**Chapter 12 New Assembly Occupancies**

12.1 General Requirements

12.1.1 Application

12.1.1.1

The requirements of this chapter shall apply to new buildings or portions thereof used as an assembly occupancy. (See 1.3.1.)

12.1.1.2 Administration

The provisions of Chapter 1, Administration, shall apply.

12.1.1.3 General

The provisions of Chapter 4, General, shall apply.

12.1.1.4 Construction, Alteration, or Demolition Operations

Where construction, alteration, or demolition operations are conducted, the provisions of 4.6.10.2 shall apply.

12.1.2\* Classification of Occupancy

See 6.1.2.

12.1.3 Multiple Occupancies

12.1.3.1 General

Multiple occupancies shall be in accordance with 6.1.14.

12.1.3.2

Atrium walls in accordance with 6.1.14.4.6 shall be permitted to serve as part of the separation required by 6.1.14.4.1 for creating separated occupancies on a story-by-story basis.

12.1.3.3\* Simultaneous Occupancy

Exits shall be sufficient for simultaneous occupancy of both the assembly occupancy and other parts of the building, except where the authority having jurisdiction determines that the conditions are such that simultaneous occupancy will not occur.

12.1.3.4 Assembly and Mercantile Occupancies in Mall Structures

12.1.3.4.1

The provisions of Chapter 12 shall apply to the assembly occupancy tenant space.

12.1.3.4.2

The provisions of 36.4.4 shall be permitted to be used outside the assembly occupancy tenant space.

12.1.4 Definitions

12.1.4.1 General

For definitions, see Chapter 3, Definitions.

12.1.4.2\* Special Definitions

The following is a list of special terms used in this chapter:

Aisle Accessway. (See 3.3.11.)

Aisle Stair. (See 3.3.277.1.)

Exhibit. (See 3.3.82.)

Exhibitor. (See 3.3.83.)

Exposition. (See 3.3.89.)

Exposition Facility. (See 3.3.93.1.)

Festival Seating. (See 3.3.250.1.)

Flow Time. (See 3.3.121.)

Fly Gallery. (See 3.3.122.)

Gridiron. (See 3.3.132.)

Legitimate Stage. (See 3.3.276.1.)

Life Safety Evaluation. (See 3.3.168.)

Multilevel Play Structure. (See 3.3.284.6.)

Multipurpose Assembly Occupancy. (See 3.3.198.2.1.)

Pinrail. (See 3.3.219.)

Platform. (See 3.3.220.)

Proscenium Wall. (See 3.3.302.2.)

Regular Stage. (See 3.3.276.2.)

Smoke-Protected Assembly Seating. (See 3.3.250.4.)

Special Amusement Building. (See 3.3.37.9.)

Stage. (See 3.3.276.)

Temporary Platform. (See 3.3.220.1.)

12.1.5 Classification of Hazard of Contents

Contents of assembly occupancies shall be classified in accordance with the provisions of Section 6.2.

12.1.6 Minimum Construction Requirements

Assembly occupancies shall be limited to the building construction types specified in Table 12.1.6, based on the number of stories in height as defined in 4.6.3, unless otherwise permitted by the following (see 8.2.1):

This requirement shall not apply to outdoor grandstands of Type I or Type II construction.

This requirement shall not apply to outdoor grandstands of Type III, Type IV, or Type V construction that meet the requirements of 12.4.10.

This requirement shall not apply to grandstands of noncombustible construction supported by the floor in a building meeting the construction requirements of Table 12.1.6.

This requirement shall not apply to assembly occupancies within mall structures in accordance with 36.4.4.

Table 12.1.6 Construction Type Limitations

Construction Type Sprinklereda Stories Below Stories in Heightb

1 2 3 4 ≥5

I (442)c, d, e Yes X X X X X X

No NP X4 X4 X4 X4 X4

I (332)c, d, e Yes X X X X X X

No NP X4 X4 X4 X4 X4

II (222)c, d,e Yes X X X X X X

No NP X4 X4 X4 X4 X4

II (111)c, d, e Yes X1 X X X X3 NP

No NP X4 X4 X4 NP NP

II (000) Yes X2 X X4 NP NP NP

No NP X4 NP NP NP NP

III (211)d Yes X1 X X X X3 NP

No NP X4 X4 X4 NP NP

III (200) Yes X2 X3 X4 NP NP NP

No NP X4 NP NP NP NP

IV (2HH) Yes X1 X X X X3 NP

No NP X4 X4 X4 NP NP

V (111) Yes X1 X X X X3 NP

No NP X4 X4 X4 NP NP

V (000) Yes X2 X3 X4 NP NP NP

No NP X4 NP NP NP NP

X: Permitted for assembly of any occupant load.

X1: Permitted for assembly of any occupant load, but limited to one story below the level of exit discharge.

X2: Permitted for assembly limited to an occupant load of 1000 or less, and limited to one story below the level of exit discharge.

X3: Permitted for assembly limited to an occupant load of 1000 or less.

X4: Permitted for assembly limited to an occupant load of 300 or less.

NP: Not permitted.

aProtected by an approved, supervised automatic sprinkler system in accordance with Section 9.7 in the following locations:

Throughout the story of the assembly occupancy

Throughout all stories below the story of the assembly occupancy, including all stories below the level of exit discharge

In the case of an assembly occupancy located below the level of exit discharge, throughout all stories intervening between the story of the assembly occupancy and the level of exit discharge, including the level of exit discharge

bSee 4.6.3.

cWhere every part of the structural framework of roofs in Type I or Type II construction is 20 ft (6100 mm) or more above the floor immediately below, omission of all fire protection of the structural members is permitted, including protection of trusses, roof framing, decking, and portions of columns above 20 ft (6100 mm).

dIn open-air fixed seating facilities, including stadia, omission of fire protection of structural members exposed to the outside atmosphere is permitted where substantiated by an approved engineering analysis.

eWhere seating treads and risers serve as floors, such seating treads and risers are permitted to be of 1-hour-fire-resistance-rated construction. Structural members supporting seating treads and risers are required to conform to the requirements of Table 12.1.6. Joints between seating tread and riser units are permitted to be unrated, provided that such joints do not involve separation from areas containing high hazard contents and the facility is constructed and operated in accordance with 12.4.3.

12.1.7 Occupant Load

12.1.7.1\* General

The occupant load, in number of persons for whom means of egress and other provisions are required, shall be determined on the basis of the occupant load factors of Table 7.3.1.2 that are characteristic of the use of the space or shall be determined as the maximum probable population of the space under consideration, whichever is greater.

12.1.7.1.1

In areas not in excess of 10,000 ft2 (930 m2), the occupant load shall not exceed one person in 5 ft2 (0.46 m2).

12.1.7.1.2

In areas in excess of 10,000 ft2 (930 m2), the occupant load shall not exceed one person in 7 ft2 (0.65 m2).

12.1.7.2 Waiting Spaces

In theaters and other assembly occupancies where persons are admitted to the building at times when seats are not available, or when the permitted occupant load has been reached based on 12.1.7.1 and persons are allowed to wait in a lobby or similar space until seats or space is available, all of the following requirements shall apply:

Such use of a lobby or similar space shall not encroach upon the required clear width of exits.

The waiting spaces shall be restricted to areas other than the required means of egress.

Exits shall be provided for the waiting spaces on the basis of one person for each 3 ft2 (0.28 m2) of waiting space area.

Exits for waiting spaces shall be in addition to the exits specified for the main auditorium area and shall conform in construction and arrangement to the general rules for exits given in this chapter.

12.1.7.3 Life Safety Evaluation

Where the occupant load of an assembly occupancy exceeds 6000, a life safety evaluation shall be performed in accordance with 12.4.2.

12.1.7.4 Outdoor Facilities

In outdoor facilities, where approved by the authority having jurisdiction, the number of occupants who are each provided with not less than 15 ft2 (1.4 m2) of lawn surface shall be permitted to be excluded from the maximum occupant load of 6000 of 12.1.7.3 in determining the need for a life safety evaluation.

12.2 Means of Egress Requirements

12.2.1 General

12.2.1.1

All means of egress shall be in accordance with Chapter 7 and this chapter.

12.2.1.2

Where bathtubs, bathtub-shower combinations, or showers are present, grab bars shall be provided in accordance with the provisions of 24.2.8.

Upcodes Diagrams

12.2.2 Means of Egress Components

12.2.2.1 Components Permitted

Components of means of egress shall be limited to the types described in 12.2.2.2 through 12.2.2.12.

12.2.2.2 Doors

12.2.2.2.1

Doors complying with 7.2.1 shall be permitted.

12.2.2.2.2

Assembly occupancies with occupant loads of 300 or less in mall concourses (see 36.4.4.4.2(4)) shall be permitted to have horizontal or vertical security grilles or doors complying with 7.2.1.4.1(3) on the main entrance/exits.

12.2.2.2.3

Any door in a required means of egress from an area having an occupant load of 100 or more persons shall be permitted to be provided with a latch or lock only if the latch or lock is panic hardware or fire exit hardware complying with 7.2.1.7, unless otherwise permitted by one of the following:

This requirement shall not apply to delayed-egress electrical locking systems as permitted in 12.2.2.2.5.

This requirement shall not apply to sensor-release of electrical locking systems as permitted in 12.2.2.2.6.

12.2.2.2.4

Locking devices complying with 7.2.1.5.6 shall be permitted to be used on a single door or a single pair of doors if both of the following conditions apply:

The door or pair of doors serve as the main exit and the assembly occupancy has an occupant load not greater than 500.

Any latching devices on such a door(s) from an assembly occupancy having an occupant load of 100 or more are released by panic hardware or fire exit hardware.

12.2.2.2.5

Delayed-egress locks complying with 7.2.1.6.1 shall be permitted on doors other than main entrance/exit doors.

12.2.2.2.6

Doors in the means of egress shall be permitted to be equipped with an approved access control system complying with 7.2.1.6.2, and such doors shall not be locked from the egress side when the assembly occupancy is occupied. (See 7.2.1.1.3.)

12.2.2.2.7

Elevator lobby exit access door locking in accordance with 7.2.1.6.4 shall be permitted.

12.2.2.2.8

Revolving doors complying with the requirements of 7.2.1.10 shall be permitted.

12.2.2.2.9

The provisions of 7.2.1.11.1.1 to permit turnstiles where revolving doors are permitted shall not apply.

12.2.2.2.10

No turnstiles or other devices that restrict the movement of persons shall be installed in any assembly occupancy in such a manner as to interfere with required means of egress facilities.

12.2.2.3 Stairs

12.2.2.3.1 General

Stairs complying with 7.2.2 shall be permitted, unless one of the following criteria applies:

\*Stairs serving seating that is designed to be repositioned shall not be required to comply with 7.2.2.3.1.

This requirement shall not apply to stages and platforms as permitted by 12.4.7.1.2.

The stairs connecting only a stage or platform and the immediately adjacent assembly seating shall be permitted to have a handrail in the center only or on one side only.

The stairs connecting only a stage or platform and the immediately adjacent assembly seating shall be permitted to omit the guards required by 7.1.8 where both of the following criteria are met:

The guard would restrict audience sight lines to the stage or platform.

The height between any part of the stair and the adjacent floor is not more than 42 in. (1065 mm).

Stairs connecting aisle stairs with cross-aisles, concourses, or other aisle stairs and landings in compliance with 12.2.5.8.8 shall be permitted to comply with 12.2.5.8.6.

12.2.2.3.2 Catwalk, Gallery, and Gridiron Stairs

12.2.2.3.2.1

Noncombustible grated stair treads and landing floors shall be permitted in means of egress from lighting and access catwalks, galleries, and gridirons.

12.2.2.3.2.2

Spiral stairs complying with 7.2.2.2.3 shall be permitted in means of egress from lighting and access catwalks, galleries, and gridirons.

12.2.2.4 Smokeproof Enclosures

Smokeproof enclosures complying with 7.2.3 shall be permitted.

12.2.2.5 Horizontal Exits

Horizontal exits complying with 7.2.4 shall be permitted.

12.2.2.6 Ramps

Ramps complying with 7.2.5 shall be permitted, and the following alternatives shall also apply:

Ramps not part of an accessible means of egress and serving only stages or nonpublic areas shall be permitted to have a slope not steeper than 1 in 8.

Ramped aisles not part of an accessible means of egress shall be permitted to have a slope not steeper than 1 in 8.

12.2.2.7 Exit Passageways

Exit passageways complying with 7.2.6 shall be permitted.

12.2.2.8 Reserved

12.2.2.9 Reserved

12.2.2.10 Fire Escape Ladders

12.2.2.10.1

Fire escape ladders complying with 7.2.9 shall be permitted.

12.2.2.10.2

For ladders serving catwalks, the three-person limitation in 7.2.9.1(3) shall be permitted to be increased to 10 persons.

12.2.2.11 Alternating Tread Devices

Alternating tread devices complying with 7.2.11 shall be permitted.

12.2.2.12 Areas of Refuge

Areas of refuge complying with 7.2.12 shall be permitted.

12.2.3 Capacity of Means of Egress

12.2.3.1 General

The capacity of means of egress shall be in accordance with one of the following:

Section 7.3 for other than theater-type seating or smoke-protected assembly seating

12.2.3.2 for rooms with theater-type seating or similar seating arranged in rows

12.4.3 for smoke-protected assembly seating

12.2.3.2\* Theater-Type Seating

Minimum clear widths of aisles and other means of egress serving theater-type seating, or similar seating arranged in rows, shall be in accordance with Table 12.2.3.2.

Table 12.2.3.2 Capacity Factors

No. of Seats Clear Width per Seat Served

Stairs Passageways, Ramps, and Doorways

in. mm in. mm

Unlimited 0.3 AB 7.6 AB 0.22 C 5.6 C

12.2.3.3 Width Modifications

The minimum clear widths shown in Table 12.2.3.2 shall be modified in accordance with all of the following:

If risers exceed 7 in. in height, the stair width in Table 12.2.3.2 shall be multiplied by factor A, where A equals the following:

[12.2.3.3a]

If risers exceed 178 mm in height, the stair width in Table 12.2.3.2 shall be multiplied by factor A, where A equals the following:

[12.2.3.3b]

Stairs not having a handrail within a 30 in. (760 mm) horizontal distance shall be 25 percent wider than otherwise calculated; that is, their width shall be multiplied by factor B, where B equals the following:

Ramps steeper than 1 in 10 slope where used in ascent shall have their width increased by 10 percent; that is, their width shall be multiplied by factor C, where C equals the following:

12.2.3.4 Lighting and Access Catwalks

The requirements of 12.2.3.2 and 12.2.3.3 shall not apply to lighting and access catwalks as permitted by 12.4.7.9.

12.2.3.5 Reserved

12.2.3.6 Main Entrance/Exit

12.2.3.6.1

Every assembly occupancy shall be provided with a main entrance/exit.

12.2.3.6.2

The main entrance/exit width shall be as follows:

The main entrance/exit shall be of a width that accommodates two-thirds of the total occupant load in the following assembly occupancies:

Dance halls

Discotheques

Nightclubs

Assembly occupancies with festival seating

In assembly occupancies, other than those listed in 12.2.3.6.2(1), the main entrance/exit shall be of a width that accommodates one-half of the total occupant load.

