Exception No. 2: Facilities of less than 930 m^2 (10,000 ft²) and protected throughout by an approved, supervised automatic sprinkler system.

Exception No. 3: An area in an adjoining occupancy shall be permitted to serve as a smoke compartment for the ambulatory health care facility if the following criteria are met:

- (1) The separating wall and both compartments meet the requirements of 5.14.2.
- (2) The ambulatory health care facility is less than 2100 m^2 (22,500 ft^2)
- (3) Access from the ambulatory health care facility to the other occupancy is unrestricted.

5.14.2.2 Any required smoke barrier shall have a fire resistance rating of at least 1 hour.

Exception: Dampers shall not be required in duct penetrations of smoke barriers in fully ducted heating, ventilating, and airconditioning systems for buildings protected throughout by an approved, supervised automatic sprinkler system.

5.14.2.3 Vision panels in the smoke barrier shall be of fixed fire window assemblies.

5.14.2.4 At least 1.4 net m^2 (15 net ft^2) per ambulatory health care facility occupant shall be provided within the aggregate area of corridors, patient rooms, treatment rooms, lounges, and other low-hazard areas on each side of the smoke compartment for the total number of occupants in adjoining compartments. Smoke barriers shall be provided to limit the size of each smoke compartment to an area not exceeding 2100 m² (22,500 ft²) and to limit the travel distance from any point to reach a door in the required smoke barrier to 60 m (200 ft).

Exception: The area of an atrium shall not be limited in size.

5.14.2.5* Doors in smoke barriers shall be at least 44-mm $(1^{3}4-in.)$ thick, solid bonded wood core or the equivalent and shall be self-closing. A vision panel shall be required.

5.14.2.6 Doors in smoke barriers shall normally be kept closed, or, if held open, they shall be equipped with automatic devices that release the doors upon activation of the following:

- (1) The fire alarm system, and either
- (2) A local smoke detector, or
- (3) A complete automatic fire-extinguishing system or complete automatic fire detection system

5.14.3 Detention and Correctional Occupancies.

5.14.3.1* Smoke barriers shall be provided to divide every story used for sleeping by residents, or any other story having an occupant load of 50 or more persons, into a minimum of two compartments.

Exception No. 1: Protection shall be permitted to be accomplished with horizontal exits. (See 5.2.4.)

Exception No. 2: The requirement for subdivision of building space shall be permitted to be fulfilled by one of the following: (1), (2), or (3). Doors used to access the areas specified in (1), (2), and (3) of this exception shall meet the requirements for doors at smoke barriers for the applicable use condition.

- (1) Smoke compartments having exit to a public way where such exit serves only one area and has no openings to other areas
- (2) A building separated from the resident housing area by a 2-hour fire resistance rating or 15 m (50 ft) of open space

(3) A secured, open area having a holding space located 15 m (50 ft) from the housing area that provides $1.4 m^2$ (15 ft²) or more of refuge area for each person (resident, staff, visitors) potentially present at the time of a fire.

5.14.3.2 Where smoke barriers are required by 5.14.3.1, smoke barriers shall be provided to limit the following:

- (1) The housing not to exceed 200 residents in any smoke compartment
- (2) The travel distance to a door in a smoke barrier as follows:
 - (a) From any room door required as exit access to a maximum of 45 m (150 ft)
 (b) From prior to be a series to a maximum of 60 methods.
 - (b) From any point in a room to a maximum of 60 m (200 ft) (See 7.2.34 for exemption to this requirement.)

5.14.3.3* Any required smoke barrier shall be of substantial construction and shall have structural fire resistance.

5.14.3.4* Openings in smoke barriers shall be protected.

Exception No. 1: There shall be no restriction on the total number of vision panels in any barrier.

Exception No. 2: Sliding doors in smoke barriers that are designed to normally be kept closed and are remotely operated from a continuously attended location shall not be required to be self-closing.

