | ASTM A 53 |
| Polybutylene (PB) plastic pipe and tubing | ASTM D 2662; ASTM D 2666; ASTM D 3309; CSA B137.8 |
| Polyethylene/aluminum/ polyethylene (PE-AL-PE) pipe | ASTM F 1282; CSA CAN/CSA-B137.9 |
| Polyethylene (PE) plastic pipe | ASTM D 2239; CAN/CSA-B137.1 |
| Polyethylene (PE) plastic tubing | ASTM D 2737; CSA B137.1 |

403.5 Location of employee toilet facilities in mercantile and assembly occupancies. Employees shall be provided with toilet facilities in building and tenant spaces utilized as restaurants, nightclubs, places of public assembly and mercantile occupancies. The employee facilities shall be either separate facilities or combined employee and public facilities. The required toilet facilities shall be located not more than one story above or below the employee's work area and the path of travel to such facilities, in other than covered malls, shall not exceed a distance of 500 feet (152 m). The path of travel to required facilities in covered malls shall not exceed a distance of 300 feet (91 m).

Exception: Employee toilet facilities shall not be required in tenant spaces where the travel distance from the main entrance of the tenant space to a central toilet area does not exceed 300 feet (91 m) and such central toilet facilities are located not more than one story above or below the tenant space.

410.1 Approval. Drinking fountains shall conform to ASME A112.19.1, ASME A112.19.2 or ASME A112.19.9, and water coolers shall conform to ARI 1010. Drinking fountains and wa-

ter coolers shall conform to NSF 61, Section 9. Where water is served in restaurants, drinking fountains shall not be required. In other occupancies where drinking fountains are required, bottled water coolers shall be permitted to be substituted for not more than 50 percent of the required drinking fountains.

604.9 Water-hammer. The flow velocity of the water distribution system shall be controlled to reduce the possibility of water hammer. A water-hammer arrestor shall be installed where quick-closing valves are utilized. Water-hammer arrestors shall be installed in accordance with the manufacturer's specifications. Water-hammer arrestors shall conform to ASSE 1010.

Section 706.3

Exception: Back-to-back water closet connections to double sanitary tees shall be permitted where the horizontal developed length between the outlet of the water closet and the connection to the double sanitary tee is 18 inches (457 mm) or greater.

**TABLE P2904.5
WATER DISTRIBUTION PIPE**

| MATERIAL | STANDARD |
|--|---|
| Brass pipe | ASTM B 43 |
| Chlorinated polyvinyl chloride (CPVC) plastic pipe and tubing | ASTM D 2846; ASTM F 441; ASTM F 442; CSA B137.6 |
| Copper or copper-alloy pipe | ASTM B 42; ASTM B 302 |
| Copper or copper-alloy tubing (Type K, WK, L, WL, M or WM) | ASTM B 75; ASTM B 88; ASTM B 251; ASTM B 447 |
| Cross-linked polyethylene (PEX) plastic tubing | ASTM F 877; CSA CAN/CSA-B137.5 |
| Cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX) pipe | ASTM F 1281; CSA CAN/CSA-B137.10 |
| Galvanized steel pipe | ASTM A 53 |
| Polybutylene (PB) plastic pipe and tubing | ASTM D 3309; CSA CAN3-B137.8 |

**TABLE P2904.6
PIPE FITTINGS**

| MATERIAL | STANDARD |
|---|---|
| Acrylonitrile butadiene styrene (ABS) plastic | ASTM D 2468 |
| Cast iron | ASME B16.4; ASME B16.12 |
| Chlorinated polyvinyl chloride (CPVC) plastic | ASTM F 437; ASTM F 438; ASTM F 439 |
| Copper or copper alloy | ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.23; ASME B16.26; ASME B16.29; ASME B16.32 |
| Gray iron and ductile iron | AWWA C110; AWWA C153 |
| Malleable iron | ASME B16.3 |
| Metal Insert Fittings Utilizing a Copper Crimp Ring for SDR9 (PEX) Tubing | ASTM F 1807 |
| Polyethylene (PE) plastic | ASTM D 2609 |
| Polyvinyl chloride (PVC) plastic | ASTM D 2464; ASTM D 2466; ASTM D 2467; CSA CAN/CSA-B137.2 |
| Steel | ASME B16.9; ASME B16.11; ASME B16.28 |

**TABLE 403.1
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES**

(see Sections 403.2 and 403.3)

| NO. | CLASSIFICATION | USE GROUP | DESCRIPTION | WATER CLOSETS (URINALS SEE SECTION 419.2) | | LAVATORIES | | BATHTUBS/ SHOWERS | DRINKING FOUNTAIN (SEE SECTION 410.1) | OTHER |
|-----|--|-----------|---|---|--|------------|-----------|----------------------|--|----------------|
| | | | | Male | Female | Male | Female | | | |
| 1 | Assembly (see Sections 403.2, 403.5 and 403.6) | A-1 | Theaters usually with fixed seats and other buildings for the performing arts and motion pictures | 1 per 125 | 1 per 65 | 1 per 200 | | — | 1 per 500 | 1 service sink |
| | | A-2 | Nightclubs, bars, taverns, dance halls and buildings for similar purposes | 1 per 40 | 1 per 40 | 1 per 75 | | — | 1 per 500 | 1 service sink |
| | | | Restaurants, banquet halls and food courts | 1 per 75 | 1 per 75 | 1 per 200 | | — | 1 per 500 | 1 service sink |
| | | A-3 | Auditoriums without permanent seating, art galleries, exhibition halls, museums, lecture halls, libraries, arcades and gymnasiums | 1 per 125 | 1 per 65 | 1 per 200 | | — | 1 per 500 | 1 service sink |
| | | | Passenger terminals and transportation facilities | 1 per 500 | 1 per 500 | 1 per 750 | | — | 1 per 1,000 | 1 service sink |
| | | A-3 | Places of worship and other religious services. Churches without assembly halls ^b | 1 per 150 | 1 per 75 | 1 per 200 | | — | 1 per 1,000 | 1 service sink |
| | | A-4 | Coliseums, arenas, skating rinks, pools and tennis courts for indoor sporting events and activities | 1 per 75 for the first 1500 and 1 per 120 for the remainder | 1 per 40 for the first 1500 and 1 per 60 for the remainder | 1 per 200 | 1 per 150 | — | 1 per 1,000 | 1 service sink |
| | | A-5 | Stadiums, amusement parks, bleachers and grandstands for outdoor sporting events and activities | 1 per 75 for the first 1500 and 1 per 120 for the remainder | 1 per 40 for the first 1500 and 1 per 60 for the remainder | 1 per 200 | 1 per 150 | — | 1 per 1,000 | 1 service sink |