12.2.3.6.3

The main entrance/exit shall be at the level of exit discharge or shall connect to a stairway or ramp leading to a street.

12.2.3.6.4

Access to the main entrance/exit shall be as follows:

Each level of the assembly occupancy shall have access to the main entrance/exit, and such access shall have the capacity to accommodate two-thirds of the occupant load of such levels in the following assembly occupancies:

Dance halls

Discotheques

Nightclubs

Assembly occupancies with festival seating

In assembly occupancies, other than those listed in 12.2.3.6.4(1), each level of the assembly occupancy shall have access to the main entrance/exit, and such access shall have the capacity to accommodate one-half of the occupant load of such levels.

12.2.3.6.5

Where the main entrance/exit from an assembly occupancy is through a lobby or foyer, the aggregate capacity of all exits from the lobby or foyer shall be permitted to provide the required capacity of the main entrance/exit, regardless of whether all such exits serve as entrances to the building.

12.2.3.6.6\*

In assembly occupancies where there is no well-defined main entrance/exit, exits shall be permitted to be distributed around the perimeter of the building, provided that the total exit width furnishes not less than 100 percent of the width needed to accommodate the permitted occupant load.

12.2.3.7 Other Exits

Each level of an assembly occupancy shall have access to the main entrance/exit and shall be provided with additional exits of a width to accommodate not less than one-half of the total occupant load served by that level.

12.2.3.7.1

Additional exits shall discharge in accordance with 12.2.7.

12.2.3.7.2

Additional exits shall be located as far apart as practicable and as far from the main entrance/exit as practicable.

12.2.3.7.3

Additional exits shall be accessible from a cross aisle or a side aisle.

12.2.3.7.4

In assembly occupancies where there is no well-defined main entrance/exit, exits shall be permitted to be distributed around the perimeter of the building, provided that the total exit width furnishes not less than 100 percent of the width required to accommodate the permitted occupant load.

12.2.3.8 Minimum Corridor Width

Diagram

The width of any exit access corridor serving 50 or more persons shall be not less than 44 in. (1120 mm).

UpCodes Diagrams

P

Min. Corridor Width by Occupancy (NFPA)

12.2.4\* Number of Means of Egress

12.2.4.1

The number of means of egress shall be in accordance with Section 7.4, other than exits for fenced outdoor assembly occupancies in accordance with 12.2.4.4.

12.2.4.2 Reserved

12.2.4.3 Reserved

12.2.4.4

A fenced outdoor assembly occupancy shall have not less than two remote means of egress from the enclosure in accordance with 7.5.1.3, unless otherwise required by one of the following:

If more than 6000 persons are to be served by such means of egress, there shall be not less than three means of egress.

If more than 9000 persons are to be served by such means of egress, there shall be not less than four means of egress.

12.2.4.5

Balconies or mezzanines having an occupant load not exceeding 50 shall be permitted to be served by a single means of egress, and such means of egress shall be permitted to lead to the floor below.

12.2.4.6

Balconies or mezzanines having an occupant load exceeding 50, but not exceeding 100, shall have not less than two remote means of egress, but both such means of egress shall be permitted to lead to the floor below.

12.2.4.7

Balconies or mezzanines having an occupant load exceeding 100 shall have means of egress as described in 7.4.1.

12.2.4.8

A second means of egress shall not be required from lighting and access catwalks, galleries, and gridirons where a means of escape to a floor or a roof is provided. Ladders, alternating tread devices, or spiral stairs shall be permitted in such means of escape.

12.2.5 Arrangement of Means of Egress

12.2.5.1 General

Means of egress shall be arranged in accordance with Section 7.5.

12.2.5.2 Common Path of Travel

A common path of travel shall be permitted for the first 20 ft (6100 mm) from any point where the common path serves any number of occupants, and for the first 75 ft (23 m) from any point where the common path serves not more than 50 occupants.

12.2.5.3 Dead-End Corridors

Dead-end corridors shall not exceed 20 ft (6100 mm).

12.2.5.4 Access Through Hazardous Areas

Means of egress from a room or space for assembly purposes shall not be permitted through kitchens, storerooms, restrooms, closets, platforms, stages, projection rooms, or hazardous areas as described in 12.3.2.

12.2.5.5 Auditorium and Arena Floors

Where the floor area of auditoriums and arenas is used for assembly occupancy activities/events, not less than 50 percent of the occupant load shall have means of egress provided without passing through adjacent fixed seating areas.

12.2.5.6 General Requirements for Access and Egress Routes Within Assembly Areas

12.2.5.6.1

Festival seating, as defined in 3.3.250.1, shall be prohibited within a building, unless otherwise permitted by one of the following:

Festival seating shall be permitted in assembly occupancies where the festival seating occupant load is 250 or less.

Festival seating shall be permitted in assembly occupancies where the festival seating occupant load exceeds 250, provided that an approved life safety evaluation has been performed. (See 12.4.2.)

Festival seating shall be permitted in assembly occupancies without dance halls, discotheques, and nightclubs, where the festival seating occupant load is 1000 or less.

12.2.5.6.2\*

Access and egress routes shall be maintained so that any individual is able to move without undue hindrance, on personal initiative and at any time, from an occupied position to the exits.

12.2.5.6.3\*

Access and egress routes shall be maintained so that crowd management, security, and emergency medical personnel are able to reach any individual at any time, without undue hindrance.

12.2.5.6.4\*

The width of aisle accessways and aisles shall provide sufficient egress capacity for the number of persons accommodated by the catchment area served by the aisle accessway or aisle in accordance with 12.2.3.2, or for smoke-protected assembly seating in accordance with 12.4.3.

12.2.5.6.5

Where aisle accessways or aisles converge to form a single path of egress travel, the required egress capacity of that path shall be not less than the combined required capacity of the converging aisle accessways and aisles.

12.2.5.6.6

Those portions of aisle accessways and aisles where egress is possible in either of two directions shall be uniform in required width, unless otherwise permitted by 12.2.5.6.7.

12.2.5.6.7

The requirement of 12.2.5.6.6 shall not apply to those portions of aisle accessways where the required width, not including the seat space described by 12.2.5.9.3, does not exceed 12 in. (305 mm).

12.2.5.6.8

In the case of side boundaries for aisle accessways or aisles, other than those for nonfixed seating at tables, the clear width shall be measured to boundary elements such as walls, guardrails, handrails, edges of seating, tables, and side edges of treads, and said measurement shall be made horizontally to the vertical projection of the elements, resulting in the smallest width measured perpendicularly to the line of travel.

Upcodes Diagrams

12.2.5.7\* Aisle Accessways Serving Seating Not at Tables

Diagram

UpCodes Diagrams

P

Aisles with Tables and Fixtures (NFPA 101)

12.2.5.7.1\*

The required clear width of aisle accessways between rows of seating shall be determined as follows:

Horizontal measurements shall be made between vertical planes, from the back of one seat to the front of the most forward projection immediately behind it.

Where the entire row consists of automatic- or self-rising seats that comply with ASTM F851, Standard Test Method for Self-Rising Seat Mechanisms, the measurement shall be permitted to be made with the seats in the up position.

12.2.5.7.2

The aisle accessway between rows of seating shall have a clear width of not less than 12 in. (305 mm), and this minimum shall be increased as a function of row length in accordance with 12.2.5.7.4,12.2.5.7.5, and 12.2.5.7.6.

12.2.5.7.3

If used by not more than four persons, no minimum clear width shall be required for the portion of an aisle accessway having a length not exceeding 6 ft (1830 mm), measured from the center of the seat farthest from the aisle.

12.2.5.7.4

The increase in aisle accessway width required by 12.2.5.7.2 shall not apply to grandstands, bleachers, and folding and telescopic seating, provided that the number of seats between the farthest seat and an aisle does not exceed that shown in Table 12.4.10.2.5.

12.2.5.7.5\*

Rows of seating served by aisles or doorways at both ends shall not exceed 100 seats per row.

12.2.5.7.5.1

The 12 in. (305 mm) minimum clear width of aisle accessway specified in 12.2.5.7.2 shall be increased by 0.3 in. (7.6 mm) for every seat over a total of 14 but shall not be required to exceed 22 in. (560 mm).

12.2.5.7.5.2

The requirement of 12.2.5.7.5.1 shall not apply to smoke-protected assembly seating as permitted by 12.4.3.7.

12.2.5.7.6

Rows of seating served by an aisle or doorway at one end only shall have a path of travel not exceeding 30 ft (9.1 m) in length from any seat to an aisle.

12.2.5.7.6.1

The 12 in. (305 mm) minimum clear width of aisle accessway specified in 12.2.5.7.2 shall be increased by 0.6 in. (15 mm) for every seat over a total of seven.

12.2.5.7.6.2

The requirements of 12.2.5.7.5 and 12.2.5.7.5.1 shall not apply to smoke-protected assembly seating as permitted by 12.4.3.8 and 12.4.3.9.

12.2.5.7.7

Rows of seating using tablet-arm chairs shall be permitted only if the clear width of aisle accessways complies with the requirements of 12.2.5.7 when measured under one of the following conditions:

The clear width is measured with the tablet arm in the usable position.

The clear width is measured with the tablet arm in the stored position where the tablet arm automatically returns to the stored position when raised manually to a vertical position in one motion and falls to the stored position by force of gravity.

12.2.5.7.8

The depth of seat boards shall be not less than 9 in. (230 mm) where the same level is not used for both seat boards and footboards.

12.2.5.7.9

Footboards, independent of seats, shall be provided so that there is no horizontal opening that allows the passage of a 1/2 in. (13 mm) diameter sphere.

12.2.5.8 Aisles Serving Seating Not at Tables

Upcodes Diagrams

12.2.5.8.1 General

12.2.5.8.1.1

Aisles shall be provided so that the number of seats served by the nearest aisle is in accordance with 12.2.5.7.2 through 12.2.5.7.5, unless otherwise permitted by 12.2.5.8.1.2.

12.2.5.8.1.2

Aisles shall not be required in bleachers, provided that all of the following conditions are met:

Egress from the front row shall not be obstructed by a rail, a guard, or other obstruction.

The row spacing shall be 28 in. (710 mm) or less.

The rise per row, including the first row, shall be 6 in. (150 mm) or less.

The number of rows shall not exceed 16.

The seat spaces shall not be physically defined.

Seat boards that are also used as stepping surfaces for descent shall provide a walking surface with a width not less than 12 in. (305 mm), and, where a depressed footboard exists, the gap between seat boards of adjacent rows shall not exceed 12 in. (305 mm), measured horizontally.

The leading edges of seat boards used as stepping surfaces shall be provided with a contrasting marking stripe so that the location of the leading edge is readily apparent, particularly where viewed in descent, and the following shall also apply:

The marking stripe shall be not less than 1 in. (25 mm) wide and shall not exceed 2 in. (51 mm) in width.

The marking stripe shall not be required where bleacher surfaces and environmental conditions, under all conditions of use, are such that the location of each leading edge is readily apparent, particularly when viewed in descent.

12.2.5.8.2 Dead-End Aisles

Dead-end aisles shall not exceed 20 ft (6100 mm) in length, unless otherwise permitted by one of the following:

A dead-end aisle shall be permitted to exceed 20 ft (6100 mm) in length where seats served by the dead-end aisle are not more than 24 seats from another aisle, measured along a row of seats having a clear width of not less than 12 in. (305 mm) plus 0.6 in. (15 mm) for each additional seat over a total of 7 in the row.

A 16-row, dead-end aisle shall be permitted in folding and telescopic seating and grandstands.

Aisle termination in accordance with 12.4.3.11 for smoke-protected assembly seating shall be permitted.

12.2.5.8.3\* Minimum Aisle Width

The minimum clear width of aisles shall be sufficient to provide egress capacity in accordance with 12.2.3.1 but shall be not less than the following:

48 in. (1220 mm) for stairs having seating on each side, or 36 in. (915 mm) where the aisle does not serve more than 50 seats

36 in. (915 mm) for stairs having seating on only one side

23 in. (585 mm) between a handrail and seating, or between a guardrail and seating where the aisle is subdivided by a handrail

42 in. (1065 mm) for level or ramped aisles having seating on both sides, or 36 in. (915 mm) where the aisle does not serve more than 50 seats

36 in. (915 mm) for level or ramped aisles having seating on only one side

23 in. (585 mm) between a handrail or a guardrail and seating where the aisle does not serve more than five rows on one side

12.2.5.8.4 Aisle Stairs and Aisle Ramps

12.2.5.8.4.1\*

The following shall apply to aisle stairs and aisle ramps:

Aisles having a gradient steeper than 1 in 20, but not steeper than 1 in 8, shall consist of an aisle ramp.

Aisles having a gradient steeper than 1 in 8 shall consist of an aisle stair.

12.2.5.8.4.2

Aisle stairs shall comply with 7.2.2 except as otherwise addressed by this chapter.

12.2.5.8.4.3

Table 7.2.2.2.1.1(a) and Table 7.2.2.2.1.1(b) shall not apply to aisle stairs.

12.2.5.8.5 Aisle Stair Treads

Aisle stair treads shall meet all of the following criteria:

There shall be no variation in the depth of adjacent treads that exceeds 3/16 in. (4.8 mm), unless otherwise permitted by 12.2.5.8.5(2).

Construction-caused nonuniformities in tread depth shall be permitted, provided that both of the following criteria are met:

The nonuniformity does not exceed 3/8 in. (10 mm).

The aisle tread depth is 22 in. (560 mm) or greater.

\*Tread depth shall be not less than 11 in. (280 mm).

All treads shall extend the full width of the aisle.

12.2.5.8.6 Aisle Stair Risers

Aisle stair risers shall meet all of the following criteria:

Riser heights shall be not less than 4 in. (100 mm) in aisle stairs, unless aisle stairs are those in folding and telescopic seating.

The riser height of aisle stairs in folding and telescopic seating shall be permitted to be not less than 31/2 in. (90 mm).

Riser heights shall not exceed 8 in. (205 mm), unless otherwise permitted by 12.2.5.8.6(4) or 12.2.5.8.6(5).

The riser height of aisle stairs in folding and telescopic seating shall be permitted to be not more than 11 in. (280 mm).

Where the gradient of an aisle is steeper than 8 in. (205 mm) in rise in 11 in. (280 mm) of run for the purpose of maintaining necessary sight lines in the adjoining seating area, the riser height shall be permitted to exceed 8 in. (205 mm) but shall not exceed 9 in. (230 mm).

Riser heights shall be designed to be uniform in each aisle, and the construction-caused nonuniformities shall not exceed 3/16 in. (4.8 mm) between adjacent risers, unless the conditions of 12.2.5.8.6(7) or 12.2.5.8.6(8) are met.

Riser height shall be permitted to be nonuniform where both of the following criteria are met:

The nonuniformity shall be only for the purpose of accommodating changes in gradient necessary to maintain sight lines within a seating area, in which case the nonuniformity shall be permitted to exceed 3/16 in. (4.8 mm) but shall not be greater than 1/2 in. (13 mm) between adjacent risers.