5.14.3.5 Not less than 0.56 net m² (6 net ft²) per occupant shall be provided on each side of the smoke barrier for the total number of occupants in adjoining compartments. This space shall be readily available wherever occupants are moved across the smoke barrier in a fire emergency.

5.14.3.6 Doors shall provide resistance to the passage of smoke. Swinging doors shall be self-latching, or the opening resistance of the door shall be a minimum of 22 N (5 lbf).

5.14.3.7 Doors in smoke barriers shall conform with the requirements for doors in means of egress and shall have locking and release arrangements according to the applicable use condition. The provisions of the Exception to 5.2.1.6.3.2 shall not be used for smoke barrier doors that serve a smoke compartment containing more than 20 persons.

5.14.3.8 Vision panels shall be provided in smoke barriers at points where the barrier crosses an exit access corridor.

5.14.3.9 Smoke dampers shall be provided.

Exception: Other arrangements and positioning of smoke detectors shall be permitted to prevent damage or tampering or to be used for other purposes, provided the function of detecting any fire is fulfilled and the placement of detectors is such that the speed of detection shall be equivalent to that provided by the required spacing and arrangement.

5.14.3.10 Smoke Venting. (Reserved)

5.14.4 Educational Occupancies.

5.14.4.1 School buildings shall be subdivided into compartments by smoke barriers having a 1-hour fire resistance rating where one or both of the following conditions exist: (1) The maximum area of a compartment, including the aggregate area of all floors having a common atmosphere, exceeds 2800 m² (30,000 ft²). (2) The length or width of the building exceeds 91 m (300 ft).

Exception No. 1: This requirement shall not apply where all spaces normally subject to student occupancy have not less than one door opening directly to the outside or to an exterior or exit access balcony or corridor in accordance with 5.5.3.

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Exception No. 2: This requirement shall not apply to buildings that consist of only one story and are protected throughout by an approved, supervised automatic sprinkler system.

5.14.4.2 The area of a smoke compartment shall not exceed $2800 \text{ m}^2 (30,000 \text{ ft}^2)$, with no dimension exceeding 91 m (300 ft).

Exception: In buildings protected throughout by an approved, supervised automatic sprinkler system, there shall be no limitation on smoke compartment size, provided that the floor is divided into not less than two smoke compartments.

5.15 Special Provisions for Assembly Occupancy Seating.

5.15.1 Seating Arranged in Rows. 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 5.15.1. The minimum clear widths shown shall be modified in accordance with all of the following:

(1) If risers exceed 178 mm in height, multiply the stair width in the table by factor *A*, where

$$A = 1 + \frac{\text{riser height} - 178}{125}$$

(2) If risers exceed 7 in. in height, multiply the stair width in the table by factor *A*, where

$$A = 1 + \frac{\text{riser height} - 7}{5}$$

- (3) Stairs not having a handrail within a 760-mm (30-in.) horizontal distance shall be 25 percent wider than otherwise calculated; that is, multiply by factor *B*, which equals 1.25.
- (4) Ramps steeper than 1 in 10 slope where used in ascent shall have their width increased by 10 percent; that is, multiply by factor *C*, which equals 1.10.

Table 5.15.1 Capacity Factors for Assembly Occupancy Seating

	(Clear Width per Seat Served			
	Stairs		Passageways, Ramps, and Doorways		
No. of Seats	mm	in.	mm	in.	
Unlimited	7.6 AB	0.3 AB	5.6 C	0.22 C	

Exception No. 1: Lighting and access catwalks.

Exception No. 2: Grandstands, bleachers, and folding and telescopic seating.

5.15.2 General Requirements for Access and Egress Routes Within Assembly Areas.

5.15.2.1 Festival seating shall be prohibited within a building. (*See 3.3.88.1, Festival Seating.*)

Exception No. 1: Festival seating shall be permitted in assembly occupancies with occupant loads not exceeding 1000.