TABLE 403.1 (continued)
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES

(see Sections 403.2 and 403.3)

| NO. | CLASSIFICATION | USE GROUP | DESCRIPTION | WATER CLOSETS (URINALS SEE SECTION 419.2) | | LAVATORIES | | BATHTUB/ SHOWER | DRINKING FOUNTAIN (SEE SECTION 410.1) | OTHER |
|-----|--|-------------|--|--|--------|-------------------------|--------|-----------------------|---|--------------------------|
| | | | | Male | Female | Male | Female | | | |
| 2 | Business (see Sections 403.2, 403.4 and 403.6) | B | Buildings for the transaction of business, professional services, other services involving merchandise, office buildings, banks, light industrial and similar uses | 1 per 50 | | 1 per 80 | | — | 1 per 100 | 1 service sink |
| 3 | Educational | E | Educational facilities | 1 per 50 | | 1 per 50 | | — | 1 per 100 | 1 service sink |
| 4 | Factory and industrial | F-1 and F-2 | Structures in which occupants are engaged in work fabricating, assembly or processing of products or materials | 1 per 100 | | 1 per 100 | | (see Section 411) | 1 per 400 | 1 service sink |
| 5 | Institutional | I-1 | Residential care | 1 per 10 | | 1 per 10 | | 1 per 8 | 1 per 100 | 1 service sink |
| | | I-2 | Hospitals, ambulatory nursing home patients ^c | 1 per room ^d | | 1 per room ^d | | 1 per 15 | 1 per 100 | 1 service sink per floor |
| | | | Employees, other than residential care ^c | 1 per 25 | | 1 per 35 | | — | 1 per 100 | — |
| | | | Visitors, other than residential care | 1 per 75 | | 1 per 100 | | — | 1 per 500 | — |
| | | I-4 | Adult daycare and childcare ^c | 1 per 15 | | 1 per 15 | | 1 per 15 ^e | 1 per 100 | 1 service sink |
| | | I-3 | Prisons ^c | 1 per cell | | 1 per cell | | 1 per 15 | 1 per 100 | 1 service sink |
| | | I-3 | Reformatories, detention centers, and correctional centers ^c | 1 per 15 | | 1 per 15 | | 1 per 15 | 1 per 100 | 1 service sink |

TABLE 403.1 (continued)
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES

(see Sections 403.2 and 403.3)

| NO. | CLASSIFICATION | USE GROUP | DESCRIPTION | WATER CLOSETS (URINALS SEE SECTION 419.2) | | LAVATORIES | | BATHTUB/ SHOWER | DRINKING FOUNTAIN (SEE SECTION 410.1) | OTHER |
|-----|--|------------|--|--|--------|---------------------|--------|---------------------|--|---|
| | | | | Male | Female | Male | Female | | | |
| 6 | Mercantile (see Sections 403.2, 403.5 and 403.6) | M | Retail stores, service stations, shops, salesrooms, markets and shopping centers | 1 per 500 | | 1 per 750 | | — | 1 per 1,000 | 1 service sink |
| 7 | Residential | R-1 | Hotels, motels, boarding houses (transient) | 1 per guestroom | | 1 per guestroom | | 1 per guestroom | — | 1 service sink |
| | | R-2 | Dormitories, fraternities, sororities and boarding house (not transient) | 1 per 10 | | 1 per 10 | | 1 per 8 | 1 per 100 | 1 service sink |
| | | R-2 | Apartment house | 1 per dwelling unit | | 1 per dwelling unit | | 1 per dwelling unit | — | 1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per 20 dwelling units |
| | | R-3 | One- and two-family dwellings | 1 per dwelling unit | | 1 per dwelling unit | | 1 per dwelling unit | — | 1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per dwelling unit |
| | | R-4 | Residential care/assisted living facilities | 1 per 10 | | 1 per 10 | | 1 per 8 | 1 per 100 | 1 service sink |
| 8 | Storage (see Sections 403.2 and 403.4) | S-1 S-2 | Structures for the storage of goods, warehouses, storehouse and freight depots, low and moderate hazard. | 1 per 100 | | 1 per 100 | | See Section 411 | 1 per 1,000 | 1 service sink |

(Footnotes unchanged)

IECC

502.2.5 Prescriptive path for additions and window replacements. As an alternative to demonstrating compliance with Section 402 or 502.2, additions with a conditioned floor area less than 500 square feet (46.5 m²) to existing single-family residential buildings and structures shall meet the prescriptive envelope component criteria in Table 502.2.5 for the designated heating degree days (HDD) applicable to the location. The *U*-factor of each individual fenestration product (windows, doors and skylights) shall be used to calculate an area-weighted average fenestration product *U*-factor for the addition, which shall not exceed the applicable listed values in Table 502.2.5. For additions, other than sunroom additions, the total area of fenestration products shall not exceed 40 percent of the gross wall and roof area of the addition. The *R*-values for opaque thermal envelope components shall be equal to or greater than the applicable listed values in Table 502.2.5. Replacement fenestration products (where the entire unit, including the frame, sash and glazing, is replaced) shall meet the prescriptive fenestration *U*-factor criteria in Table 502.2.5 for the designated HDD applicable to the location. Conditioned sunroom additions shall be served by a separate heating or cooling system, or shall be controlled as a separate zone of the existing system. Fenestration products used in additions and as replacement windows in accordance with this section shall also meet the requirements of Section 502.1.5 in locations with HDD less than 3,500.