Reserved.

Where nonuniformities exceed 3/16 in. (4.8 mm) between adjacent risers, the exact location of such nonuniformities shall be indicated by a distinctive marking stripe on each tread at the nosing or leading edge adjacent to the nonuniform risers.

Construction-caused nonuniformities in riser height shall be permitted to exceed 3/16 in. (4.8 mm) where all of the following criteria are met:

The riser height shall be designed to be nonuniform.

The construction-caused nonuniformities shall not exceed 3/8 in. (10 mm) where the aisle tread depth is less than 22 in. (560 mm).

The construction-caused nonuniformities shall not exceed 3/4 in. (19 mm) where the aisle tread depth is 22 in. (560 mm) or greater.

Where nonuniformities exceed 3/16 in. (4.8 mm) between adjacent risers, the exact location of such nonuniformities shall be indicated by a distinctive marking stripe on each tread at the nosing or leading edge adjacent to the nonuniform risers.

12.2.5.8.7 Aisle Stair Profile

Aisle stairs shall comply with all of the following:

Aisle risers shall be vertical or sloped under the tread projection at an angle not to exceed 30 degrees from vertical.

Tread projection not exceeding 11/2 in. (38 mm) shall be permitted.

Tread projection shall be uniform in each aisle, except as otherwise permitted by 12.2.5.8.7(4).

Construction-caused projection nonuniformities not exceeding 1/4 in. (6.4 mm) shall be permitted.

12.2.5.8.8 Aisle Transitions

Where the path of travel on a stair or an aisle stair continues to another stair or aisle stair of different rise or tread depth, or where the path of travel on an aisle ramp continues to a stair, aisle stair, or another aisle ramp of different slope, there shall be a tread at that transition whose depth is equal to or greater than the width of the stair, aisle stair, or ramp, unless otherwise permitted by one of the following:

Maximum height between landings in accordance with 7.2.2 shall not be required within aisles.

No landing shall be required at the termination of an aisle stair.

No landing shall be required within aisle stairs with nonuniform risers, as permitted by 12.2.5.8.6(7).

No landing shall be required between aisle ramps of different slopes.

No landing shall be required between an aisle ramp and an aisle accessway or between an aisle stair and an aisle accessway.

A minimum 30 in. (760 mm) deep tread at that transition shall be permitted between an aisle stair and a stair with the same tread depths or between an aisle stair and another aisle stair with the same tread depths.

A minimum 22 in. (560 mm) deep tread at that transition shall be permitted between an aisle stair and a stair with greater tread depth in the descending direction and between an aisle stair and another aisle stair with greater tread depth in the descending direction.

A minimum 30 in. (760 mm) deep tread at that transition shall be permitted between an aisle stair and a stair with less tread depth in the descending direction and between an aisle stair and another aisle stair with less tread depth in the descending direction.

A minimum 22 in. (560 mm) deep tread at that transition shall be permitted between an aisle ramp and a stair and between an aisle ramp and an aisle stair.

No landing depth shall be required to exceed 48 in. (1220 mm).

12.2.5.8.9\* Aisle Handrails

12.2.5.8.9.1

Ramped aisles having a gradient exceeding 1 in 20 and aisle stairs shall be provided with handrails at one side or along the centerline and shall also be in accordance with 7.2.2.4.5.1, 7.2.2.4.5.5, and 7.2.2.4.5.6.

12.2.5.8.9.2

Where seating exists on both sides of the aisle, the handrails shall be noncontinuous with gaps or breaks at intervals not exceeding five rows to facilitate access to seating and to allow crossing from one side of the aisle to the other.

12.2.5.8.9.3

The gaps or breaks permitted by 12.2.5.8.9.1 shall have a clear width of not less than 22 in. (560 mm) and shall not exceed 36 in. (915 mm), measured horizontally, and the handrail shall have rounded terminations or bends.

12.2.5.8.9.4

Where handrails are provided in the middle of aisle stairs, an additional intermediate rail shall be located approximately 12 in. (305 mm) below the main handrail.

12.2.5.8.9.5

Where an aisle transition stair does not have seating at its sides, a handrail shall be provided on both sides of the aisle, and the provision of 12.2.5.8.9.6 shall also apply.

12.2.5.8.9.6

Where an aisle stair leading to the aisle transition stair is provided with a center handrail and the aisle landing is less than 48 in. (1220 mm) in the direction of travel, a center handrail shall also be provided on the aisle transition stair.

12.2.5.8.9.7

Handrails shall not be required where otherwise permitted by one of the following:

Handrails shall not be required for ramped aisles having a gradient not steeper than 1 in 8 and having seating on both sides where the aisle does not serve as an accessible route.

The requirement for a handrail shall be satisfied by the use of a guard provided with a rail that complies with the graspability requirements for handrails and is located at a consistent height between 34 in. and 42 in. (865 mm and 1065 mm), measured as follows:

Vertically from the top of the rail to the leading edge (nosing) of stair treads

Vertically from the top of the rail to the adjacent walking surface in the case of a ramp

12.2.5.8.10\* Aisle Marking

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12.2.5.8.10.1

A contrasting marking stripe shall be provided on each tread at the nosing or leading edge so that the location of such tread is readily apparent, particularly when viewed in descent.

12.2.5.8.10.2

The marking stripe shall be not less than 1 in. (25 mm) wide and shall not exceed 2 in. (51 mm) in width.

12.2.5.8.10.3

The marking stripe shall not be required where tread surfaces and environmental conditions, under all conditions of use, are such that the location of each tread is readily apparent, particularly when viewed in descent.

12.2.5.9\* Aisle Accessways Serving Seating at Tables

12.2.5.9.1

The required clear width of an aisle accessway shall be not less than 12 in. (305 mm) where measured in accordance with 12.2.5.9.3 and shall be increased as a function of length in accordance with 12.2.5.9.4, unless otherwise permitted by 12.2.5.9.2.

12.2.5.9.2\*

If used by not more than four persons, no minimum clear width shall be required for the portion of an aisle accessway having a length not exceeding 6 ft (1830 mm) and located farthest from an aisle.

12.2.5.9.3\*

Where nonfixed seating is located between a table and an aisle accessway or aisle, the measurement of required clear width of the aisle accessway or aisle shall be made to a line 19 in. (485 mm), measured perpendicularly to the edge of the table, away from the edge of said table.

12.2.5.9.4\*

The minimum required clear width of an aisle accessway, measured in accordance with 12.2.5.6.8 and 12.2.5.9.3, shall be increased beyond the 12 in. (305 mm) requirement of 12.2.5.9.1 by 1/2 in. (13 mm) for each additional 12 in. (305 mm) or fraction thereof beyond 12 ft (3660 mm) of aisle accessway length, where measured from the center of the seat farthest from an aisle.

12.2.5.9.5

The path of travel along the aisle accessway shall not exceed 36 ft (11 m) from any seat to the closest aisle or egress doorway.

12.2.5.10 Aisles Serving Seating at Tables

12.2.5.10.1\*

Aisles that contain steps or that are ramped, such as aisles serving dinner theater-style configurations, shall comply with the requirements of 12.2.5.8.

12.2.5.10.2\*

The width of aisles serving seating at tables shall be not less than 44 in. (1120 mm) where serving an occupant load exceeding 50, and 36 in. (915 mm) where serving an occupant load of 50 or fewer.

12.2.5.10.3\*

Where nonfixed seating is located between a table and an aisle, the measurement of required clear width of the aisle shall be made to a line 19 in. (485 mm), measured perpendicularly to the edge of the table, away from the edge of said table.

12.2.5.11 Approval of Layouts

12.2.5.11.1

Where required by the authority having jurisdiction, plans drawn to scale showing the arrangement of furnishings or equipment shall be submitted to the authority by the building owner, manager, or authorized agent to substantiate conformance with the provisions of 12.2.5.

12.2.5.11.2

The layout plans shall constitute the only acceptable arrangement, unless one of the following criteria is met:

The plans are revised.

Additional plans are submitted and approved.

Temporary deviations from the specifications of the approved plans are used, provided that the occupant load is not increased and the intent of 12.2.5.11 is maintained.

12.2.6 Travel Distance to Exits

12.2.6.1

Diagram

Travel distance shall be measured in accordance with Section 7.6.

Upcodes Diagrams

12.2.6.2

Exits shall be arranged so that the total length of travel from any point to reach an exit shall not exceed 200 ft (61 m) in any assembly occupancy, unless otherwise permitted by one of the following:

The travel distance shall not exceed 250 ft (76 m) in assembly occupancies protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.

The travel distance requirement shall not apply to smoke-protected assembly seating as permitted by 12.4.3.12, 12.4.3.13, and 12.4.3.14.

12.2.7 Discharge From Exits

12.2.7.1

Exit discharge shall comply with Section 7.7.

12.2.7.2

The level of exit discharge shall be measured at the point of principal entrance to the building.

12.2.7.3

Where the principal entrance to an assembly occupancy is via a terrace, either raised or depressed, such terrace shall be permitted to be considered to be the first story in height for the purposes of Table 12.1.6 where all of the following criteria are met:

The terrace is at least as long, measured parallel to the building, as the total width of the exit(s) it serves but not less than 60 in. (1525 mm) long.

The terrace is at least as wide, measured perpendicularly to the building, as the exit(s) it serves but not less than 10 ft (3050 mm) wide.

Required stairs leading from the terrace to the finished ground level are protected in accordance with 7.2.2.6.3 or are not less than 10 ft (3050 mm) from the building.

12.2.8 Illumination of Means of Egress

Means of egress, other than for private party tents not exceeding 1200 ft2 (112 m2), shall be illuminated in accordance with Section 7.8.

12.2.9 Emergency Lighting

12.2.9.1

Emergency lighting shall be provided in accordance with Section 7.9.

12.2.9.2

Private party tents not exceeding 1200 ft2 (112 m2) shall not be required to have emergency lighting.

12.2.10 Marking of Means of Egress

12.2.10.1

Means of egress shall be provided with signs in accordance with Section 7.10.

12.2.10.2

Exit markings shall not be required on the seating side of vomitories from seating areas where exit marking is provided in the concourse and where such marking is readily apparent from the vomitories.

12.2.10.3

Evacuation diagrams in accordance with 7.10.8.5 shall be provided.

12.2.11 Special Means of Egress Features

12.2.11.1 Guards and Railings

12.2.11.1.1\* Sight Line-Constrained Rail Heights

Unless subject to the requirements of 12.2.11.1.2, a fasciae or railing system complying with the guard requirements of 7.2.2.4, and having a height of not less than 26 in. (660 mm), shall be provided where the floor or footboard elevation is more than 30 in. (760 mm) above the floor or the finished ground level below, and where the fasciae or railing system would otherwise interfere with the sight lines of immediately adjacent seating.

12.2.11.1.2 At Foot of Aisles

12.2.11.1.2.1

A fasciae or railing system complying with the guard requirements of 7.2.2.4 shall be provided for the full width of the aisle where the foot of the aisle is more than 30 in. (760 mm) above the floor or the finished ground level below.

12.2.11.1.2.2

The fasciae or railing shall be not less than 36 in. (915 mm) high and shall provide not less than 42 in. (1065 mm), measured diagonally, between the top of the rail and the nosing of the nearest tread.

12.2.11.1.3 At Cross Aisles

Guards and railings at cross aisles shall meet the following criteria:

Cross aisles located behind seating rows shall be provided with railings not less than 26 in. (660 mm) above the adjacent floor of the aisle.

The requirement of 12.2.11.1.3(1) shall not apply where the backs of seats located at the front of the aisle project 24 in. (610 mm) or more above the adjacent floor of the aisle.

Where cross aisles exceed 30 in. (760 mm) above the floor or the finished ground level below, guards shall be provided in accordance with 7.2.2.4.

12.2.11.1.4 At Side and Back of Seating Areas

Guards complying with the guard requirements of 7.2.2.4 shall be provided with a height not less than 42 in. (1065 mm) above the aisle, aisle accessway, or footboard where the floor elevation exceeds 30 in. (760 mm) above the floor or the finished ground level to the side or back of seating.

12.2.11.1.5 Below Seating

Openings between footboards and seat boards shall be provided with intermediate construction so that a 4 in. (100 mm) diameter sphere cannot pass through the opening.

12.2.11.1.6 Locations Not Requiring Guards

12.2.11.1.6.1

Guards shall not be required in the following locations:

On the audience side of stages, raised platforms, and other raised floor areas such as runways, ramps, and side stages used for entertainment or presentations

At vertical openings in the performance area of stages

Where the side of an elevated walking surface is required to be open for the normal functioning of special lighting or for access and use of other special equipment.

12.2.11.1.6.2\*

Where a guard is ordinarily required but not provided in accordance with 12.2.11.1.6.1(1) or (2), a written plan shall be developed and maintained to mitigate the fall hazards of unguarded raised floor areas and vertical openings on stages.

12.2.11.2 Lockups

Lockups in assembly occupancies shall comply with the requirements of 22.4.6.

12.2.11.3 Hazardous Materials

Where hazardous materials are present, the provisions of 7.12.2 shall apply.

12.3 Protection

12.3.1 Protection of Vertical Openings

Any vertical opening shall be enclosed or protected in accordance with Section 8.6, unless otherwise permitted by one of the following:

\*Stairs or ramps shall be permitted to be unenclosed between balconies or mezzanines and main assembly areas located below, provided that the balcony or mezzanine is open to the main assembly area.

Exit access stairs from lighting and access catwalks, galleries, and gridirons shall not be required to be enclosed.

Assembly occupancies protected by an approved, supervised automatic sprinkler system in accordance with Section 9.7 shall be permitted to have unprotected vertical openings between any two adjacent floors, provided that such openings are separated from unprotected vertical openings serving other floors by a barrier complying with 8.6.5.

Assembly occupancies protected by an approved, supervised automatic sprinkler system in accordance with Section 9.7 shall be permitted to have convenience stair openings in accordance with 8.6.9.2.

12.3.2 Protection From Hazards

12.3.2.1 Service Equipment, Hazardous Operations or Processes, and Storage Facilities

12.3.2.1.1

Rooms containing high-pressure boilers, refrigerating machinery of other than the domestic refrigerator type, large transformers, or other service equipment subject to explosion shall meet both of the following requirements:

Such rooms shall not be located directly under or abutting required exits.

Such rooms shall be separated from other parts of the building by fire barriers in accordance with Section 8.3 having a minimum 1-hour fire resistance rating or shall be protected by automatic extinguishing systems in accordance with Section 8.7.

12.3.2.1.2

Rooms or spaces for the storage, processing, or use of materials specified in 12.3.2.1.2(1) through (3) shall be protected in accordance with one of the following:

Separation from the remainder of the building by fire barriers having a minimum 1-hour fire resistance rating or protection of such rooms by automatic extinguishing systems as specified in Section 8.7 in the following areas:

Boiler and furnace rooms, unless otherwise permitted by one of the following:

The requirement of 12.3.2.1.2(1)(a) shall not apply to rooms enclosing furnaces, heating and air-handling equipment, or compressor equipment with a total aggregate input rating less than 200,000 Btu (211 MJ), provided that such rooms are not used for storage.