Exception No. 2: Festival seating shall be permitted in assembly occupancies with occupant loads exceeding 1000 with an approved life safety evaluation. (See 5.15.9.) **5.15.2.2*** 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. Where aisle accessways or aisles converge to form a single path of egress travel, the required egress capacity of that path shall not be less than the combined required capacity of the converging aisle accessways and aisles.

5.15.2.3 Those portions of aisle accessways and aisles where egress is possible in either of two directions shall be uniform in required width.

Exception: Those portions of aisle accessways where the required width, not including the seat space described by 5.15.5.2, does not exceed 305 mm (12 in.).

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

5.15.3* Aisle Accessways Serving Seating Not at Tables.

5.15.3.1* To determine the required clear width of aisle accessways between rows of seating, horizontal measurements shall be made (between vertical planes) from the back of one seat to the front of the most forward projection of the seat immediately behind it. Where the entire row consists of automatic or self-rising seats that comply with ASTM F 851, *Standard Test Method for Self-Rising Seat Mechanisms*, the measurement shall be permitted to be made with the seats in the up position.

5.15.3.2 The aisle accessway between rows of seating shall have a clear width of not less than 305 mm (12 in.), and this minimum shall be increased as a function of row length in accordance with 5.15.3.3 and 5.15.3.4.

Exception No. 1: If used by not more than four persons, there shall be no minimum clear width requirement for the portion of the aisle accessway that has a length not exceeding 1830 mm (72 in.), measured from the center of the seat farthest from the aisle.

Exception No. 2: The maximum number of seats permitted between the farthest seat in an aisle in grandstands, bleachers, and folding and telescopic seating shall not exceed that shown in Table 5.15.3.2 Exception No. 2.

Table 5.15.3.2 Exception No. 2 Maximum Number of SeatsPermitted Between Farthest Seat and an Aisle

Application	Outdoors	Indoors
Grandstands	11	6
Bleachers (see 5.15.4.1,	20	9
Exception No. 1)		

5.15.3.3* Rows of seating served by aisles or doorways at both ends shall have no more than 100 seats per row. The 305-mm (12-in.) minimum clear width of aisle accessway between such rows shall be increased by 7.6 mm (0.3 in.) for every seat over a total of 14 but shall not be required to exceed 560 mm (22 in.).

Exception: Smoke-protected assembly seating as permitted by 5.15.10.4.

5.15.3.4 Rows of seating served by an aisle or doorway at one end only shall have a path of travel not exceeding 9140 mm (360 in.) in length from any seat to an aisle. The 305 mm (12 in.) minimum clear width of aisle accessway between such rows shall be increased by 15 mm (0.6 in.) for every seat over a total of seven.

Exception: Smoke-protected assembly seating as permitted by 5.15.10.5 and 5.15.10.6.

5.15.3.5 Rows of seating utilizing tablet-arm chairs shall be permitted only if the clear width of aisle accessways complies with the requirements of 5.15.3 where the tablet is in the usable position.

Exception: Tablet arms shall be permitted to be measured 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.

5.15.3.6 The depth of seat boards shall not be less than 230 mm (9 in.) where the same level is not used for both seat boards and footboards. Footboards, independent of seats, shall be provided such that there is no horizontal opening permitting the passage of a 13-mm ($\frac{1}{2}$ -in.) diameter sphere.

5.15.4 Aisles Serving Seating Not at Tables.

5.15.4.1 Aisles shall be provided so that the number of seats served by the nearest aisle is in accordance with 5.15.3.2 through 5.15.3.4.

Exception No. 1: Aisles shall not be required in bleachers if all of the following conditions are met:

- (1) Egress from the front row is not obstructed by a rail, guard, or other obstruction.
- (2) Row spacing is 710 mm (28 in.) or less.
- (3) The rise per row, including the first row, is 150 mm (6 in.) or less.
- (4) The number of rows does not exceed 16.
- (5) Seat spaces are not physically defined.
- (6) Seat boards that are also used as stepping surfaces for descent shall provide a walking surface with a minimum width of 305 mm (12 in.), and, where there is a depressed footboard, the gap between seat boards of adjacent rows shall not exceed 305 mm (12 in.) measured horizontally. Leading edges of such surfaces shall be provided with a contrasting marking stripe so that the location of such leading edge is readily apparent, particularly where viewed in descent. Such stripe shall be at least 25 mm (1 in.) wide and shall not exceed 51 mm (2 in.) 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.