Exception: Replacement skylights shall have a maximum *U*-factor of 0.50 when installed in any location above 1,999 HDD.

Table 502.2.5 Add new footnote ‘e’ as shown: (EC30-00)

| Fenestration U-factor ^e |
|------------------------------------|
|------------------------------------|

e. Sunroom additions that maintain thermal isolation shall be required to have a maximum *U*-factor of 0.50 in locations ≥ 2,000 HDD.

IMC

202-DEFINITIONS.

COMMERCIAL KITCHEN HOODS:

Backshelf Hood. A backshelf hood is also referred to as a low-proximity hood, or as a sidewall hood where wall mounted. Its front lower lip is low over the appliance(s) and is “set back” from the front of the appliance(s). It is always closed to the rear of the appliances by a panel where free-standing, or by a panel or wall where wall mounted, and its height above the cooking surface varies. (This style of hood can be constructed with partial end panels to increase its effectiveness in capturing the effluent generated by the cooking operation).

Double Island Canopy Hood. A double island canopy hood is placed over back-to-back appliances or appliance lines. It is open on all sides and overhangs both the fronts and the sides of the appliance(s). It could have a wall panel between the backs of the appliances. (The fact that exhaust air is drawn from both sides of the double canopy to meet in the center causes each side of this hood to emulate a wall canopy hood, and thus it functions much the same with or without an actual wall panel between the backs of the appliances).

Eyebrow Hood. An eyebrow hood is mounted directly to the face of an appliance, such as an oven and dishwasher, above the opening(s) or door(s) from which effluent is emitted, extending past the sides and overhanging the front of the opening to capture the effluent.

Pass-over Hood. A pass-over hood is a free-standing form of a backshelf hood constructed low enough to pass food over the top.

Single Island Canopy Hood. A single island canopy hood is placed over a single appliance or appliance line. It is open on all sides and overhangs the front, rear, and sides of the appliance(s). (A single island canopy is more susceptible to cross drafts and requires a greater exhaust air flow than an equivalent sized wall-mounted canopy to capture and contain effluent generated by the cooking operation(s)).

Wall Canopy Hood. A wall canopy exhaust hood is mounted against a wall above a single appliance or line of appliance(s), or it could be free-standing with a back panel from the rear of the appliances to the hood. It overhangs the front and sides of the appliance(s) on all open sides. (The wall acts as a back panel, forcing the makeup air to be drawn across the front of the cooking equipment, thus increasing the effectiveness of the hood to capture and contain effluent generated by the cooking operation(s)).

EXTRA-HEAVY-DUTY COOKING APPLIANCE. Extra-heavy-duty cooking appliances include appliances utilizing solid fuel such as wood, charcoal, briquettes, and mesquite as the primary source of heat for cooking.

FIREPLACE STOVE. A free-standing chimney-connected solid-fuel-burning heater, designed to be operated with the fire chamber doors in either the open or closed position.

507.13 Capacity of hoods. Commercial food service hoods shall exhaust a minimum net quantity of air determined in accordance with this section and Sections 507.13.1 through 507.13.4. The net quantity of exhaust air shall be calculated by subtracting any air flow supplied directly to a hood cavity from the total exhaust flow rate of a hood. Where any combination of Extra-heavy-duty, heavy-duty, medium-duty, and light-duty cooking appliances are utilized under a single hood, the highest exhaust rate required by this section shall be used for the entire hood.

507.13.1 Extra-heavy-duty cooking appliances. The minimum net airflow for Type I hoods used for extra-heavy-duty cooking appliances shall be determined as follows:

| Type of Hood | CFM per linear foot of hood |
|---------------------------------|-----------------------------|
| Wall-mounted canopy | 550 |
| Single island canopy | 700 |
| Double island canopy (per side) | 550 |
| Backshelf/pass-over | Not allowed |
| Eyebrow | Not allowed |

507.13.2 Heavy-duty cooking appliances. The minimum net airflow for Type I hoods used for heavy-duty cooking appliances shall be determined as follows:

| Type of Hood | CFM per linear foot of hood |
|---------------------------------|-----------------------------|
| Wall-mounted canopy | 400 |
| Single island canopy | 600 |
| Double island canopy (per side) | 400 |
| Backshelf/pass-over | 400 |
| Eyebrow | Not allowed |

507.13.3 Medium-duty cooking appliances. The minimum net airflow for Type I hoods used for medium-duty cooking appliances shall be determined as follows:

| Type of Hood | CFM per linear foot of hood |
|---------------------------------|-----------------------------|
| Wall-mounted canopy | 300 |
| Single island canopy | 500 |
| Double island canopy (per side) | 300 |
| Backshelf/pass-over | 300 |
| Eyebrow | 250 |

507.13.4 Light-duty cooking appliances. The minimum net airflow for Type I hoods used for light-duty cooking appliances and food service preparation and cooking operations approved for use under a Type II hood shall be determined as follows:

| Type of Hood | CFM per linear foot of hood |
|---------------------------------|-----------------------------|
| Wall-mounted canopy | 200 |
| Single island canopy | 400 |
| Double island canopy (per side) | 250 |
| Backshelf/pass-over | 250 |
| Eyebrow | 250 |

602.2.1 Materials exposed within plenums. Except as required by Sections 602.2.1.1 through 602.2.1.4, materials exposed within plenums shall be noncombustible or shall have a flame spread index of not more than 25 and a smoke-developed index of not more than 50 when tested in accordance with ASTM E 84.

Exceptions:

1. Rigid and flexible ducts and connectors shall conform to Section 603.
2. Duct coverings, linings, tape and connectors shall conform to Sections 603 and 604.
3. This section shall not apply to materials exposed within plenums in one- and two-family dwellings.
4. This section shall not apply to smoke detectors.