The requirement of 12.3.2.1.2(1)(a) shall not apply to attic locations of the rooms addressed in 12.3.2.1.2(1)(a)(i), provided that such rooms comply with the draftstopping requirements of 8.6.11.

Rooms or spaces used for the storage of combustible supplies in quantities deemed hazardous by the authority having jurisdiction

Rooms or spaces used for the storage of hazardous materials or flammable or combustible liquids in quantities deemed hazardous by recognized standards

Separation from the remainder of the building by fire barriers having a minimum 1-hour fire resistance rating and protection of such rooms by automatic extinguishing systems as specified in Section 8.7 in the following areas:

Laundries

Maintenance shops, including woodworking and painting areas

Rooms or spaces used for processing or use of combustible supplies deemed hazardous by the authority having jurisdiction

Rooms or spaces used for processing or use of hazardous materials or flammable or combustible liquids in quantities deemed hazardous by recognized standards

Protection as permitted in accordance with 9.7.1.2 where automatic extinguishing is used to meet the requirements of 12.3.2.1.2(1) or (2)

12.3.2.2 Cooking Equipment

Cooking equipment shall be protected in accordance with 9.2.3, unless the cooking equipment is one of the following types:

Outdoor equipment

Portable equipment not flue-connected

Equipment used only for food warming

12.3.2.3 Hazardous Materials

Where hazardous materials are stored or handled, the provisions of 8.7.3.1 shall apply.

12.3.3 Interior Finish

12.3.3.1 General

Interior finish shall be in accordance with Section 10.2.

12.3.3.2 Corridors, Lobbies, and Enclosed Stairways

Interior wall and ceiling finish materials complying with Section 10.2 shall be Class A or Class B in all corridors and lobbies and shall be Class A in enclosed stairways.

12.3.3.3 Assembly Areas

Interior wall and ceiling finish materials complying with Section 10.2 shall be Class A or Class B in general assembly areas having occupant loads of more than 300 and shall be Class A, Class B, or Class C in assembly areas having occupant loads of 300 or fewer.

12.3.3.4 Screens

Screens on which pictures are projected shall comply with requirements of Class A or Class B interior finish in accordance with Section 10.2.

12.3.3.5 Interior Floor Finish

12.3.3.5.1

Interior floor finish shall comply with Section 10.2.

12.3.3.5.2

Interior floor finish in exit enclosures and exit access corridors and in spaces not separated from them by walls complying with 12.3.6 shall be not less than Class II.

12.3.3.5.3

Interior floor finish shall comply with 10.2.7.1 or 10.2.7.2, as applicable.

12.3.4 Detection, Alarm, and Communications Systems

12.3.4.1 General

Upcodes Diagrams

12.3.4.1.1

Assembly occupancies with occupant loads of more than 300 and all theaters with more than one audience-viewing room shall be provided with an approved fire alarm system in accordance with 9.6.1 and 12.3.4, unless otherwise permitted by 12.3.4.1.2.

12.3.4.1.2

Assembly occupancies that are a part of a multiple occupancy protected as a mixed occupancy (see 6.1.14) shall be permitted to be served by a common fire alarm system, provided that the individual requirements of each occupancy are met.

12.3.4.2 Initiation

12.3.4.2.1

Initiation of the required fire alarm system shall be by both of the following means:

Manual means in accordance with 9.6.2.1, unless otherwise permitted by one of the following:

The requirement of 12.3.4.2.1(1) shall not apply where initiation is by means of an approved automatic fire detection system in accordance with 9.6.2.1 that provides fire detection throughout the building.

The requirement of 12.3.4.2.1(1) shall not apply where initiation is by means of an approved automatic sprinkler system in accordance with 9.6.2.1 that provides fire detection and protection throughout the building.

Where automatic sprinklers are provided, initiation of the fire alarm system by sprinkler system waterflow, even where manual fire alarm boxes are provided in accordance with 12.3.4.2.1(1)

12.3.4.2.2

The initiating device shall be capable of transmitting an alarm to a receiving station, located within the building, that is constantly attended when the assembly occupancy is occupied.

12.3.4.2.3\*

In assembly occupancies with occupant loads of more than 300, automatic detection shall be provided in all hazardous areas that are not normally occupied, unless such areas are protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.

12.3.4.3 Notification

The required fire alarm system shall activate an audible and visible alarm in a constantly attended receiving station within the building when occupied for purposes of initiating emergency action.

12.3.4.3.1

Positive alarm sequence in accordance with 9.6.3.5 shall be permitted.

12.3.4.3.2 Reserved

12.3.4.3.3

Occupant notification shall be by means of voice announcements in accordance with 9.6.3.10, initiated by the person in the constantly attended receiving station.

12.3.4.3.4

Occupant notification shall be by means of visible signals in accordance with 9.6.3.6, initiated by the person in the constantly attended receiving station, unless otherwise permitted by 12.3.4.3.5.

12.3.4.3.5\*

Visible signals shall not be required in the assembly seating area, or the floor area used for the contest, performance, or entertainment, where the occupant load exceeds 1000 and an approved, alternative visible means of occupant notification is provided. (See 9.6.3.6.7.)

12.3.4.3.6

The announcement shall be permitted to be made via a voice communication or public address system in accordance with 9.6.3.10.2.

12.3.4.3.7

Where the authority having jurisdiction determines that a constantly attended receiving station is impractical, both of the following shall be provided:

Automatically transmitted evacuation or relocation instructions shall be provided in accordance with NFPA 72.

The system shall be monitored by a supervising station in accordance with NFPA 72.

12.3.4.3.8

Emergency forces notification shall be provided in accordance with 9.6.4.

12.3.4.4 Carbon Monoxide Detection

12.3.4.4.1

New assembly occupancies shall be provided with carbon monoxide detection and warning equipment in accordance with Section 9.12 in the locations specified as follows:

On the ceilings of rooms containing permanently installed fuel-burning appliances or fuel-burning fireplaces

Centrally located within occupiable spaces served by the first supply air register from permanently installed fuel-burning HVAC systems

\*Centrally located within occupiable spaces adjacent to an attached garage

12.3.4.4.2

Carbon monoxide detectors as specified in 12.3.4.4.1 shall not be required in the following locations:

Garages

Occupiable spaces with attached garages that are open parking structures as defined in 3.3.284.8.4

Occupiable spaces with attached garages that are mechanically ventilated in accordance with the mechanical code

12.3.4.5 Risk Analysis for Mass Notification Systems

A risk analysis in accordance with Section 9.14 shall be performed for new assembly occupancies with an occupant load of 500 or more to determine whether a mass notification system is required.

12.3.5 Extinguishment Requirements

12.3.5.1

Diagram

The following assembly occupancies shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1):

Dance halls

Discotheques

Nightclubs

Bars

Restaurants

Assembly occupancies with festival seating

UpCodes Diagrams

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Sprinklers: Assembly, New Const. (NFPA)

12.3.5.2

Diagram

Any building containing one or more assembly occupancies where the aggregate occupant load of the assembly occupancies exceeds 300 shall be protected by an approved, supervised automatic sprinkler system in accordance with Section 9.7 as follows (see also 12.1.6, 12.2.6, 12.3.2, and 12.3.6):

Throughout the story containing the assembly occupancy

Throughout all stories below the story containing the assembly occupancy

In the case of an assembly occupancy located below the level of exit discharge, throughout all stories intervening between that story and the level of exit discharge, including the level of exit discharge

Upcodes Diagrams

12.3.5.3

The requirements of 12.3.5.2 shall not apply to the following:

\*Assembly occupancies consisting of a single multipurpose room of less than 12,000 ft2 (1115 m2) that are not used for exhibition or display and are not part of a mixed occupancy

Gymnasiums, skating rinks, and swimming pools used exclusively for participant sports with no audience facilities for more than 300 persons

\*Locations in stadia and arenas as follows:

Over the floor areas used for contest, performance, or entertainment, provided that the roof construction is more than 50 ft (15 m) above the floor level, and use is restricted to low fire hazard uses

Over the seating areas, provided that use is restricted to low fire hazard uses

Over open-air concourses where an approved engineering analysis substantiates the ineffectiveness of the sprinkler protection due to building height and combustible loading

Locations in unenclosed stadia and arenas as follows:

Press boxes of less than 1000 ft2 (93 m2)

Storage facilities of less than 1000 ft2 (93 m2) if enclosed with not less than 1-hour-fire-resistance-rated construction

Enclosed areas underneath grandstands that comply with 12.4.10.5

12.3.5.4

Where another provision of this chapter requires an automatic sprinkler system, the sprinkler system shall be installed in accordance with 9.7.1.1(1).

12.3.5.5

High-rise buildings shall comply with 12.4.5.

12.3.5.6

Where required by 12.1.6, buildings containing assembly occupancies shall be protected by an approved, supervised automatic sprinkler system in accordance with Section 9.7 throughout the stories specified by Table 12.1.6.

12.3.6 Corridors

Interior corridors and lobbies shall be constructed in accordance with 7.1.3.1 and Section 8.3, unless otherwise permitted by one of the following:

Corridor and lobby protection shall not be required where assembly rooms served by the corridor or lobby have at least 50 percent of their exit capacity discharging directly to the outside, independent of corridors and lobbies.

Corridor and lobby protection shall not be required in buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.

Lobbies serving only one assembly area that meet the requirements for intervening rooms (see 7.5.1.5) shall not be required to have a fire resistance rating.

Where the corridor ceiling is an assembly having a 1-hour fire resistance rating where tested as a wall, the corridor walls shall be permitted to terminate at the corridor ceiling.

Corridor and lobby protection shall not be required in buildings protected throughout by an approved, total (complete) coverage smoke detection system providing occupant notification and installed in accordance with Section 9.6.

12.4 Special Provisions

12.4.1 Special Structures

Assembly occupancies shall comply with Chapter 11 where located in special structures.

12.4.2 Life Safety Evaluation

12.4.2.1\* General

Where a life safety evaluation is required by other provisions of this Code, it shall comply with the following:

The life safety evaluation shall be performed by persons acceptable to the authority having jurisdiction.

The life safety evaluation shall include a written assessment of safety measures for conditions listed in 12.4.2.2 and of the building systems and facility management in accordance with 12.4.2.3.

The life safety evaluation shall be approved annually and shall be updated for special or unusual conditions in accordance with the provisions of 13.4.2 for existing assembly occupancies.

12.4.2.2 Conditions to Be Assessed

Life safety evaluations shall include an assessment of all of the following conditions and related appropriate safety measures:

Nature of the events and the participants and attendees

Access and egress movement, including crowd density problems

Medical emergencies

Fire hazards

Permanent and temporary structural systems

Severe weather conditions

Earthquakes

Civil or other disturbances

Hazardous materials incidents within and near the facility

Relationships among facility management, event participants, emergency response agencies, and others having a role in the events accommodated in the facility

12.4.2.3\* Building Systems and Facility Management Assessments

Life safety evaluations shall include assessments of both building systems and facility management upon which reliance is placed for the safety of facility occupants, and such assessments shall consider scenarios appropriate to the facility.

12.4.2.3.1 Building Systems

Prior to issuance of the building permit, the design team shall provide the authority having jurisdiction with building systems documentation in accordance with 12.4.2.4.

12.4.2.3.2 Facility Management

Prior to issuance of the certificate of occupancy, the facility management shall provide the authority having jurisdiction with facility management documentation in accordance with 12.4.2.5.

12.4.2.3.3 Life Safety Evaluation

12.4.2.3.3.1

Prior to issuance of the building permit, the persons performing the life safety evaluation shall confirm that the building systems provide appropriate safety measures.

12.4.2.3.3.2

Prior to issuance of the certificate of occupancy, the owner shall confirm that the facility management and operational plans provide appropriate safety measures.

12.4.2.3.3.3

The life safety evaluation shall be performed by persons acceptable to the authority having jurisdiction.

12.4.2.4 Life Safety Building Systems Document

The authority having jurisdiction shall be provided with a life safety building systems document providing the information required in 12.4.2.4.2 through 12.4.2.4.4.

12.4.2.4.1 Document Distribution

The persons performing the life safety evaluation, the authority having jurisdiction, the A/E design team, and the building owner shall receive a copy of the life safety building systems document prior to issuance of the building permit.

12.4.2.4.2 Life Safety Narrative

A life safety narrative shall be provided describing the following, as applicable:

Building occupancy, construction type, and intended uses and events

Building area and population capacity of the proposed facility

Principal fire and life safety features/strategies for the building, including, as applicable, the following:

Egress

Access control

Fire barriers, smoke barriers, and smoke partitions

Fire suppression systems

Smoke control/protection

Fire detection and alarm

PA system

Emergency elevator operation

Emergency power and lighting

Provisions for patrons with disabilities

Fire department access

Fire/emergency command center

Exterior construction design parameters used/applied

12.4.2.4.3 Life Safety Floor Plans

Life safety floor plans of each level shall be provided, as applicable, with the following:

Occupant load, exit location, egress capacity, main entrance/exit, horizontal exits, travel distance, and exit discharge

Fire barriers, smoke barriers, and smoke partitions

Areas of smoke-protected assembly occupancy

Separate smoke-protected areas or zones

Areas of other occupancy type and separations

Unprotected vertical openings

Event plans for each anticipated type of event depicting the following:

Seating configuration

Exhibit booth layout

Stage location

Occupant load, egress capacity required, exits provided, and travel distance

Any floor or stage use restrictions

Plan and/or section drawing indicating where sprinkler protection is omitted

Areas of refuge — interior and exterior

12.4.2.4.4 Engineering Analysis and Calculations

Where active or passive smoke control is used, an engineering analysis shall be provided and shall include the following, as applicable:

Smoke protection analysis to substitute the use of smoke-protected assembly seating as follows:

Performance-based design methods approved by the authority having jurisdiction

Smoke control requirements per NFPA 92

Smoke control assumptions, such as fire scenario description, fire size quantification, and smoke development/smoke movement analysis

Proposed testing protocol for smoke control system and pass/fail criteria

Timed egress analysis assumed flow rates and travel speeds

Sprinkler protection calculations, including an engineering analysis substantiating locations in accordance with 12.3.5.3 where sprinkler protection would be ineffective due to height and combustible loading

Load diagram of rigging/load capacity of gridiron, fly loft, or long-span roof structure used for hanging overhead objects

12.4.2.5 Life Safety Management Document

The authority having jurisdiction shall be provided with a life safety management document providing the information required in 12.4.2.5.2 through 12.4.2.5.7.

12.4.2.5.1 Document Distribution

The persons performing the life safety evaluation, the authority having jurisdiction, the A/E design team, and the building owner shall receive a copy of the life safety management document prior to issuance of the certificate of occupancy.