Exception No. 2: In seating composed entirely of bleachers, in which the row-to-row dimension is 710 mm (28 in.) or less, and from which front egress is not limited, aisles shall not be required to be more than 1675 mm (66 in.) in width. Such aisles shall not be considered as dead-end aisles.

5.15.4.2 Dead-end aisles shall not exceed 6100 mm (240 in.) in length.

Exception No. 1: A longer dead-end aisle shall be permitted 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 minimum clear width of not less than 305 mm (12 in.) plus 15 mm (0.6 in.) for each additional seat over a total of 7 in the row. *Exception No. 2: A 16-row, dead-end aisle shall be permitted in folding and telescopic seating and grandstands.*

5.15.4.3 The minimum clear width of aisles shall be sufficient to provide egress capacity in accordance with 5.15.1 but shall be not less than the following:

- 1220 mm (48 in.) for stairs having seating on each side, or 915 mm (36 in.) where the aisle does not serve more than 50 seats
- (2) 915 mm (36 in.) for stairs having seating on only one side
- (3) 585 mm (23 in.) between a handrail and seating or a guardrail where the aisle is subdivided by a handrail
- (4) 1065 mm (42 in.) for level or ramped aisles having seating on both sides, or 915 mm (36 in.) where the aisle does not serve more than 50 seats
- (5) 915 mm (36 in.) for level or ramped aisles having seating on only one side
- (6) 585 mm (23 in.) between a handrail or guardrail and seating where the aisle does not serve more than five rows on one side

5.15.4.4* Aisle Stairs and Ramps. Aisles that have a gradient steeper than 1 in 20 but not steeper than 1 in 8 shall consist of a ramp. Aisles that have a gradient steeper than 1 in 8 shall consist of an aisle stair. The exception to 5.15.4.8 shall not apply.

Exception: Aisles in folding and telescopic seating shall be permitted to be by stepped aisles.

5.15.4.5 Aisle Stair Treads.

5.15.4.5.1 There shall be no variation exceeding 4.8 mm $(\frac{3}{16} \text{ in.})$ in the depth of adjacent treads.

5.15.4.5.2* Treads shall be a minimum of 280 mm (11 in.).

5.15.4.5.3 All treads shall extend the full width of the aisle.

5.15.4.6 Aisle Stair Risers.

5.15.4.6.1 Riser heights shall be a minimum of 100 mm (4 in.).

Exception: The riser height of aisle stairs in folding and telescopic seating shall be permitted to be not less than 90 mm $(3^{1/2} in.)$ and not greater than 280 mm (11 in.).

5.15.4.6.2 Riser heights shall not exceed 205 mm (8 in.).

Exception No. 1: Where the gradient of an aisle is steeper than 205 mm (8 in.) in rise in 280 mm (11 in.) of run (to maintain necessary sight lines in the adjoining seating area), the riser height shall be permitted to exceed 205 mm (8 in.) but shall not exceed 230 mm (9 in.).

Exception No. 2: The riser height of aisle stairs in folding and telescopic seating shall be permitted to be not less than 90 mm ($3\frac{1}{2}$ in.) and not greater than 280 mm (11 in.).

5.15.4.6.3 Riser heights shall be designed to be uniform in each aisle, and the construction-caused nonuniformities shall not exceed 4.8 mm ($\frac{3}{16}$ in.) between adjacent risers.

Exception: Riser height shall be permitted to be nonuniform only for the purpose of accommodating necessary changes in gradient to maintain necessary sight lines within a seating area and shall be permitted to exceed 4.8 mm ($^{3}/_{16}$ in.) in any flight. Where nonuniformities exceed 4.8 mm ($^{3}/_{16}$ in.) 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.