5. Combustible materials enclosed in approved gypsum board assemblies or enclosed in materials listed and labeled for such application.

602.4 Flood hazard. For structures located in flood hazard areas, plenum spaces shall be located above the design flood elevation or shall be designed and constructed to prevent water from entering or accumulating within the plenum spaces during floods up to the design flood elevation. If the plenum spaces are located below the design flood elevation, they shall be capable of resisting hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to the design flood elevation.

IFGC

302.4 Alterations to trusses. Truss members and components shall not be cut, drilled, notched, spliced or otherwise altered in any way without the written concurrence and approval of a registered design professional. Alterations resulting in the addition of loads to any member (e.g., HVAC equipment, water heaters), shall not be permitted without verification that the truss is capable of supporting such additional loading.

303.3 Prohibited locations. Appliances shall not be located in, or obtain combustion air from, any of the following rooms or spaces:

1. Sleeping rooms.
2. Bathrooms.
3. Toilet rooms.
4. Storage closets.
5. Surgical rooms.

Exceptions:

1. Direct-vent appliances that obtain all combustion air directly from the outdoors.
2. Vented room heaters, wall furnaces, vented decorative appliances and decorative appliances for installation in vented solid fuel-burning fireplaces, provided that the room is not a confined space and the building is not of unusually tight construction.
3. A single wall-mounted unvented room heater equipped with an oxygen depletion safety shutoff system and installed in a bathroom provided that the input rating does not exceed 6000 Btu per hour (1.76kW) and the bathroom is not a confined space.
4. A single wall-mounted unvented room heater equipped with an oxygen depletion safety shutoff system and installed in a bedroom provided that the input rating does not exceed 10,000 Btu per hour (2.93 kW) and the bedroom is not a confined space.
5. Appliances installed in an enclosure in which all combustion air is taken from the outdoors, in accordance with Section 304.11. Access to such enclosure shall be through a solid weather-stripped door, equipped with an approved self-closing device.

305.5 Construction and protection. Boiler rooms and furnace rooms shall be protected as required by the *International Building Code*.

305.6 Clearances from grade. Equipment and appliances installed at grade level shall be supported on a level concrete slab or other approved material extending above adjoining grade or shall be suspended a minimum of 6 inches (152 mm) above adjoining grade.

305.7 Clearances to combustible construction. Heat-producing equipment and appliances shall be installed to maintain the required clearances to combustible construction as specified in the listing and manufacturer's instructions. Such clearances shall be reduced only in accordance with Section 308. Clearances to combustibles shall include such considerations as door swing, drawer pull, overhead projections or shelving and window swing. Devices such as door stops or limits and closers shall not be used to provide the required clearances.

602.1 General. Decorative appliances for installation in approved solid fuel-burning fireplaces shall be tested in accordance with ANSI Z21.60 and shall be installed in accordance with the manufacturer's installation instructions. Manually lighted natural gas decorative appliances shall be tested in accordance with ANSI Z21.84.

602.2 Flame safeguard device. Decorative appliances for installation in approved solid fuel-burning fireplaces, with the exception of those tested in accordance with ANSI Z21.84, shall utilize a direct ignition device, an ignitor or a pilot flame to ignite the fuel at the main burner, and shall be equipped with a flame safeguard device. The flame safeguard device shall automatically shut off the fuel supply to a main burner or group of burners when the means of ignition of such burners becomes inoperative.

SECTION 604 VENTED GAS FIREPLACES (DECORATIVE APPLIANCES)

604.1 General. Vented gas fireplaces shall be tested in accordance with ANSI Z21.50, shall be installed in accordance with

the manufacturer's installation instructions and shall be designed and equipped as specified in Section 602.2.

SECTION 605 (IFGC) VENTED GAS FIREPLACE HEATERS

605.1 General. Vented gas fireplace heaters shall be installed in accordance with the manufacturer's installation instructions, shall be tested in accordance with ANSI Z21.88 and shall be designed and equipped as specified in Section 602.2.

607.1 General. Vented wall furnaces shall be tested in accordance with ANSI Z21.49 or Z21.86/CSA 2.32 and shall be installed in accordance with the manufacturer's installation instructions.

608.1 General. Floor furnaces shall be tested in accordance with ANSI Z21.48 or Z21.86/CSA 2.32 and shall be installed in accordance with the manufacturer's installation instruction.

621.1 General. Vented room heaters shall be tested in accordance with ANSI Z21.11.1 or Z21.86/CSA 2.32, shall be designed and equipped as specified in Section 602.2 and shall be installed in accordance with the manufacturer's installation instructions.

630.1 Standards. Boilers shall be listed in accordance with the requirements of ANSI Z21.13 or UL 795. If applicable, the boiler shall be designed and constructed in accordance with the requirements of ASME CSD-1 and as applicable, the ASME Boiler and Pressure Vessel Code Sections I, II, IV, V and IX and NFPA 85.

SECTION 632 FUEL CELL POWER PLANTS

632.1 General. Stationary fuel cell power plants shall be tested in accordance with ANSI Z21.83 and shall be installed in accordance with the manufacturer's installation instructions.