12.4.2.5.2 Facility Management and Operational Plans

Facility management and operational plans shall address the following, as applicable:

Best practices adopted or recognized

Emergency plans

Evacuation plans

Shelter-in-place plans, including capacities and protection considerations

Crowd management training plan

Safety plans, which include the following:

Training plans

Safety equipment plans

Fire alarm, smoke control system protocol, and testing plans

First aid or medical treatment plans, which include the following:

Defined levels of service

Standing orders adopted

Supply and equipment plan

Housekeeping plans — biological, medical, hazardous materials cleaning

Emergency communication plans, which include the following:

Chain of authority and incident command system employed

Contact information for the following:

Venue personnel

Emergency management and response organizations (such as fire, police, medical, utility, transportation, and key stakeholders)

Communication systems

Standard announcement for incidents or emergency situations

Risk and threat assessment for venue and surrounding area for the following:

Severe weather

Hazardous materials

Terrorism

Hostile intruder

Operating procedures and protocols for risks, such as the following:

Severe weather preparedness and monitoring plans

Hazardous materials incidence response plans

Terrorism response plans

Hostile intruder response plans

First responder response/arrival routes plans

Alcohol management plans

Food safety plans

Rigging and temporary performance structure, which includes the following:

Design and safety review plans

Emergency action plans

Chemical and hazardous materials information and data

Barrier and wall protection plans for motor sports or similar events

12.4.2.5.3 Records

Records of the facility management plans, including procedures and location, shall be maintained for the following:

Crowd management training

Safety training

Fire alarm, smoke control system maintenance, and test records

First aid or medical treatment and regulation compliance

12.4.2.5.4 Building Systems Reference Guide

A building systems reference guide shall be provided in accordance with 12.4.2.5.4.1 through 12.4.2.5.4.3.

12.4.2.5.4.1

A basic life safety building systems reference guide shall be developed and maintained.

12.4.2.5.4.2

The life safety building systems reference guide shall contain the important and key information for the venue management's use when planning events/activities for the safety of patrons, performers/participants, employees, and vendors.

12.4.2.5.4.3

The life safety building systems document in accordance with 12.4.2.4 shall be permitted to be used, and additionally the life safety building systems reference guide shall include the following, as applicable:

Occupant capacity of every space/room

Egress flow diagrams, including assumed flow rates, and capacities of all aisles and hallways, including public and nonpublic areas

Capacities of all exterior doors and/or choke points in immediate perimeter areas

Limitations or assumptions for ingress control that could be in place during an emergency egress/evacuation, including control gates, queuing barriers, and turnstiles

Capacities of immediate perimeter exterior walkways, including assumed flow rates for exterior areas

Assumed egress paths for normal conditions — transportation modes

Management-level sequencing charts for alarm and emergency communication systems, the manual, or override options/instructions that include the following:

List of codes or alarm signals

Location of manual overrides

Description of sequence of operations during an alarm, such as exhaust fans operate or doors open

Principal fire and life safety features/strategies, such as sprinklers, smoke control, fire alarm notifications, PA system, emergency power, and fire department access

Assumptions when developing occupancy plans for venue floor, open areas, and nonevent spaces, such as the following:

Event floor plans/setup diagrams for each typical event/activity

Fire sprinkler and smoke protection capabilities

Severe weather shelter areas, locations, structure considerations (limitations), capacities (occupancy and density factor)

Command center, which includes the following:

Location (formal or informal)

Structural integrity considerations

Redundant locations and/or capabilities

Jurisdictional rights — assumed and/or applied

Locations and capacities of wheelchair and mobility-impaired seating

Locations and capacities of areas of refuge and other safe areas

Rigging or structural load capacities of grids, truss structure, fly lofts, ceilings, floors, ramps, and staging

List of locations of emergency equipment, such as fire extinguishers, fire hose cabinets, fire hydrants, and AEDs.

Sequencing of electrical service, such as the following:

Emergency generators and charts of all areas illuminated during power outages

Multiple electrical feed capabilities

List of mechanical, movable equipment in the facility

Potential hazards in the surrounding neighborhood, including train tracks and propane stations

Assumptions or accommodations considered and used in design

12.4.2.5.5

The facility management plans shall be maintained and adjusted as necessary for changes to the venue structure, operating purposes and style, and event occupancy.

12.4.2.5.6

Facility management and operational plans shall be submitted to the authority having jurisdiction annually.

12.4.2.5.7

For events and activities at the venue that are outside the normal operating conditions or vary from the normal facility management plans, the following shall apply:

Facility management shall perform an event/activity-specific facility management plan for the authority having jurisdiction to review.

Approval of the authority having jurisdiction for the specific facility management plan shall occur prior to such event.

12.4.3\* Smoke-Protected Assembly Seating

12.4.3.1

To be considered smoke protected, an assembly seating facility shall comply with both of the following:

All enclosed areas with walls and ceilings in buildings or structures containing smoke-protected assembly seating shall be protected with an approved, supervised automatic sprinkler system in accordance with Section 9.7, unless otherwise permitted by one of the following:

The requirement of 12.4.3.1(1) shall not apply to the floor area used for contest, performance, or entertainment, provided that the roof construction is more than 50 ft (15 m) above the floor level and use is restricted to low fire hazard uses.

Sprinklers shall not be required to be located over the floor area used for contest, performance, or entertainment and over the seating areas where an approved engineering analysis substantiates the ineffectiveness of the sprinkler protection due to building height and combustible loading.

All means of egress serving a smoke-protected assembly seating area shall be provided with smoke-actuated ventilation facilities or natural ventilation designed in accordance with both of the following criteria:

The ventilation system shall be designed to maintain the level of smoke at not less than 6 ft (1830 mm) above the floor of the means of egress.

The ventilation system shall be in accordance with NFPA 92.

12.4.3.2

To use the provisions of smoke-protected assembly seating, a facility shall be subject to a life safety evaluation in accordance with 12.4.2.

12.4.3.3

Minimum clear widths of aisles and other means of egress serving smoke-protected assembly seating shall be in accordance with Table 12.4.3.3.

Table 12.4.3.3 Capacity Factors for Smoke-Protected Assembly Seating

No. of Seats Clear Width per Seat Served

Stairs Passageways, Ramps, and Doorways

in. mm in. mm

2,000 0.300 AB 7.6 AB 0.220 C 5.6 C

5,000 0.200 AB 5.1 AB 0.150 C 3.8 C

10,000 0.130 AB 3.3 AB 0.100 C 2.5 C

15,000 0.096 AB 2.4 AB 0.070 C 1.8 C

20,000 0.076 AB 1.9 AB 0.056 C 1.4 C

≥25,000 0.060 AB 1.5 AB 0.044 C 1.1 C

12.4.3.4 Outdoor Smoke-Protected Assembly Seating

12.4.3.4.1

Where smoke-protected assembly seating and its means of egress are located wholly outdoors, capacity shall be permitted to be provided in accordance with Table 12.4.3.4.1 and the provision of 12.4.3.4.2 shall apply.

Table 12.4.3.4.1 Capacity Factors for Outdoor Smoke-Protected Assembly Seating

Feature Clear Width per Seat Served

Stairs Passageways, Ramps, and Doorways

in. mm in. mm

Outdoor smoke-protected assembly seating 0.08 AB 2.0 AB 0.06 C 1.5 C

12.4.3.4.2

Where the number of seats in outdoor smoke-protected assembly seating exceeds 20,000, the capacity factors of Table 12.4.3.3 shall be permitted to be used.

12.4.3.5

Where using Table 12.4.3.3, the number of seats specified shall be within a single assembly space, and interpolation shall be permitted between the specific values shown. A single seating space shall be permitted to have multiple levels, floors, or mezzanines.

12.4.3.6

The minimum clear widths shown in Table 12.4.3.3 and Table 12.4.3.4.1 shall be modified in accordance with all of the following:

If risers exceed 7 in. in height, the stair width in Table 12.4.3.3 and Table 12.4.3.4.1 shall be multiplied by factor A, where A equals the following:

[12.4.3.6a]

If risers exceed 178 mm in height, the stair width in Table 12.4.3.3 and Table 12.4.3.4.1 shall be multiplied by factor A, where A equals the following:

[12.4.3.6b]

Stairs not having a handrail within a 30 in. (760 mm) horizontal distance shall be 25 percent wider than otherwise calculated; that is, their width shall be multiplied by factor B, where B equals the following:

B = 1.25 [12.4.3.6c]

Ramps steeper than 1 in 10 slope where used in ascent shall have their width increased by 10 percent; that is, their width shall be multiplied by factor C, where C equals the following:

C = 1.10 [12.4.3.6d]

12.4.3.7

Where smoke-protected assembly seating conforms to the requirements of 12.4.3, for rows of seats served by aisles or doorways at both ends, the number of seats per row shall not exceed 100, and the clear width of not less than 12 in. (305 mm) for aisle accessways shall be increased by 0.3 in. (7.6 mm) for every additional seat beyond the number stipulated in Table 12.4.3.7; however, the minimum clear width shall not be required to exceed 22 in. (560 mm).

Table 12.4.3.7 Smoke-Protected Assembly Seating Aisle Accessways

Total Number of Seats in the Space Number of Seats per Row Permitted to Have a Clear Width Aisle Accessway of Not Less than 12 in. (305 mm)

Aisle or Doorway at Both Ends of Row Aisle or Doorway at One End of Row

<4,000 14 7

4,000—6,999 15 7

7,000—9,999 16 8

10,000—12,999 17 8

13,000—15,999 18 9

16,000—18,999 19 9

19,000—21,999 20 10

≥22,000 21 11

12.4.3.8

Where smoke-protected assembly seating conforms to the requirements of 12.4.3, for rows of seats served by an aisle or doorway at one end only, the aisle accessway clear width of not less than 12 in. (305 mm) shall be increased by 0.6 in. (15 mm) for every additional seat beyond the number stipulated in Table 12.4.3.7; however, the minimum clear width shall not be required to exceed 22 in. (560 mm).

12.4.3.9

Smoke-protected assembly seating conforming with the requirements of 12.4.3 shall be permitted to have a common path of travel of 50 ft (15 m) from any seat to a point where a person has a choice of two directions of egress travel.

12.4.3.10

Aisle accessways shall be permitted to serve as one or both of the required exit accesses addressed in 12.4.3.9, provided that the aisle accessway has a minimum width of 12 in. (305 mm) plus 0.3 in. (7.6 mm) for every additional seat over a total of 7 in a row.

12.4.3.11

Where smoke-protected assembly seating conforms to the requirements of 12.4.3, the dead ends in aisle stairs shall not exceed a distance of 21 rows, unless both of the following criteria are met:

The seats served by the dead-end aisle are not more than 40 seats from another aisle.

The 40-seat distance is measured along a row of seats having an aisle accessway with a clear width of not less than 12 in. (305 mm) plus 0.3 in. (7.6 mm) for each additional seat above 7 in the row.

12.4.3.12

Where smoke-protected assembly seating conforms to the requirements of 12.4.3, the travel distance from each seat to the nearest entrance to an egress vomitory or egress concourse shall not exceed 400 ft (122 m).

12.4.3.13

Where smoke-protected assembly seating conforms to the requirements of 12.4.3, the travel distance from the entrance to the vomitory or from the egress concourse to an approved egress stair, ramp, or walk at the building exterior shall not exceed 200 ft (61 m).

12.4.3.14

The travel distance requirements of 12.4.3.12 and 12.4.3.13 shall not apply to outdoor assembly seating facilities of Type I or Type II construction where all portions of the means of egress are essentially open to the outside.

12.4.4 Limited Access or Underground Buildings

12.4.4.1

Limited access or underground buildings shall comply with 12.4.4 and Section 11.7.

12.4.4.2

Underground buildings or portions of buildings having a floor level more than 30 ft (9.1 m) below the level of exit discharge shall comply with the requirements of 12.4.4.3 through 12.4.4.5, unless otherwise permitted by one of the following:

This requirement shall not apply to areas within buildings used only for service to the building, such as boiler/heater rooms, cable vaults, and dead storage.

This requirement shall not apply to auditoriums without intervening occupiable levels.

12.4.4.3

Each level more than 30 ft (9.1 m) below the level of exit discharge shall be divided into not less than two smoke compartments by a smoke barrier complying with Section 8.5 and shall have a minimum 1-hour fire resistance rating.

12.4.4.3.1

Smoke compartments shall comply with both of the following:

Each smoke compartment shall have access to not less than one exit without passing through the other required compartment.

Any doors connecting required compartments shall be tight-fitting, minimum 1-hour-rated fire door assemblies designed and installed to minimize smoke leakage and to close and latch automatically upon detection of smoke.

12.4.4.3.2

Each smoke compartment shall be provided with a mechanical means of moving people vertically, such as an elevator or escalator.

12.4.4.3.3

Each smoke compartment shall have an independent air supply and exhaust system capable of smoke control or smoke exhaust functions. The system shall be in accordance with NFPA 92.

12.4.4.3.4

Throughout each smoke compartment shall be provided an automatic smoke detection system designed such that the activation of any two detectors causes the smoke control system to operate and the building voice alarm to sound.

12.4.4.4

Any required smoke control or exhaust system shall be provided with a standby power system complying with Article 701 of NFPA 70.

12.4.4.5

The building shall be provided with an approved, supervised voice alarm system, in accordance with Section 9.6, that complies with 9.6.3.10 and provides a prerecorded evacuation message.

12.4.5 High-Rise Buildings

High-rise assembly occupancy buildings and high-rise mixed occupancy buildings that house assembly occupancies in the high-rise portions of the building shall comply with Section 11.8.

12.4.6 Alcohol-Based-Hand-Rub Dispensers

Alcohol-based-hand-rub dispensers in accordance with 8.7.3.3 shall be permitted.

12.4.7 Stages and Platforms

See 3.3.276 and 3.3.220.

12.4.7.1 Materials and Design

12.4.7.1.1

Materials used in the construction of platforms and stages shall conform to the applicable requirements of the local building code.

12.4.7.1.2

Stage stairs shall be permitted to be of combustible materials, regardless of building construction type.

12.4.7.2 Platform Construction

12.4.7.2.1

Temporary platforms shall be permitted to be constructed of any materials.

12.4.7.2.2

The space between the floor and the temporary platform above shall not be used for any purpose other than the electrical wiring to platform equipment.

12.4.7.2.3

Permanent platforms shall be of the materials required for the building construction type in which the permanent platform is located, except that the finish floor shall be permitted to be of wood in all types of construction.

12.4.7.2.4

Where the space beneath the permanent platform is used for storage or any purpose other than equipment wiring or plumbing, the floor construction shall not be less than 1-hour fire resistive.

12.4.7.3 Stage Construction

12.4.7.3.1

Regular stages shall be of the materials required for the building construction type in which they are located. In all cases, the finish floor shall be permitted to be of wood.

12.4.7.3.2

Legitimate stages shall be constructed of materials required for Type I buildings, except that the area extending from the proscenium opening to the back wall of the stage, and for a distance of 6 ft (1830 mm) beyond the proscenium opening on each side, shall be permitted to be constructed of steel or heavy timber covered with a wood floor not less than 11/2 in. (38 mm) in actual thickness.