5.15.4.7* Aisle Handrails.

5.15.4.7.1 Ramped aisles that have a gradient exceeding 1 in 12 and aisle stairs shall be provided with handrails at one side or along the centerline in accordance with 5.2.2.4.5.1, 5.2.2.4.5.2, and 5.2.2.4.5.3.

5.15.4.7.2 Where there is seating on both sides of the aisle, the handrails required by 5.15.4.7.1 shall be discontinuous with gaps or breaks at intervals not exceeding five rows to facilitate access to seating and to permit crossing from one side of the aisle to the other. These gaps or breaks shall have a clear width of not less than 560 mm (22 in.) and not greater than 915 mm (36 in.) measured horizontally, and the handrail shall have rounded terminations or bends. Where handrails are provided in the middle of aisle stairs, there shall be an additional intermediate rail located approximately 305 mm (12 in.) below the main handrail.

Exception No. 1: Handrails shall not be required for ramped aisles that have a gradient not steeper than 1 in 8 and have seating on both sides.

Exception No. 2: The requirement for a handrail shall be permitted to be satisfied by the use of a guard providing a rail that complies with the graspability requirements for handrails and is located at a consistent height between 865 mm (34 in.) and 1065 mm (42 in.), measured vertically from the top of the rail to the leading edge (nosing) of stair treads or to the adjacent walking surface in the case of a ramp.

5.15.4.8* Aisle Marking. A contrasting marking stripe shall be provided on each tread at the nosing or leading edge such that the location of such tread is readily apparent, particularly when viewed in descent. Such stripes shall be not less than 25 mm (1 in.) wide and shall not exceed 51 mm (2 in.) in width.

Exception: 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.

5.15.5* Aisle Accessways Serving Seating at Tables.

5.15.5.1* The minimum required clear width of an aisle accessway shall be 305 mm (12 in.) where measured in accordance with 5.15.5.2 and increased as a function of length in accordance with 5.15.5.3.

Exception: Where used by not more than four persons, there shall be no minimum clear width requirement for the portion of aisle accessway having a length not exceeding 1830 mm (72 in.) and located farthest from an aisle.

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

5.15.5.3* The minimum required clear width of an aisle accessway shall be increased beyond the 305-mm (12-in.) requirement by 13 mm (0.5 in.) for each additional 305 mm (12 in.) or fraction thereof beyond 3660 mm (144 in.) of aisle accessway length where measured from the center of the seat farthest from an aisle.

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

5.15.6 Aisles Serving Seating at Tables.

5.15.6.1* Aisles that contain steps or that are ramped, such as the aisles serving dinner theater–style configurations, shall comply with the requirements of 5.15.4.

5.15.6.2* Aisles that serve seating at tables shall be no less than 1120 mm (44 in.) wide where serving an occupant load greater than 50 and 915 mm (36 in.) where serving an occupant load of 50 or fewer.

5.15.6.3* 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 485 mm (19 in.) away from the edge of the table, measured perpendicularly to the edge of the table.

5.15.7 Approval of Layouts. 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 this section and shall constitute the only acceptable arrangement until revised or additional plans are submitted and approved.

Exception: Temporary deviations from the specifications of the approved plans shall be permitted, provided the occupant load is not increased and the intent of this section is maintained.

5.15.8 Guards and Railings.

5.15.8.1* Sightline-Constrained Rail Heights. Unless subject to the requirements of 5.15.8.2, a fascia or railing system that complies with the guard requirements of 5.2.2.4 and has a height not less than 660 mm (26 in.) shall be provided where the floor or footboard elevation is more than 760 mm (30 in.) above the floor or grade below and the fascia or railing system would otherwise interfere with sightlines of immediately adjacent seating.

5.15.8.2 At Foot of Aisles. A fascia or railing system that complies with the guard requirements of 5.2.2.4 shall be provided for the full width of the aisle where the foot of the aisle is more than 760 mm (30 in.) above the floor or grade below. The fascia or railing shall be not less than 915 mm (36 in.) high and shall provide not less than 1065 mm (42 in.) measured diagonally between the top of the rail and the nosing of the nearest tread.