CHAPTER 7

REFERENCED STANDARDS

Change the following referenced standards to read as shown:

ANSI American National Standard Institute
25 West 43rd Street 4th Floor
New York, NY 10036

| Standard reference number | Title | Referenced in code section number |
|---------------------------|---|-----------------------------------|
| Z21.1—00 | Household Cooking Gas Appliances | 622.1 |
| Z21.5.1—99 | Gas Clothes Dryers - Volume I - Type 1 Clothes Dryers | 612.1 |
| Z21.5.2—99 | Gas Clothes Dryers - Volume II - Type 2 Clothes Dryers with Z21.5.2a-99 and Z21.5.2b-99 Addendum | 612.1, 613.3 |
| Z21.10.3—98 | Gas Water Heaters - Volume III - Storage, Water Heaters with Input Ratings Above 75,000 Btu per hour, Circulating and Instantaneous Water Heaters—with Z21.10.3a-99 Addenda | 623.1 |
| Z21.11.2—96 | Gas-Fired Room Heaters-Volume II-Unvented Room Heaters—with Z21.11.2a-97 and Z21.11.2b-98 Addendum | 620.1 |
| Z21.13—99 | Gas-Fired Low-Pressure Steam and Hot Water Boilers—with Addenda Z21.13a-1993 and Z21.13b-1994 | 630.1 |
| Z21.40.1—96 | Gas-Fired Absorption Summer Air Conditioning Appliances—with Z21.40.1a-98 Addenda | 626.1 |
| Z21.40.2—96 | Gas Fired Work Activated Air Conditioning and Heat Pump Appliances (Internal Combustion)—with Z21.40.2a-97 Addenda | 626.1 |
| Z21.47—00 | Gas-Fired Central Furnaces—with Addenda Z21.47a- 00 | 617.1 |
| Z21.50—98 | Vented Gas Fireplaces | 604.1 |
| Z21.56—98 | Gas-Fired Pool Heaters—with Z21.56a-99 Addenda | 622.1 |
| Z21.83—98 | Fuel Cell Power Plants | 632.1 |
| Z21.84—99 | Manually-Lighted, Decorative Gas Appliances for Installation in Solid Fuel Burning Fireplaces | 602.1, 602.2 |
| Z21.86—98/CSA 2.32M98 | Gas-Fired Vented Space Heating Appliances | 607.1, 608.1, 621.1 |
| Z21.88—99 | Vented Gas Fireplace Heaters | 605.1 |
| Z83.4—99 | Direct Gas-Fired Make-Up Air Heaters | 610.1 |
| Z83.6—90 (1998) | Gas-Fired Infrared Heaters | 629.1 |
| Z83.18—00 | Direct Gas-Fired Industrial Air Heaters | 611.1 |

ASME American Society of Mechanical Engineers
Three Park Avenue
New York, NY 10016-5990

| Standard reference number | Title | Referenced in code section number |
|---------------------------|--|-----------------------------------|
| B1.20.192— | Pipe Threads, General Purpose (inch) | 403.9 |
| B16.1—98 | Cast Iron Pipe Flanges and Flanged Fittings, Class 25, 125, 250, and 800 | 403.12 |
| B16.20—98 | Metallic Gaskets for Pipe Flanges: Ring-Joint, Spiral-Wound, and Jacketed with B16.20a-2000 Addenda | 403.12 |
| B16.33—90 | Manually Operated Metallic Gas Valves for Use in Gas Piping Systems up to 125 psig (Sizes 1/2 through 2) | 409.1.1 |
| B36.10M— 00 | Welded and Seamless Wrought-Steel Pipe | 403.4.2 |
| ASME—01 | ASME Boiler and Pressure Vessel Code (2001 Edition) | 630.1 |
| CSD-1—98 | Controls and Safety Devices for Automatically Fired Boilers with the ASME CSD-1a-1999 Addenda | 630.1 |

ASTM ASTM International
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959

| Standard reference number | Title | Referenced in code section number |
|---------------------------|---|-----------------------------------|
| A 53/A 53M—00) | Specification for Pipe, Steel, Black and Hot Dipped Zinc-Coated Welded and Seamless | 403.4.2 |
| A 106—99 | Specification for Seamless Carbon Steel Pipe for High-Temperature Service | 403.4.2 |
| A 539—99 | Specification for Electric Resistance-Welded Coiled Steel Tubing for Gas and Fuel Oil Lines | 403.5.1 |

ASTM-continued

| | |
|---|-------------------------|
| B 88—99 Specification for Seamless Copper Water Tube | 403.5.2 |
| B 210—00 Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes | 403.5.3 |
| B 241/B 241M-00 Specification for Aluminum and Aluminum-Alloy, Seamless Pipe and Seamless Extruded Tube | 403.4.4, 403.5.3 |
| B 280—99 Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service | 403.5.2 |
| C 64—94 Specification for Refractories for Incinerators and Boilers | 503.10.2.5 |
| C 315—00 Specification for Clay Flue Linings | 501.12 |
| D 2513—00 Specification for Thermoplastic Gas Pressure Pipe, Tubing, and Fittings | 403.6, 403.11, 404.14.2 |



American Water Works Association
6666 West Quincy Avenue
Denver, CO 80235

| Standard reference number | Title | Referenced in code section number |
|---------------------------------|--|---|
| C111—00 | Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings | 403.12 |



International Approval Services
8501 East Pleasant Valley Road
Cleveland, OH 44131

| Standard reference number | Title | Referenced in code section number |
|---------------------------------|---|---|
| IAS 8—93 | Requirements for Gas-Fired Log Lighters for Wood Burning Fireplaces | 603.1 |



National Fire Protection Association
1 Batterymarch Park
P.O. Box 9101
Quincy, MA 02269-9101

| Standard reference number | Title | Referenced in code section number |
|---------------------------------|--|---|
| 58—01 | Liquified Petroleum Gases Code | 401.2, 402.5.1, 4.3.6.2, 403.11 |
| 85—01 | Boiler and Combustion Systems Hazards Code | 630.1 |
| 85—01 | Boiler and Combustion Systems Hazards Code | 630.1 |
| 85—01 | Boiler and Combustion Systems Hazards Code | 630.1 |
| 211—00 | Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances | 503.5.2, 503.5.3, 503.5.6.1, 503.5.6.3 |



Underwriters Laboratories
333 Pfingsten Road
Northbrook, IL 60062-2096

| Standard reference number | Title | Referenced in code section number |
|---------------------------------|--|---|
| UL 127—96 | Factory-Built Fireplaces - with Revisions thru November 1999 | 620.7 |
| UL 641—95 | Low Temperature Venting Systems, Type L-with Revisions thru April 1999 | 502.1, |
| UL 795—99 | Commercial-Industrial Gas Heating Equipment | 609.1,617.1,630.1 |

IBC APPENDICES

F101.2 Foundation wall ventilation openings. Foundation wall ventilator openings shall be covered for their height and width with perforated sheet metal plates no less than 0.070 inch (1.8 mm) thick, expanded sheet metal plates not less than 0.047 inch (1.2 mm) thick, cast iron grills or grating, extruded aluminum load-bearing vents or with hardware cloth of 0.035 inch (0.89 mm) wire or heavier. The openings therein shall not exceed 1/4 inch (6.4 mm).