12.4.7.3.3

Openings through stage floors shall be equipped with tight-fitting traps with approved safety locks, and such traps shall comply with one of the following:

The traps shall be of wood having an actual thickness of not less than 11/2 in. (38 mm).

The traps shall be of a material that provides fire and heat resistance at least equivalent to that provided by wood traps having an actual thickness of not less than 11/2 in. (38 mm).

12.4.7.4 Accessory Rooms

12.4.7.4.1

Workshops, storerooms, permanent dressing rooms, and other accessory spaces contiguous to stages shall be separated from each other and other building areas by 1-hour-fire-resistance-rated construction and protected openings.

12.4.7.4.2

The separation requirements of 12.4.7.4.1 shall not be required for stages having a floor area not exceeding 1000 ft2 (93 m2).

12.4.7.5 Ventilators

Regular stages in excess of 1000 ft2 (93 m2) and legitimate stages shall be provided with emergency ventilation to provide a means of removing smoke and combustion gases directly to the outside in the event of a fire, and such ventilation shall be achieved by one or a combination of the methods specified in 12.4.7.5.1 through 12.4.7.5.3.

12.4.7.5.1 Smoke Control

12.4.7.5.1.1

A means complying with Section 9.3 shall be provided to maintain the smoke level at not less than 6 ft (1830 mm) above the highest level of assembly seating or above the top of the proscenium opening where a proscenium wall and opening protection are provided.

12.4.7.5.1.2

Smoke control systems used for compliance with 12.4.7.5.1.1 shall be in accordance with NFPA 92.

12.4.7.5.1.3

The smoke control system shall be activated independently by each of the following:

Activation of the sprinkler system in the stage area

Activation of smoke detectors over the stage area

Activation by manually operated switch at an approved location

12.4.7.5.1.4

The emergency ventilation system shall be supplied by both normal and standby power.

12.4.7.5.1.5

The fan(s) power wiring and ducts shall be located and properly protected to ensure a minimum of 20 minutes of operation in the event of activation.

12.4.7.5.2 Roof Vents

12.4.7.5.2.1

Roof vents used for compliance with 12.4.7.5.1.1 shall be in accordance with NFPA 204.

(A)

Vents shall be designed to maintain the smoke level at not less than 6 ft (1830 mm) above the highest level of assembly seating or above the top of the proscenium opening where a proscenium wall and opening protection are provided.

(B)

Vents for regular stages shall comply with NFPA 204; however, vent shall be permitted to provide a net free vent area of 5 percent of the stage area, in lieu of the engineering analysis required by NFPA 204.

12.4.7.5.2.2

Vents shall be constructed to open automatically by approved heat-activated devices, and supplemental means shall be provided for manual emergency operation and periodic testing of the ventilator from the stage floor.

12.4.7.5.2.3

Vents shall be listed and labeled.

(A)

(Where labeled devices permitting manual operation from the stage floor are not available for a labeled vent, the manual operation device is not required to be listed and labeled.

12.4.7.5.3 Other Means

Approved, alternate means of removing smoke and combustion gases shall be permitted.

12.4.7.5.4 Testing

Vents shall be inspected, maintained, and tested in accordance with Chapter 12 of NFPA 204.

12.4.7.6 Proscenium Walls

Legitimate stages shall be completely separated from the seating area by a proscenium wall of not less than 2-hour-fire-resistive, noncombustible construction.

12.4.7.6.1

The proscenium wall shall extend not less than 48 in. (1220 mm) above the roof of the auditorium in combustible construction.

12.4.7.6.2

All openings in the proscenium wall of a legitimate stage shall be protected by a fire assembly having a minimum 11/2-hour fire protection rating.

12.4.7.6.3

The main proscenium opening used for viewing performances shall be provided with proscenium opening protection as described in 12.4.7.7.

12.4.7.6.4

Proscenium walls shall not be required in smoke-protected assembly seating facilities constructed and operated in accordance with 12.4.3.

12.4.7.7 Proscenium Opening Protection

12.4.7.7.1

Where required by 12.4.7.6, the proscenium opening shall be protected by a listed, minimum 20-minute opening protective assembly, a fire curtain complying with NFPA 80 or an approved water curtain complying with NFPA 13.

12.4.7.7.2

Proscenium opening protection provided by other than a fire curtain shall activate upon automatic detection of a fire and upon manual activation.

12.4.7.8 Gridiron, Fly Galleries, and Pinrails

12.4.7.8.1

Structural framing designed only for the attachment of portable or fixed theater equipment, gridirons, galleries, and catwalks shall be constructed of materials consistent with the building construction type, and a fire resistance rating shall not be required.

12.4.7.8.2

Fire-retardant-treated wood shall be permitted for fly galleries and pinrails of all types of construction.

12.4.7.8.3

Combustible materials shall be permitted to be used for the floors of galleries and catwalks of all construction types.

12.4.7.9 Catwalks

The clear width of lighting and access catwalks and the means of egress from galleries and gridirons shall be not less than 22 in. (560 mm).

12.4.7.10 Fire Protection

Every stage shall be protected by an approved, supervised automatic sprinkler system in compliance with Section 9.7.

12.4.7.10.1

Protection shall be provided throughout the stage and in storerooms, workshops, permanent dressing rooms, and other accessory spaces contiguous to stages.

12.4.7.10.2

Sprinklers shall not be required for stages 1000 ft2 (93 m2) or less in area and 50 ft (15 m) or less in height where both of the following criteria are met:

Curtains, scenery, or other combustible hangings are not retractable vertically.

Combustible hangings are limited to borders, legs, a single main curtain, and a single backdrop.

12.4.7.10.3

Sprinklers shall not be required under stage areas less than 48 in. (1220 mm) in clear height that are used exclusively for chair or table storage and lined on the inside with 5/8 in. (16 mm) Type X gypsum wallboard or the approved equivalent.

12.4.7.11 Flame-Retardant Requirements

12.4.7.11.1

Combustible scenery of cloth, film, vegetation (dry), and similar materials shall comply with one of the following:

They shall meet the flame propagation performance criteria contained in Test Method 1 or Test Method 2, as appropriate, of NFPA 701.

They shall exhibit a heat release rate not exceeding 100 kW when tested in accordance with NFPA 289 using the 20 kW ignition source.

12.4.7.11.2

Foamed plastics (see definition of cellular or foamed plastic in 3.3.42) shall be permitted to be used if they exhibit a heat release rate not exceeding 100 kW when tested in accordance with NFPA 289 using the 20 kW ignition source or by specific approval of the authority having jurisdiction.

12.4.7.11.3

Scenery and stage properties not separated from the audience by proscenium opening protection shall be of noncombustible materials, limited-combustible materials, or fire-retardant-treated wood.

12.4.7.11.4

In assembly occupancies, any single fuel package shall have a heat release rate not to exceed 100 kW where tested in accordance with one of the following:

UL 1975, Fire Tests for Foamed Plastics Used for Decorative Purposes

NFPA 289 using the 20 kW ignition source

12.4.8 Projection Rooms

12.4.8.1

Projection rooms shall comply with 12.4.8.2 through 12.4.8.10.

12.4.8.2

Where cellulose nitrate film is used, the projection room shall comply with NFPA 40.

12.4.8.3

Film or video projectors or spotlights utilizing light sources that produce particulate matter or toxic gases, or light sources that produce hazardous radiation, without protective shielding shall be located within a projection room complying with 12.3.2.1.2.

12.4.8.4

Every projection room shall be of permanent construction consistent with the building construction type in which the projection room is located and shall comply with the following:

Openings shall not be required to be protected.

The room shall have a floor area of not less than 80 ft2 (7.4 m2) for a single machine and not less than 40 ft2 (3.7 m2) for each additional machine.

Each motion picture projector, floodlight, spotlight, or similar piece of equipment shall have a clear working space of not less than 30 in. (760 mm) on each side and at its rear, but only one such space shall be required between adjacent projectors.

12.4.8.5

The projection room and the rooms appurtenant to it shall have a ceiling height of not less than 7 ft 6 in. (2285 mm).

12.4.8.6

Each projection room for safety film shall have not less than one out-swinging, self-closing door not less than 30 in. (760 mm) wide and 6 ft 8 in. (2030 mm) high.

12.4.8.7

The aggregate of ports and openings for projection equipment shall not exceed 25 percent of the area of the wall between the projection room and the auditorium, and all openings shall be provided with glass or other approved material so as to completely close the opening.

12.4.8.8

Projection room ventilation shall comply with 12.4.8.8.1 and 12.4.8.8.2.

12.4.8.8.1 Supply Air

12.4.8.8.1.1

Each projection room shall be provided with adequate air supply inlets arranged to provide well-distributed air throughout the room.

12.4.8.8.1.2

Air inlet ducts shall provide an amount of air equivalent to the amount of air being exhausted by projection equipment.

12.4.8.8.1.3

Air shall be permitted to be taken from the outside; from adjacent spaces within the building, provided that the volume and infiltration rate is sufficient; or from the building air-conditioning system, provided that it is arranged to supply sufficient air whether or not other systems are in operation.

12.4.8.8.2 Exhaust Air

12.4.8.8.2.1

Projection booths shall be permitted to be exhausted through the lamp exhaust system.

12.4.8.8.2.2

The lamp exhaust system shall be positively interconnected with the lamp so that the lamp cannot operate unless there is sufficient airflow required for the lamp.

12.4.8.8.2.3

Exhaust air ducts shall terminate at the exterior of the building in such a location that the exhaust air cannot be readily recirculated into any air supply system.

12.4.8.8.2.4

The projection room ventilation system shall be permitted also to serve appurtenant rooms, such as the generator room and the rewind room.

12.4.8.9

Each projection machine shall be provided with an exhaust duct that draws air from each lamp and exhausts it directly to the outside of the building.

12.4.8.9.1

The lamp exhaust shall be permitted to exhaust air from the projection room to provide room air circulation.

12.4.8.9.2

Lamp exhaust ducts shall be of rigid materials, except for a flexible connector approved for the purpose.

12.4.8.9.3

The projection lamp and projection room exhaust systems shall be permitted to be combined but shall not be interconnected with any other exhaust system or return-air system within the buildings.

12.4.8.9.4

Specifications for electric arc and xenon projection equipment shall comply with 12.4.8.9.4.1 and 12.4.8.9.4.2.

12.4.8.9.4.1 Electric Arc Projection Equipment

The exhaust capacity shall be 200 ft3/min (0.09 m3/s) for each lamp connected to the lamp exhaust system, or as recommended by the equipment manufacturer, and auxiliary air shall be permitted to be introduced into the system through a screened opening to stabilize the arc.

12.4.8.9.4.2 Xenon Projection Equipment

The lamp exhaust system shall exhaust not less than 300 ft3/min (0.14 m3/s) per lamp, or not less than the exhaust volume required or recommended by the equipment manufacturer, whichever is greater.

12.4.8.10

Miscellaneous equipment and storage shall be protected as follows:

Each projection room shall be provided with rewind and film storage facilities.

Flammable liquids containers shall be permitted in projection rooms, provided that all of the following criteria are met:

There are not more than four containers per projection room.

No container has a capacity exceeding 16 oz (0.5 L).

The containers are of a nonbreakable type.

Appurtenant electrical equipment, such as rheostats, transformers, and generators, shall be permitted to be located within the booth or in a separate room of equivalent construction.

12.4.9\* Special Amusement Buildings

12.4.9.1 General

12.4.9.1.1\*

Special amusement buildings, regardless of occupant load, shall meet the requirements for assembly occupancies in addition to the requirements of 12.4.9, unless the special amusement building is a multilevel play structure that is not more than 10 ft (3050 mm) in height and has aggregate horizontal projections not exceeding 160 ft2 (15 m2).

12.4.9.1.2\*

Special amusement buildings shall be subclassified as follows:

Class A: Permanently installed special amusement buildings that include an amusement ride or device in which patrons are contained or restrained and are unable to evacuate without the assistance of the ride operator

Class B: Permanently installed special amusement buildings that do not include an amusement ride or device, or that include an amusement ride or device from which patrons are able to self-evacuate

Class C: Temporary or mobile special amusement buildings

12.4.9.2 Means of Egress

12.4.9.2.1 Exit Marking

12.4.9.2.1.1

Exit marking shall be in accordance with Section 7.10.

12.4.9.2.1.2

Floor proximity exit signs shall be provided in accordance with 7.10.1.6.

12.4.9.2.1.3\*

In special amusement buildings where mazes, mirrors, or other designs are used to confound the egress path, approved directional exit marking that becomes apparent in an emergency shall be provided.

12.4.9.2.2 Illumination

12.4.9.2.2.1\*

Unless otherwise permitted by 12.4.9.2.2.2, actuation of the automatic sprinkler system, or any other suppression system, or actuation of a smoke detection system having an approved verification or cross-zoning operation capability shall provide for both of the following:

Increase in illumination in the means of egress to that required by Section 7.8

Termination of any conflicting or confusing sounds and visuals

12.4.9.2.2.2\*

Class A special amusement buildings shall not be required to comply with 12.4.9.2.2.1 where all of the following conditions apply:

The emergency action plan required by 12.4.9.6.2 provides specific evacuation instructions to all attraction operators for cycling out the attraction when it is determined that meeting the requirements of 12.4.9.2.2.1 presents a hazard to ride patrons.

A means of manually complying with 12.4.9.2.2.1 is provided to the primary attraction operator.

Attraction operators are trained on the alternative procedures for evacuations.

The authority having jurisdiction approves the modifications.

12.4.9.3 Interior Finish

Interior wall and ceiling finish materials complying with Section 10.2 shall be Class A throughout.

12.4.9.4 Detection, Alarm, and Communications Systems

12.4.9.4.1 General

12.4.9.4.1.1

Class A and Class B special amusement buildings shall be provided with an approved fire alarm system and smoke detection system in accordance with 9.6.1 and 12.4.9.4.

12.4.9.4.1.2

Class C special amusement buildings shall be provided with an approved automatic smoke detection system in accordance with Section 9.6.

12.4.9.4.2\* Initiation

12.4.9.4.2.1

In Class A and Class B special amusement buildings, the required fire alarm system shall be initiated by each of the following:

Manual fire alarm box located at a constantly attended location under continuous supervision by competent persons when the special amusement building is open to patrons

Required automatic sprinkler system

Required automatic detection systems

12.4.9.4.2.2

In Class C special amusement buildings, actuation of any smoke detection system device shall activate an audible and visible alarm in a constantly attended receiving station within the building when occupied for purposes of initiating emergency action.

12.4.9.4.3 Smoke Detection

Where the nature of the special amusement building is such that it operates in reduced lighting levels, the building shall be protected throughout by an approved automatic smoke detection system in accordance with Section 9.6.

12.4.9.4.4\* Notification

12.4.9.4.4.1

Occupant notification for Class A and Class B special amusement buildings shall be in accordance with 12.3.4.3.

12.4.9.4.4.2

Occupant notification for Class C special amusement buildings shall be in accordance with 12.3.4.3; however, positive alarm sequence shall not be permitted.