5.15.8.3 At Cross Aisles.

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

Exception: Where the backs of seats located at the front of the aisle project 610 mm (24 in.) or more above the adjacent floor of the aisle.

5.15.8.3.2 Where cross aisles are more than 760 mm (30 in.) above the floor or grade below, guards shall be provided in accordance with 5.2.2.4.

5.15.8.4 At Side and Back of Seating Areas. Guards that comply with the guard requirements of 5.2.2.4 shall be provided with a height not less than 1065 mm (42 in.) above the aisle, aisle accessway, or footboard where the floor elevation is more than 760 mm (30 in.) above the floor or grade to the side or back of seating.

5.15.8.5 Below Seating. Openings between footboards and seat boards shall be provided with intermediate construction

so that a 100-mm (4-in.) diameter sphere cannot pass through the opening.

5.15.8.6 Locations Not Requiring Guards.

5.15.8.6.1 Guards shall not be required on the audience side of stages, of raised platforms, and of other raised floor areas such as runways, ramps, and side stages used for entertainment or presentations.

5.15.8.6.2 Permanent guards shall not be required at vertical openings in the performance area of stages.

5.15.8.6.3 Guards shall not be required 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.

5.15.9 Life Safety Evaluation.

5.15.9.1* Where a life safety evaluation is required by other provisions of the *Code*, it shall be done by persons acceptable to the authority having jurisdiction. The life safety evaluation shall include a written assessment of safety measures for conditions listed in 5.15.9.2. The life safety evaluation shall be approved annually by the authority having jurisdiction and shall be updated for special or unusual conditions.

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

- (1) Nature of the events and the participants and attendees
- (2) Access and egress movement, including crowd density problems
- (3) Medical emergencies
- (4) Fire hazards
- (5) Permanent and temporary structural systems
- (6) Severe weather conditions
- (7) Earthquakes
- (8) Civil or other disturbances
- (9) Hazardous materials incidents within and near the facility
- (10) Relationships among facility management, event participants, emergency response agencies, and others having a role in the events accommodated in the facility

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

5.15.10* Smoke-Protected Assembly Seating.

5.15.10.1 Fire Protection Requirements. To be considered smoke protected, an assembly seating facility shall comply with (A) and (B).

(A)* All enclosed areas with walls and ceilings in buildings or structures containing smoke-protected assembly seating shall be protected with an approved, automatic sprinkler system.

Exception No. 1: The floor area used for the contest, performance, or entertainment, provided the roof construction is more than 15 m (50 ft) above the floor level and use is restricted to low fire hazard uses.

Exception No. 2: Sprinklers shall be permitted to be omitted over the floor area used for contest, performance, or entertainment and over the seating areas, if an approved engineering analysis substantiates the ineffectiveness of the sprinkler protection due to building height and combustible loading.

(B) All means of egress serving a smoke-protected assembly seating area shall be provided with smoke-actuated ventilation facilities or natural ventilation designed to maintain the level of smoke not less than 1830 mm (72 in.) above the floor of the means of egress.

5.15.10.2 Life Safety Evaluation. For facilities to utilize the provisions of smoke-protected assembly seating, a life safety evaluation shall be done in accordance with 5.15.9.

5.15.10.3 Using Table 5.15.10.3, the number of seats specified shall be within a single assembly space, and interpolation shall be permitted between the specific values shown. The minimum clear widths shown shall be modified in accordance with all of the following:

(1) If risers exceed 178 mm in height, multiply the stair width in the table by factor *A*, where

$$A = 1 + \frac{\text{riser height} - 178}{125}$$

(2) If risers exceed 7 in. in height, multiply the stair width in the table by factor *A*, where

$$A = 1 + \frac{\text{riser height} - 7}{5}$$

- (3) Stairs not having a handrail within a 760-mm (30-in.) horizontal distance shall be 25 percent wider than otherwise calculated; that is, multiply by factor *B*, which equals 1.25.
- (4) Ramps steeper than a 1 in 10 slope where used in ascent shall have their width increased by 10 percent; that is, multiply by factor *C*, which equals 1.10.