F101.6 Pier and wood construction.

H101.2 Signs exempt from permits. The following signs are exempt from the requirements to obtain a permit before erection:

1. Painted nonilluminated signs.
2. Temporary signs announcing the sale or rent of property.
3. Signs erected by transportation authorities.
4. Projecting signs not exceeding 2.5 square feet (0.23 m²).
5. The changing of moveable parts of an approved sign that is designed for such changes, or the repainting or repositioning of display matter shall not be deemed an alteration.

SECTION H102 DEFINITIONS

H102.1 General. Unless otherwise expressly stated, the following words and terms shall, for the purposes of this appendix, have the meanings shown herein. Refer to Chapter 2 of the *International Building Code* for general definitions.

COMBINATION SIGN. A sign incorporating any combination of the features of pole, projecting and roof signs.

DISPLAY SIGN. The area made available by the sign structure for the purpose of displaying the advertising message.

ELECTRIC SIGN. A sign containing electrical wiring, but not including signs illuminated by an exterior light source.

GROUND SIGN. A billboard or similar type of sign which is supported by one or more uprights, poles or braces in or upon the ground other than a combination sign or pole sign, as defined by this code.

POLE SIGN. A sign wholly supported by a sign structure in the ground.

PORTABLE DISPLAY SURFACE. A display surface temporarily fixed to a standardized advertising structure which is regularly moved from structure to structure at periodic intervals.

PROJECTING SIGN. A sign other than a wall sign, which projects from and is supported by a wall of a building or structure.

ROOF SIGN. A sign erected upon or above a roof or parapet of a building or structure.

SIGN. Any letter, figure, character, mark, plane, point, marquee sign, design, poster, pictorial, picture, stroke, stripe, line, trademark, reading matter or illuminated service, which shall be constructed, placed, attached, painted, erected, fastened or manufactured in any manner whatsoever, so that the same shall be used for the attraction of the public to any place, subject, person, firm, corporation, public performance, article, machine or

merchandise, whatsoever, which is displayed in any manner outdoors. Every sign shall be classified and conform to the requirements of that classification as set forth in this chapter.

SIGN STRUCTURE. Any structure which supports or is capable of supporting a sign as defined in this code. A sign structure is permitted to be a single pole and is not required to be an integral part of the building.

WALL SIGN. Any sign attached to or erected against the wall of a building or structure, with the exposed face of the sign in a plane parallel to the plane of said wall.

SECTION H103

LOCATION

H103.1 Location restrictions. Signs shall not be erected, constructed or maintained so as to obstruct any fire escape or any window or door or opening used as a means of egress or so as to prevent free passage from one part of a roof to any other part thereof. A sign shall not be attached in any form, shape or manner to a fire escape, nor be placed in such manner as to interfere with any opening required for ventilation.

SECTION H105

DESIGN AND CONSTRUCTION

H105.1 General requirements. Signs shall be designed and constructed to comply with the provisions of this code for use of materials, loads and stresses.

H105.2 Permits, drawings and specifications. Where a permit is required, as provided in Chapter 1, construction documents shall be required. These documents shall show the dimensions, material and required details of construction, including loads, stresses and anchors.

H105.3 Wind load. Signs shall be designed and constructed to withstand wind pressure as provided for in Chapter 16.

H105.4 Seismic load. Signs designed to withstand wind pressures shall be considered capable of withstanding earthquake loads, except as provided for in Chapter 16.

H105.5 Working stresses. In outdoor advertising display signs, the allowable working stresses shall conform to the requirements of Chapter 16. The working stresses of wire rope and its fastenings shall not exceed 25 percent of the ultimate strength of the rope or fasteners.

Exceptions:

1. The allowable working stresses for steel and wood shall be in accordance with the provisions of Chapters 22 and 23.
2. The working strength of chains, cables, guys or steel rods shall not exceed one-fifth of the ultimate strength of such chains, cables, guys or steel.

H105.6 Attachment. Signs attached to masonry, concrete or steel shall be safely and securely fastened by means of metal anchors, bolts or approved expansion screws of sufficient size and anchorage to safely support the loads applied.

SECTION H106 ELECTRICAL

H106.1 Illumination. A sign shall not be illuminated by other than electrical means, and electrical devices and wiring shall be installed in accordance with the requirements of the ICC *Electrical Code*. Any open spark or flame shall not be used for display purposes unless specifically approved.

H106.1.1 Internally illuminated signs. Except as provided for in Sections 402.14 and 2611, where internally illuminated signs have sign facings of wood or approved plastic, the area of such facing section shall not be more than 120 square feet (11.16 m²) and the wiring for electric lighting shall be entirely enclosed in the sign cabinet with a clearance of not less than 2 inches (51 mm) from the facing material. The dimensional limitation of 120 square feet (11.16 m²) shall not apply to sign facing sections made from flame-resistant-coated fabric (ordinarily known as “flexible sign face plastic”) that weighs less than 20 ounces per square yard (678 g/m²) and which, when tested in accordance with NFPA 701, meets the requirements of both the small-scale test and the large-scale test, or which, when tested in accordance with an approved test method, exhibits an average burn time for 10 specimens of 2 seconds or less and a burning extent of 15 centimeters or less.

H106.2 Electrical service. Signs that require electrical service shall comply with the ICC *Electrical Code*.