12.4.9.4.4.3\*

An automatic means for sounding the general evacuation alarm shall be provided when the constantly attended location is not staffed.

12.4.9.5 Extinguishment Requirements

12.4.9.5.1\*

Every special amusement building, other than buildings or structures not exceeding 10 ft (3050 mm) in height and not exceeding 160 ft2 (15 m2) in aggregate horizontal projection, shall be protected throughout by an approved, supervised automatic sprinkler system installed and maintained in accordance with Section 9.7.

12.4.9.5.2

Where the special amusement building required to be sprinklered by 12.4.9.5.1 is movable or portable, the sprinkler water supply shall be permitted to be provided by an approved temporary means.

12.4.9.6 Operating Features

12.4.9.6.1\* Furnishings, Decorations, and Scenery

Furnishings shall be in accordance with 12.7.4.

12.4.9.6.2\* Emergency Action Plan

In Class A special amusement buildings, the emergency action plan shall be reviewed and approved by the authority having jurisdiction.

12.4.10 Grandstands

12.4.10.1 General

Grandstands shall comply with the provisions of this chapter as modified by 12.4.10.

12.4.10.2 Seating

12.4.10.2.1

Where grandstand seating without backs is used indoors, rows of seats shall be spaced not less than 22 in. (560 mm) back-to-back.

12.4.10.2.2

The depth of footboards and seat boards in grandstands shall be not less than 9 in. (230 mm); where the same level is not used for both seat foundations and footrests, footrests independent of seats shall be provided.

12.4.10.2.3

Seats and footrests of grandstands shall be supported securely and fastened in such a manner that they cannot be displaced inadvertently.

12.4.10.2.4

Individual seats or chairs shall be permitted only if secured in rows in an approved manner, unless seats do not exceed 16 in number and are located on level floors and within railed-in enclosures, such as boxes.

12.4.10.2.5

The maximum number of seats permitted between the farthest seat and an aisle in grandstands and bleachers shall not exceed that shown in Table 12.4.10.2.5.

Table 12.4.10.2.5 Maximum Number of Seats Between Farthest Seat and an Aisle

Application Outdoors Indoors

Grandstands 11 6

Bleachers (See 12.2.5.8.1.2.) 20 9

12.4.10.3 Special Requirements — Wood Grandstands

12.4.10.3.1

An outdoor wood grandstand shall be erected within not less than two-thirds of its height, and, in no case, within not less than 10 ft (3050 mm), of a building, unless otherwise permitted by one of the following:

The distance requirement shall not apply to buildings having minimum 1-hour-fire-resistance-rated construction with openings protected against the fire exposure hazard created by the grandstand.

The distance requirement shall not apply where a wall having minimum 1-hour-fire-resistance-rated construction separates the grandstand from the building.

12.4.10.3.2

An outdoor wood grandstand unit shall not exceed 10,000 ft2 (929 m2) in finished ground level area or 200 ft (61 m) in length, and all of the following requirements also shall apply:

Grandstand units of the maximum size shall be placed not less than 20 ft (6100 mm) apart or shall be separated by walls having a minimum 1-hour fire resistance rating.

The number of grandstand units erected in any one group shall not exceed three.

Each group of grandstand units shall be separated from any other group by a wall having minimum 2-hour-fire-resistance-rated construction extending 24 in. (610 mm) above the seat platforms or by an open space of not less than 50 ft (15 m).

12.4.10.3.3

The finished ground level area or length required by 12.4.10.3.2 shall be permitted to be doubled where one of the following criteria is met:

Where the grandstand is constructed entirely of labeled fire-retardant-treated wood that has passed the standard rain test, ASTM D2898, Standard Test Methods for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing

Where the grandstand is constructed of members conforming to dimensions for heavy timber construction [Type IV (2HH)]

12.4.10.3.4

The highest level of seat platforms above the finished ground level or the surface at the front of any wood grandstand shall not exceed 20 ft (6100 mm).

12.4.10.3.5

The highest level of seat platforms above the finished ground level, or the surface at the front of a portable grandstand within a tent or membrane structure, shall not exceed 12 ft (3660 mm).

12.4.10.3.6

The height requirements specified in 12.4.10.3.4 and 12.4.10.3.5 shall be permitted to be doubled where constructed entirely of labeled fire-retardant-treated wood that has passed the standard rain test, ASTM D2898, Standard Test Methods for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing, or where constructed of members conforming to dimensions for heavy timber construction [Type IV (2HH)].

12.4.10.4 Special Requirements — Portable Grandstands

12.4.10.4.1

Portable grandstands shall conform to the requirements of 12.4.10 for grandstands and the requirements of 12.4.10.4.2 through 12.4.10.4.7.

12.4.10.4.2

Portable grandstands shall be self-contained and shall have within them all necessary parts to withstand and restrain all forces that might be developed during human occupancy.

12.4.10.4.3

Portable grandstands shall be designed and manufactured so that, if any structural members essential to the strength and stability of the structure have been omitted during erection, the presence of unused connection fittings shall make the omissions self-evident.

12.4.10.4.4

Portable grandstand construction shall be skillfully accomplished to produce the strength required by the design.

12.4.10.4.5

Portable grandstands shall be provided with base plates, sills, floor runners, or sleepers of such area that the permitted bearing capacity of the supporting material is not exceeded.

12.4.10.4.6

Where a portable grandstand rests directly on a base of such character that it is incapable of supporting the load without appreciable settlement, mud sills of suitable material, having sufficient area to prevent undue or dangerous settlement, shall be installed under base plates, runners, or sleepers.

12.4.10.4.7

All bearing surfaces of portable grandstands shall be in contact with each other.

12.4.10.5 Spaces Underneath Grandstands

Spaces underneath a grandstand shall be kept free of flammable or combustible materials, unless protected by an approved, supervised automatic sprinkler system in accordance with Section 9.7 or unless otherwise permitted by one of the following:

This requirement shall not apply to accessory uses of 300 ft2 (28 m2) or less, such as ticket booths, toilet facilities, or concession booths, where constructed of noncombustible or fire-resistive construction in otherwise nonsprinklered facilities.

This requirement shall not apply to rooms that are enclosed in not less than 1-hour-fire-resistance-rated construction and are less than 1000 ft2 (93 m2) in otherwise nonsprinklered facilities.

12.4.10.6 Guards and Railings

12.4.10.6.1

Railings or guards not less than 42 in. (1065 mm) above the aisle surface or footrest or not less than 36 in. (915 mm) vertically above the center of the seat or seat board surface, whichever is adjacent, shall be provided along those portions of the backs and ends of all grandstands where the seats are more than 48 in. (1220 mm) above the floor or the finished ground level.

12.4.10.6.2

The requirement of 12.4.10.6.1 shall not apply where an adjacent wall or fence affords equivalent safeguard.

12.4.10.6.3

Where the front footrest of any grandstand is more than 24 in. (610 mm) above the floor, railings or guards not less than 33 in. (825 mm) above such footrests shall be provided.

12.4.10.6.4

The railings required by 12.4.10.6.3 shall be permitted to be not less than 26 in. (660 mm) high in grandstands or where the front row of seats includes backrests.

12.4.10.6.5

Cross aisles located within the seating area shall be provided with rails not less than 26 in. (660 mm) high along the front edge of the cross aisle.

12.4.10.6.6

The railings specified by 12.4.10.6.5 shall not be required where the backs of the seats in front of the cross aisle project 24 in. (610 mm) or more above the surface of the cross aisle.

12.4.10.6.7

Vertical openings between guardrails and footboards or seat boards shall be provided with intermediate construction so that a 4 in. (100 mm) diameter sphere cannot pass through the opening.

12.4.10.6.8

An opening between the seat board and footboard located more than 30 in. (760 mm) above the finished ground level shall be provided with intermediate construction so that a 4 in. (100 mm) diameter sphere cannot pass through the opening.

12.4.11 Folding and Telescopic Seating

12.4.11.1 General

Folding and telescopic seating shall comply with the provisions of this chapter as modified by 12.4.11.

12.4.11.2 Seating

12.4.11.2.1

The horizontal distance of seats, measured back-to-back, shall be not less than 22 in. (560 mm) for seats without backs, and all of the following requirements shall also apply:

There shall be a space of not less than 12 in. (305 mm) between the back of each seat and the front of each seat immediately behind it.

If seats are of the chair type, the 12 in. (305 mm) dimension shall be measured to the front edge of the rear seat in its normal unoccupied position.

All measurements shall be taken between plumb lines.

12.4.11.2.2

The depth of footboards (footrests) and seat boards in folding and telescopic seating shall be not less than 9 in. (230 mm).

12.4.11.2.3

Where the same level is not used for both seat foundations and footrests, footrests independent of seats shall be provided.

12.4.11.2.4

Individual chair-type seats shall be permitted in folding and telescopic seating only if firmly secured in groups of not less than three.

12.4.11.2.5

The maximum number of seats permitted between the farthest seat in an aisle in folding and telescopic seating shall not exceed that shown in Table 12.4.10.2.5.

12.4.11.3 Guards and Railings

12.4.11.3.1

Railings or guards not less than 42 in. (1065 mm) above the aisle surface or footrest, or not less than 36 in. (915 mm) vertically above the center of the seat or seat board surface, whichever is adjacent, shall be provided along those portions of the backs and ends of all folding and telescopic seating where the seats are more than 48 in. (1220 mm) above the floor or the finished ground level.

12.4.11.3.2

The requirement of 12.4.11.3.1 shall not apply where an adjacent wall or fence affords equivalent safeguard.

12.4.11.3.3

Where the front footrest of folding or telescopic seating is more than 24 in. (610 mm) above the floor, railings or guards not less than 33 in. (825 mm) above such footrests shall be provided.

12.4.11.3.4

The railings required by 12.4.11.3.3 shall be permitted to be not less than 26 in. (660 mm) high where the front row of seats includes backrests.

12.4.11.3.5

Cross aisles located within the seating area shall be provided with rails not less than 26 in. (660 mm) high along the front edge of the cross aisle.

12.4.11.3.6

The railings specified by 12.4.11.3.5 shall not be required where the backs of the seats in front of the cross aisle project 24 in. (610 mm) or more above the surface of the cross aisle.

12.4.11.3.7

Vertical openings between guardrails and footboards or seat boards shall be provided with intermediate construction so that a 4 in. (100 mm) diameter sphere cannot pass through the opening.

12.4.11.3.8

An opening between the seat board and footboard located more than 30 in. (760 mm) above the finished ground level shall be provided with intermediate construction so that a 4 in. (100 mm) diameter sphere cannot pass through the opening.

12.4.12 Airport Loading Walkways

12.4.12.1

Airport loading walkways shall conform to NFPA 415 and the provisions of 12.4.12.2 and 12.4.12.3.

12.4.12.2

Doors in the egress path from the aircraft through the airport loading walkway into the airport terminal building shall meet both of the following criteria:

They shall swing in the direction of egress from the aircraft.

\*They shall not be permitted to have delayed-egress locks.

12.4.12.3

Exit access shall be unimpeded from the airport loading walkway to the nonsecured public areas of the airport terminal building.

12.5 Building Services

12.5.1 Utilities

Utilities shall comply with the provisions of Section 9.1.

12.5.2 Heating, Ventilating, and Air-Conditioning Equipment

Heating, ventilating, and air-conditioning equipment shall comply with the provisions of Section 9.2.

12.5.3 Elevators, Escalators, and Conveyors

Elevators, escalators, and conveyors shall comply with the provisions of Section 9.4.

12.5.4 Waste Chutes, Incinerators, and Laundry Chutes

Waste chutes, incinerators, and laundry chutes shall comply with the provisions of Section 9.5.

12.6 Reserved

12.7 Operating Features

12.7.1 Means of Egress Inspection

12.7.1.1

The building owner or agent shall inspect the means of egress to ensure it is maintained free of obstructions, and correct any deficiencies found, prior to each opening of the building to the public.

12.7.1.2

The building owner or agent shall prepare and maintain records of the date and time of each inspection on approved forms, listing any deficiencies found and actions taken to correct them.

12.7.1.3 Inspection of Door Openings

Door openings shall be inspected in accordance with 7.2.1.14.

12.7.2 Special Provisions for Food Service Operations

12.7.2.1

All devices in connection with the preparation of food shall be installed and operated to avoid hazard to the safety of occupants.

12.7.2.2

All devices in connection with the preparation of food shall be of an approved type and shall be installed in an approved manner.

12.7.2.3

Food preparation facilities shall be protected in accordance with 9.2.3 and shall not be required to have openings protected between food preparation areas and dining areas.

12.7.2.4

Portable cooking equipment that is not flue-connected shall be permitted only as follows:

Equipment fueled by small heat sources that can be readily extinguished by water, such as candles or alcohol-burning equipment, including solid alcohol, shall be permitted to be used, provided that precautions satisfactory to the authority having jurisdiction are taken to prevent ignition of any combustible materials.

Candles shall be permitted to be used on tables used for food service where securely supported on substantial noncombustible bases located to avoid danger of ignition of combustible materials and only where approved by the authority having jurisdiction.

Candle flames shall be protected.

"Flaming sword" or other equipment involving open flames and flamed dishes, such as cherries jubilee or crêpes suzette, shall be permitted to be used, provided that precautions subject to the approval of the authority having jurisdiction are taken.

Listed and approved LP-Gas commercial food service appliances shall be permitted to be used where in accordance with NFPA 58.

12.7.3 Open Flame Devices and Pyrotechnics

No open flame devices or pyrotechnic devices shall be used in any assembly occupancy, unless otherwise permitted by one of the following:

Pyrotechnic special effect devices shall be permitted to be used on stages before proximate audiences for ceremonial or religious purposes, as part of a demonstration in exhibits, or as part of a performance, provided that both of the following criteria are met:

Precautions satisfactory to the authority having jurisdiction are taken to prevent ignition of any combustible material.

Use of the pyrotechnic device complies with NFPA 1126.

Flame effects before an audience shall be permitted in accordance with NFPA 160.

Open flame devices shall be permitted to be used in the following situations, provided that precautions satisfactory to the authority having jurisdiction are taken to prevent ignition of any combustible material or injury to occupants:

\*For ceremonial or religious purposes

On stages and platforms where part of a performance

Where candles on tables are securely supported on substantial noncombustible bases and candle flame is protected

The requirement of 12.7.3 shall not apply to heat-producing equipment complying with 9.2.2.

The requirement of 12.7.3 shall not apply to food service operations in accordance with 12.7.2.

Gas lights shall be permitted to be used, provided that precautions are taken, subject to the approval of the authority having jurisdiction, to prevent ignition of any combustible materials.

12.7.4 Furnishings, Decorations, and Scenery

12.7.4.1\*

Fabrics and films used for decorative purposes, all draperies and curtains, and similar furnishings shall be in accordance with the provisions of 10.3.1.

12.7.4.2

The authority having jurisdiction shall impose controls on the quantity and arrangement of combustible contents in assembly occupancies to provide an adequate level of safety to life from fire.