	Clear Width per Seat Served			
	Stairs		Passageways, Ramps, and Doorways	
Seats	mm	in.	mm	in.
2,000 5,000	7.6 AB 5.1 AB	0.300 AB 0.200 AB 0.130 AB	$5.6\ C$ $3.8\ C$ $2\ 5\ C$	0.220 C 0.150 C 0.100 C
15,000 20,000 25,000 or more	2.4 AB 1.9 AB 1.5 AB	0.096 AB 0.076 AB 0.060 AB	1.8 C 1.4 C 1.1 C	$\begin{array}{c} 0.100\ C\\ 0.070\ C\\ 0.056\ C\\ 0.044\ C\end{array}$

5.15.10.4 With smoke-protected assembly seating for rows of seats served by aisles or doorways at both ends, there shall be not more than 100 seats per row and the minimum clear width of 305 mm (12 in.) for aisle accessways shall be increased by 7.6 mm (0.3 in.) for every additional seat beyond the number stipulated in Table 5.15.10.4, but the minimum clear width shall not be required to exceed 560 mm (22 in.).

Table 5.15.10.4	Smoke-Protected Assembly	y Seating
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	Number of Seats per Row Permitted to Have a Minimum 305 mm (12 in.) Clear Width Aisle Accessway		
Total Number of Seats in the Space	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	

5.15.10.5 With smoke-protected assembly seating for rows of seats served by an aisle or doorway at one end only, the aisle accessway minimum clear width of 305 mm (12 in.) shall be increased by 15 mm (0.6 in.) for every additional seat beyond the number stipulated in Table 5.15.10.4, but the minimum clear width shall not be required to exceed 560 mm (22 in.).

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

5.15.10.7 Aisle Termination. For smoke-protected assembly seating, the dead ends in aisle stairs shall not exceed a distance of 21 rows.

Exception: A longer dead-end aisle shall be permitted for smokeprotected assembly seating where seats served by the dead-end aisle are not more than 40 seats from another aisle, measured along a row of seats having an aisle accessway with a minimum clear width of 305 mm (12 in.) plus 7.6 mm (0.3 in.) for each additional seat above seven in the row.

5.15.10.8 For smoke-protected assembly seating, the travel distance from each seat to the nearest entrance to an egress vomitory portal or egress concourse shall not exceed 122 m (400 ft). The travel distance from the entrance to vomitory portal or from egress concourse to an approved egress stair, ramp, or walk at the building exterior shall not exceed 60 m (200 ft).

Exception: In outdoor assembly seating facilities of noncombustible or limited-combustible construction, where all portions of the means of egress are essentially open to the outside, the distance shall not be limited.

5.15.11 Grandstands.

5.15.11.1 General. Grandstands shall comply with the provisions of this chapter as modified by 5.15.11.

5.15.11.2 Seating.

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

5.15.11.2.2 The depth of footboards and seat boards in grandstands shall be not less than 230 mm (9 in.). Where the

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

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

5.15.11.2.4 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.

5.15.11.3 Guards and Railings.

5.15.11.3.1 Railings or guards not less than 1065 mm (42 in.) above the aisle surface or footrest or not less than 915 mm (36 in.) 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 1220 mm (48 in.) above the floor or ground.

Exception: This requirement shall not apply where an adjacent wall or fence affords equivalent safeguard.

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

Exception: In grandstands, or where the front row of seats includes backrests, the rails shall be not less than 660 mm (26 in.) high.

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

Exception: Where the backs of the seats in front of the cross aisle project 610 mm (24 in.) or more above the surface of the cross aisle, the rail shall not be required.

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

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

5.15.12 Folding and Telescopic Seating.

5.15.12.1 General. Folding and telescopic seating shall comply with the provisions of this chapter as modified by 5.15.12.