SECTION H107 COMBUSTIBLE MATERIALS

H107.1 Use of combustibles. Wood, approved plastic or plastic veneer panels as provided for in Chapter 26, or other materials of combustible characteristics similar to wood, used for moldings, cappings, nailing blocks, letters and latticing, shall comply with Section H109.1, and shall not be used for other ornamental features of signs, unless approved.

H107.1.1 Plastic materials. Notwithstanding any other provisions of this code, plastic materials which burn at a rate no faster than 2.5 inches per minute (64 mm/s) when tested in accordance with ASTM D 635 shall be deemed approved plastics and can be used as the display surface material and for the letters, decorations and facings on signs and outdoor display structures.

H107.1.2 Electric sign faces. Individual plastic facings of electric signs shall not exceed 200 square feet (18.6 m²) in area.

H107.1.3 Area limitation. If the area of a display surface exceeds 200 square feet (18.6 m²), the area occupied or covered by approved plastics shall be limited to 200 square feet (18.6 m²) plus 50 percent of the difference between 200 square feet (18.6 m²) and the area of display surface. The area of plastic on a display surface shall not in any case exceed 1,100 square feet (102 m²).

H107.1.4 Plastic appurtenances. Letters and decorations mounted on an approved plastic facing or display surface can be made of approved plastics.

SECTION H108 ANIMATED DEVICES

H108.1 Fail-safe device. Signs that contain moving sections or ornaments shall have fail-safe provisions to prevent the section or ornament from releasing and falling or shifting its center of gravity more than 15 inches (381 mm). The fail-safe device shall be in addition to the mechanism and the mechanism’s housing which operate the movable section or ornament. The fail-safe device shall be capable of supporting the full dead weight of the section or ornament when the moving mechanism releases.

SECTION H109 GROUND SIGNS

H109.1 Height restrictions. The structural frame of ground signs shall not be erected of combustible materials to a height of more than 35 feet (10668 mm) above the ground. Ground signs constructed entirely of noncombustible material shall not be erected to a height of greater than 100 feet (30 480 mm) above the ground. Greater heights are permitted where approved and located so as not to create a hazard or danger to the public.

H109.2 Required clearance. The bottom coping of every ground sign shall be not less than 3 feet (914 mm) above the ground or street level, which space can be filled with platform decorative trim or light wooden construction.

H109.3 Wood anchors and supports. Where wood anchors or supports are embedded in the soil, the wood shall be pressure treated with an approved preservative.

SECTION H110 ROOF SIGNS

H110.1 General. Roof signs shall be constructed entirely of metal or other approved noncombustible material except as provided for in Sections H106.1.1 and H107.1. Provisions shall be made for electric grounding of metallic parts. Where combustible materials are permitted in letters or other ornamental features, wiring and tubing shall be kept free and insulated therefrom. Roof signs shall be so constructed as to leave a clear space of not less than 6 feet (1829 mm) between the roof level and the lowest part of the sign and shall have at least 5 feet (1524 mm) clearance between the vertical supports thereof. No portion of any roof sign structure shall project beyond an exterior wall.

Exception: Signs on flat roofs with every part of the roof accessible.

H110.2 Bearing plates. The bearing plates of roof signs shall distribute the load directly to or upon masonry walls, steel roof girders, columns or beams. The building shall be designed to avoid overstress of these members.

H110.3 Height of solid signs. A roof sign having a solid surface shall not exceed, at any point, a height of 24 feet (7315 mm) measured from the roof surface.

H110.4 Height of open signs. Open roof signs in which the uniform open area is not less than 40 percent of total gross area shall not exceed a height of 75 feet (22 860 mm) on buildings of Type 1 or Type 2 construction. On buildings of other construction types, the height shall not exceed 40 feet (12 192 mm).

mm). Such signs shall be thoroughly secured to the building upon which they are installed, erected or constructed by iron, metal anchors, bolts, supports, chains, stranded cables, steel rods or braces and they shall be maintained in good condition.

H110.5 Height of closed signs. A closed roof sign shall not be erected to a height greater than 50 feet (15 240 mm) above the roof of buildings of Type 1 or Type 2 construction, nor more than 35 feet (10 668 mm) above the roof of buildings of Type 3, 4 or 5 construction.

SECTION H111 WALL SIGNS

H111.1 Materials. Wall signs which have an area exceeding 40 square feet (3.72 m²) shall be constructed of metal or other approved noncombustible material, except for nailing rails and as provided for in Sections H106.1.1 and H107.1.

H111.2 Exterior wall mounting details. Wall signs attached to exterior walls of solid masonry, concrete or stone shall be safely and securely attached by means of metal anchors, bolts or expansion screws of not less than $\frac{3}{8}$ inch (9.5 mm) diameter and shall be embedded at least 5 inches (127 mm). Wood blocks shall not be used for anchorage, except in the case of wall signs attached to buildings with walls of wood. A wall sign shall not be supported by anchorages secured to an unbraced parapet wall.

H111.3 Extension. Wall signs shall not extend above the top of the wall, nor beyond the ends of the wall to which the signs are attached unless such signs conform to the requirements for roof signs, projecting signs or ground signs.

SECTION H112 PROJECTING SIGNS

H112.1 General. Projecting signs shall be constructed entirely of metal or other noncombustible material and securely attached to a building or structure by metal supports such as bolts, anchors, supports, chains, guys or steel rods. Staples or nails shall not be used to secure any projecting sign to any building or structure. The dead load of projecting signs not parallel to the building or structure and the load due to wind pressure shall be supported with chains, guys or steel rods having net cross-sectional dimension of not less than $\frac{3}{8}$ inch (9.5 mm) diameter. Such supports shall be erected or maintained at an angle of at least 45 percent (0.78 rad) with the horizontal to resist the dead load and at angle of 45 percent (0.78 rad) or more with the face of the sign to resist the specified wind pressure. If such projecting sign exceeds 30 square feet (2.8 m²) in one facial area, there shall be provided at least two such supports on each side not more than 8 feet (2438 mm) apart to resist the wind pressure.