12.7.4.3\*

Exposed foamed plastic materials and unprotected materials containing foamed plastic used for decorative purposes or stage scenery shall have a heat release rate not exceeding 100 kW where tested in accordance with one of the following:

UL 1975, Fire Tests for Foamed Plastics Used for Decorative Purposes

NFPA 289 using the 20 kW ignition source

12.7.4.4

The requirement of 12.7.4.3 shall not apply to individual foamed plastic items and items containing foamed plastic where the foamed plastic does not exceed 1 lb (0.45 kg) in weight.

12.7.5 Special Provisions for Exposition Facilities

12.7.5.1 General

No display or exhibit shall be installed or operated to interfere in any way with access to any required exit or with the visibility of any required exit or required exit sign; nor shall any display block access to fire-fighting equipment.

12.7.5.2 Materials Not on Display

A storage room having an enclosure consisting of a smoke barrier having a minimum 1-hour fire resistance rating and protected by an automatic extinguishing system shall be provided for combustible materials not on display, including combustible packing crates used to ship exhibitors' supplies and products.

12.7.5.3 Exhibits

12.7.5.3.1

Exhibits shall comply with 12.7.5.3.2 through 12.7.5.3.11.

12.7.5.3.2

The travel distance within the exhibit booth or exhibit enclosure to an exit access aisle shall not exceed 50 ft (15 m).

12.7.5.3.3

The upper deck of multilevel exhibits exceeding 300 ft2 (28 m2) shall have not less than two remote means of egress.

12.7.5.3.4

Exhibit booth construction materials shall be limited to the following:

Noncombustible or limited-combustible materials

Wood exceeding 1/4 in. (6.3 mm) nominal thickness

Wood that is pressure-treated, fire-retardant wood meeting the requirements of NFPA 703

Flame-retardant materials complying with one of the following:

They shall meet the flame propagation performance criteria contained in Test Method 1 or Test Method 2, as appropriate, of NFPA 701.

They shall exhibit a heat release rate not exceeding 100 kW when tested in accordance with NFPA 289 using the 20 kW ignition source.

Textile wall coverings, such as carpeting and similar products used as wall or ceiling finishes, complying with the provisions of 10.2.2 and 10.2.4.4

Plastics limited to those that comply with 12.3.3 and Section 10.2

Foamed plastics and materials containing foamed plastics having a heat release rate for any single fuel package that does not exceed 100 kW where tested in accordance with one of the following:

UL 1975, Fire Tests for Foamed Plastics Used for Decorative Purposes

NFPA 289 using the 20 kW ignition source

Cardboard, honeycombed paper, and other combustible materials having a heat release rate for any single fuel package that does not exceed 150 kW where tested in accordance with one of the following:

UL 1975, Fire Tests for Foamed Plastics Used for Decorative Purposes

NFPA 289 using the 20 kW ignition source

12.7.5.3.5

Curtains, drapes, and decorations shall comply with 10.3.1.

12.7.5.3.6

Acoustical and decorative material including, but not limited to, cotton, hay, paper, straw, moss, split bamboo, and wood chips shall be flame-retardant-treated to the satisfaction of the authority having jurisdiction.

12.7.5.3.6.1

Materials that cannot be treated for flame retardancy shall not be used.

12.7.5.3.6.2

Foamed plastics, and materials containing foamed plastics and used as decorative objects such as, but not limited to, mannequins, murals, and signs, shall have a heat release rate for any single fuel package that does not exceed 150 kW where tested in accordance with one of the following:

UL 1975, Fire Tests for Foamed Plastics Used for Decorative Purposes

NFPA 289 using the 20 kW ignition source

12.7.5.3.6.3

Where the aggregate area of acoustical and decorative materials is less than 10 percent of the individual floor or wall area, such materials shall be permitted to be used subject to the approval of the authority having jurisdiction.

12.7.5.3.7

The following shall be protected by automatic extinguishing systems:

Single-level exhibit booths exceeding 300 ft2 (28 m2) and covered with a ceiling

Each level of multilevel exhibit booths, including the uppermost level where the uppermost level is covered with a ceiling

12.7.5.3.7.1

The requirements of 12.7.5.3.7 shall not apply where otherwise permitted by the following:

Ceilings that are constructed of open grate design or listed dropout ceilings in accordance with NFPA 13 shall not be considered ceilings within the context of 12.7.5.3.7.

Vehicles, boats, and similar exhibited products having over 100 ft2 (9.3 m2) of roofed area shall be provided with smoke detectors acceptable to the authority having jurisdiction.

\*The requirement of 12.7.5.3.7(2) shall not apply where fire protection of multilevel exhibit booths is consistent with the criteria developed through a life safety evaluation of the exhibition hall in accordance with 12.4.2, subject to approval of the authority having jurisdiction.

12.7.5.3.7.2

A single exhibit or group of exhibits with ceilings that do not require sprinklers shall be separated by a distance of not less than 10 ft (3050 mm) where the aggregate ceiling exceeds 300 ft2 (28 m2).

12.7.5.3.7.3

The water supply and piping for the sprinkler system shall be permitted to be of an approved temporary means that is provided by a domestic water supply, a standpipe system, or a sprinkler system.

12.7.5.3.8

Open flame devices within exhibit booths shall comply with 12.7.3.

12.7.5.3.9

Cooking and food-warming devices in exhibit booths shall comply with 12.7.2 and all of the following:

Gas-fired devices shall comply with the following:

Natural gas-fired devices shall comply with 9.1.1.

The requirement of 12.7.5.3.9(1)(a) shall not apply to compressed natural gas where permitted by the authority having jurisdiction.

The use of LP-Gas cylinders shall be prohibited.

Nonrefillable LP-Gas cylinders shall be approved for use where permitted by the authority having jurisdiction.

The devices shall be isolated from the public by not less than 48 in. (1220 mm) or by a barrier between the devices and the public.

Multi-well cooking equipment using combustible oils or solids shall comply with 9.2.3.

Single-well cooking equipment using combustible oils or solids shall meet all of the following criteria:

The equipment shall have lids available for immediate use.

The equipment shall be limited to 2 ft2 (0.2 m2) of cooking surface.

The equipment shall be placed on noncombustible surface materials.

The equipment shall be separated from each other by a horizontal distance of not less than 24 in. (610 mm).

The requirement of 12.7.5.3.9(4)(d) shall not apply to multiple single-well cooking equipment where the aggregate cooking surface area does not exceed 2 ft2 (0.2 m2).

The equipment shall be kept at a horizontal distance of not less than 24 in. (610 mm) from any combustible material.

A portable fire extinguisher in accordance with Section 9.9 shall be provided within the booth for each device, or an approved automatic extinguishing system shall be provided.

12.7.5.3.10

Combustible materials within exhibit booths shall be limited to a one-day supply. Storage of combustible materials behind the booth shall be prohibited. (See 12.7.4.2 and 12.7.5.2.)

12.7.5.3.11

Plans for the exposition, in an acceptable form, shall be submitted to the authority having jurisdiction for approval prior to setting up any exhibit.

12.7.5.3.11.1

The plan shall show all details of the proposed exposition.

12.7.5.3.11.2

No exposition shall occupy any exposition facility without approved plans.

12.7.5.4 Vehicles

Vehicles on display within an exposition facility shall comply with 12.7.5.4.1 through 12.7.5.4.5.

12.7.5.4.1

All fuel tank openings shall be locked and sealed in an approved manner to prevent the escape of vapors; fuel tanks shall not contain in excess of one-half their capacity or contain in excess of 10 gal (38 L) of fuel, whichever is less.

12.7.5.4.2

At least one battery cable shall be removed from the batteries used to start the vehicle engine, and the disconnected battery cable shall then be taped.

12.7.5.4.3

Batteries used to power auxiliary equipment shall be permitted to be kept in service.

12.7.5.4.4

Fueling or defueling of vehicles shall be prohibited.

12.7.5.4.5

Vehicles shall not be moved during exhibit hours.

12.7.5.5 Prohibited Materials

12.7.5.5.1

The following items shall be prohibited within exhibit halls:

Compressed flammable gases

Flammable or combustible liquids

Hazardous chemicals or materials

Class II or greater lasers, blasting agents, and explosives

12.7.5.5.2

The authority having jurisdiction shall be permitted to allow the limited use of any items specified in 12.7.5.5.1 under special circumstances.

12.7.5.6 Alternatives

See Section 1.4.

12.7.6 Crowd Managers

12.7.6.1

Assembly occupancies shall be provided with a minimum of one trained crowd manager or crowd manager supervisor. Where the occupant load exceeds 250, additional trained crowd managers or crowd manager supervisors shall be provided at a ratio of one crowd manager or crowd manager supervisor for every 250 occupants, unless otherwise permitted by one of the following:

This requirement shall not apply to assembly occupancies used exclusively for religious worship with an occupant load not exceeding 500.

The ratio of trained crowd managers to occupants shall be permitted to be reduced where, in the opinion of the authority having jurisdiction, the existence of an approved, supervised automatic sprinkler system and the nature of the event warrant.

12.7.6.2\*

The crowd manager and crowd manager supervisor shall receive approved training in crowd management techniques.

12.7.6.3

Duties and responsibilities for the crowd manager and crowd manager supervisor shall be documented within a written emergency plan as required by 12.7.13.

12.7.6.4\*

The training for the duties and responsibilities of crowd managers shall include the following:

Understanding crowd manager roles and responsibilities

Understanding safety and security hazards that can endanger public assembly

Understanding crowd management techniques

Introduction to fire safety and fire safety equipment

Understanding methods of evacuation and movement

Understanding procedures for reporting emergencies

Understanding crowd management emergency response procedures

Understanding the paths of travel and exits, facility evacuation and emergency response procedures and, where provided, facility shelter-in-place procedures

Familiarization with the venue and guest services training

Other specific event-warranted training

12.7.6.5

The training for the duties and responsibilities of crowd manager supervisors shall include the following:

The duties described in 12.7.6.4

Understanding crowd manager supervisor roles and responsibilities

Understanding incident management procedures

Understanding the facility evacuation plan

Understanding the facility command structure

12.7.7\* Drills

12.7.7.1

The employees or attendants of assembly occupancies shall be trained and drilled in the duties they are to perform in case of fire, panic, or other emergency to effect orderly exiting.

12.7.7.2

Employees or attendants of assembly occupancies shall be instructed in the proper use of portable fire extinguishers and other manual fire suppression equipment where provided.

12.7.7.3\*

In the following assembly occupancies, an audible announcement shall be made, or a projected image shall be shown, prior to the start of each program that notifies occupants of the location of the exits to be used in case of a fire or other emergency:

Theaters

Motion picture theaters

Auditoriums

Other similar assembly occupancies with occupant loads exceeding 300 where there are noncontinuous programs

12.7.7.4

The requirement of 12.7.7.3 shall not apply to assembly occupancies in schools where used for nonpublic events.

12.7.8 Smoking

12.7.8.1

Smoking in assembly occupancies shall be regulated by the authority having jurisdiction.

12.7.8.2

In rooms or areas where smoking is prohibited, plainly visible signs shall be posted that read as follows:

NO SMOKING

12.7.8.3

No person shall smoke in prohibited areas that are so posted, unless permitted by the authority having jurisdiction under both of the following conditions:

Smoking shall be permitted on a stage only where it is a necessary and rehearsed part of a performance.

Smoking shall be permitted only where the smoker is a regular performing member of the cast.

12.7.8.4

Where smoking is permitted, suitable ashtrays or receptacles shall be provided in convenient locations.

12.7.9 Seating

12.7.9.1 Secured Seating

12.7.9.1.1

Seats in assembly occupancies accommodating more than 200 persons shall be securely fastened to the floor, except where fastened together in groups of not less than three and as permitted by 12.7.9.1.2 and 12.7.9.2.

12.7.9.1.2

Balcony and box seating areas that are separated from other areas by rails, guards, partial-height walls, or other physical barriers and have a maximum of 14 seats shall be exempt from the requirement of 12.7.9.1.1.

12.7.9.2 Unsecured Seating

12.7.9.2.1

Seats not secured to the floor shall be permitted in restaurants, night clubs, and other occupancies where fastening seats to the floor might be impracticable.

12.7.9.2.2

Unsecured seats shall be permitted, provided that, in the area used for seating, excluding such areas as dance floors and stages, there is not more than one seat for each 15 ft2 (1.4 m2) of net floor area, and adequate aisles to reach exits are maintained at all times.

12.7.9.2.3

Seating diagrams shall be submitted for approval by the authority having jurisdiction to permit an increase in occupant load per 7.3.1.3.

12.7.9.3 Occupant Load Posting

12.7.9.3.1

Every room constituting an assembly occupancy and not having fixed seats shall have the occupant load of the room posted in a conspicuous place near the main exit from the room.

12.7.9.3.2

Approved signs shall be maintained in a legible manner by the owner or authorized agent.

12.7.9.3.3

Signs shall be durable and shall indicate the number of occupants permitted for each room use.

12.7.10 Maintenance of Outdoor Grandstands

12.7.10.1

The owner shall provide for not less than annual inspection and required maintenance of each outdoor grandstand to ensure safe conditions.

12.7.10.2

At least biennially, the inspection shall be performed by a professional engineer, registered architect, or individual certified by the manufacturer.

12.7.10.3

Where required by the authority having jurisdiction, the owner shall provide a copy of the inspection report and certification that the inspection required by 12.7.10.2 has been performed.

12.7.11 Maintenance and Operation of Folding and Telescopic Seating

12.7.11.1

Instructions in both maintenance and operation shall be transmitted to the owner by the manufacturer of the seating or his or her representative.

12.7.11.2

Maintenance and operation of folding and telescopic seating shall be the responsibility of the owner or his or her duly authorized representative and shall include all of the following:

During operation of the folding and telescopic seats, the opening and closing shall be supervised by responsible personnel who shall ensure that the operation is in accordance with the manufacturer's instructions.

Only attachments specifically approved by the manufacturer for the specific installation shall be attached to the seating.

An annual inspection and required maintenance of each grandstand shall be performed to ensure safe conditions.

At least biennially, the inspection shall be performed by a professional engineer, registered architect, or individual certified by the manufacturer.

12.7.12 Clothing

Clothing and personal effects shall not be stored in corridors, and spaces not separated from corridors, unless otherwise permitted by one of the following:

This requirement shall not apply to corridors, and spaces not separated from corridors, that are protected by an approved, supervised automatic sprinkler system in accordance with Section 9.7.

This requirement shall not apply to corridors, and spaces not separated from corridors, that are protected by a smoke detection system in accordance with Section 9.6.

This requirement shall not apply to storage in metal lockers, provided that the required egress width is maintained.

12.7.13 Emergency Action Plans

12.7.13.1

Emergency action plans shall be provided in accordance with Section 4.8.

12.7.13.2

Where assembly occupancies are located in the high-rise portion of a building, the emergency action plan shall include egress procedures, methods, and preferred routes for each event considered to be a life safety hazard that could impact the building, including the appropriateness of the use of elevators.

12.7.14 Integrated Fire Protection and Life Safety Systems

Integrated fire protection and life safety systems shall be tested in accordance with 9.11.4.1.