H112.2 Attachment of supports. Supports shall be secured to a bolt or expansion screw that will develop the strength of the supporting chains, guys or steel rods, with a minimum $\frac{5}{8}$ -inch (15.9 mm) bolt or lag screw, by an expansion shield. Turn buckles shall be placed in chains, guys or steel rods supporting projecting signs.

H112.3 Wall mounting details. Chains, cables, guys or steel rods used to support the live or dead load of projecting signs are permitted to be fastened to solid masonry walls with expansion

bolts or by machine screws in iron supports, but such supports shall not be attached to an unbraced parapet wall. Where the supports must be fastened to walls made of wood, the supporting anchor bolts must go through the wall and be plated or fastened on the inside in a secure manner.

H112.4 Height limitation. A projecting sign shall not be erected on the wall of any building so as to project above the roof or cornice wall or above the roof level where there is no cornice wall; except that a sign erected at a right angle to the building, the horizontal width of which sign is perpendicular to such a wall and does not exceed 18 inches (457 mm), is permitted to be erected to a height not exceeding 2 feet (610 mm) above the roof or cornice wall or above the roof level where there is no cornice wall. A sign attached to a corner of a building and parallel to the vertical line of such corner shall be deemed to be erected at a right angle to the building wall.

H112.5 Additional loads. Projecting sign structures which will be used to support an individual on a ladder or other servicing device, whether or not specifically designed for the servicing device, shall be capable of supporting the anticipated additional load, but not less than a 100-pound (445 N) concentrated horizontal load and a 300-pound (1334 N) concentrated vertical load applied at the point of assumed or most eccentric loading. The building component to which the projecting sign is attached shall also be designed to support the additional loads.

SECTION H113 MARQUEE SIGNS

H113.1 Materials. Marquee signs shall be constructed entirely of metal or other approved noncombustible material except as provided for in Sections H106.1.1 and H107.1.

H113.2 Attachment. Marquee signs shall be attached to approved marquees that are constructed in accordance with Section 3106.

H113.3 Dimensions. Marquee signs, whether on the front or side, shall not project beyond the perimeter of the marquee.

H113.4 Height limitation. Marquee signs shall not extend more than 6 feet (1829 mm) above, nor 1 foot (305 mm) below such marquee, but under no circumstances shall the sign or signs have a vertical dimension greater than 8 feet (2438 mm).

SECTION H114 PORTABLE SIGNS

H114.1 General. Portable signs shall conform to requirements for ground, roof, projecting, flat and temporary signs where such signs are used in a similar capacity. The requirements of this section shall not be construed to require portable signs to have connections to surfaces, tie-downs or foundations where provisions are made by temporary means or configuration of the structure to provide stability for the expected duration of the installation.

**TABLE 4-A
SIZE, THICKNESS AND TYPE OF GLASS PANELS IN SIGNS**

| MAXIMUM SIZE OF EXPOSED PANEL | | MINIMUM THICKNESS OF GLASS (inches) | TYPE OF GLASS |
|-------------------------------|----------------------|-------------------------------------|-----------------------|
| Any dimension (inches) | Area (square inches) | | |
| 30 | 500 | 1/8 | Plain, plate or wired |
| 45 | 700 | 3/16 | Plain, plate or wired |
| 144 | 3,600 | 1/4 | Plain, plate or wired |
| > 144 | > 3,600 | 1/4 | Wired glass |

For SI: 1 inch = 25.4 mm, 1 square inch = 645 mm².

**TABLE 4-B
THICKNESS OF PROJECTION SIGN**

| PROJECTION (feet) | MAXIMUM THICKNESS (feet) |
|-------------------|--------------------------|
| 5 | 2 |
| 4 | 2.5 |
| 3 | 3 |
| 2 | 3.5 |
| 1 | 4 |

For SI: 1 foot = 304.8 mm.

APPENDIX I PATIO COVERS

SECTION I101 GENERAL

I101.1 General. Patio covers shall be permitted to be detached from or attached to dwelling units. Patio covers shall be used only for recreational, outdoor living purposes and not as carports, garages, storage rooms or habitable rooms. Openings shall be permitted to be enclosed with insect screening, approved translucent or transparent plastic not more than 0.125 inch (3.2 mm) in thickness, glass conforming to the provisions of Chapter 24 or any combination of the foregoing.

SECTION I102 DEFINITIONS

I102.1 General. The following word and term shall, for the purposes of this appendix, have the meaning shown herein.

PATIO COVERS. One story structures not exceeding 12 feet (3657 mm) in height. Enclosure walls shall be permitted to be of any configuration, provided the open or glazed area of the longer wall and one additional wall is equal to at least 65 percent of the area below a minimum of 6 feet 8 inches (2032 mm) of each wall, measured from the floor.

SECTION I103 EXTERIOR OPENINGS

I103.1 Light, ventilation and emergency egress. Exterior openings required for light and ventilation shall be permitted to open into a patio structure. However, the patio structure shall be unenclosed if such openings are serving as emergency egress or rescue openings from sleeping rooms. Where such exterior openings serve as an exit from the dwelling unit, the patio structure, unless unenclosed, shall be provided with exits conforming to the provision of Chapter 10.

SECTION I104 STRUCTURAL PROVISIONS

I104.1 Design loads. Patio covers shall be designed and constructed to sustain, within the stress limits of this code, all dead loads plus a minimum vertical live load of 10 pounds per square foot (0.48 kN/m²) except that snow loads shall be used where such snow loads exceed this minimum. Such patio covers shall be designed to resist the minimum wind and seismic loads set forth in this code.

I104.2 Footings. In areas with a frost depth of zero, a patio cover shall be permitted to be supported on a concrete slab on grade without footings, provided the slab conforms to the provisions of Chapter 19 of this code, is not less than 3 1/2 inches (89 mm) thick and further provided that the columns do not support loads in excess of 750 pounds (3.36 kN) per column.