5.15.12.2 Seating.

5.15.12.2.1 The horizontal distance of seats, measured back to back, shall be not less than 560 mm (22 in.) for seats without backs. There shall be a space of not less than 305 mm (12 in.) between the back of each seat and the front of each seat immediately behind it. If seats are of the chair type, the 305-mm (12-in.) 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.

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

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

5.15.12.3 Guards and Railings.

5.15.12.3.1 Railings or guards not less than 1065 mm (42 in.) above the aisle surface or footrest or not less than 915 mm (36 in.) 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 1220 mm (48 in.) above the floor or ground.

Exception: This requirement shall not apply where an adjacent wall or fence affords equivalent safeguard.

5.15.12.3.2 Where the front footrest of folding or telescopic seating is more than 610 mm (24 in.) above the floor, railings or guards not less than 840 mm (33 in.) above such footrests shall be provided.

Exception: Where the front row of seats includes backrests, the rails shall be not less than 660 mm (26 in.) high.

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

Exception: Where the backs of the seats in front of the cross aisle project 610 mm (24 in.) or more above the surface of the cross aisle, the rail shall not be required.

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

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

Chapter 6 Means of Escape

6.1* General.

6.1.1 The provisions of this chapter shall apply to the following:

- (1) One- and two-family dwellings (see Section 6.2)
- (2) Dwelling units in apartment buildings (see Section 6.3)
- (3) Guest rooms or guest suites in hotels and dormitories (see Section 6.4)
- (4) Lodging and rooming houses (see Section 6.5)
- (5) Small board and care facilities (see Section 6.6)
- (6) Group day-care homes

6.1.2 The provisions of Chapter 5 shall not be applicable to means of escape unless specifically referenced in this chapter.

6.1.3 Means of egress from dwelling units to the outside and from guest rooms or guest suites to the outside shall be in accordance with Chapter 5.

6.2 One- and Two-Family Dwellings.

6.2.1 Number and Types of Means of Escape.

6.2.1.1 Number of Means of Escape. In any dwelling or dwelling unit of two rooms or more, every sleeping room and every

living area shall have at least one primary means of escape and one secondary means of escape.

Exception: A secondary means of escape shall not be required under either of the following conditions:

- (1) Where the bedroom or living area has a door leading directly to the outside of the building at or to grade level
- (2) Where the dwelling unit is protected throughout by an approved, automatic sprinkler system

6.2.1.2 Primary Means of Escape. The primary means of escape shall be a door, stairway, or ramp that provides a means of unobstructed travel to the outside of the dwelling unit at street or ground level.

6.2.1.3* Secondary Means of Escape. The secondary means of escape shall be one of the following:

- (1) A door, stairway, passage, or hall that provides a way of unobstructed travel to the outside of the dwelling at street or ground level and that is independent of and remote from the primary means of escape.
- (2) A passage through an adjacent nonlockable space, independent of and remote from the primary means of escape, to any approved means of escape.
- (3)*An outside window or door that is operable from the inside without the use of tools, keys, or special effort and that provides a clear opening of not less than 0.53 m^2 (5.7 ft^2) with the width not less than 510 mm (20 in.) and the height not less than 610 mm (24 in.). The bottom of the opening shall be not more than 1120 mm (44 in.) above the floor. Such means of escape shall be acceptable under any of the following conditions:
 - (a) The window is within 6100 mm (240 in.) of grade.
 - (b) The window is directly accessible to fire department rescue apparatus as approved by the authority having jurisdiction.
 - (c) The window or door opens onto an exterior balcony.
 - (d) The window has a sill height below the adjacent ground level and is provided with a window well meeting the following criteria:
 - i. The window well shall have horizontal dimensions that allow the window to be fully opened.
 - ii. The window well shall have an accessible net clear opening of not less than 0.82 m^2 (9 ft²) with a length and width of not less than 915 mm (36 in.).
 - iii. A window well with a vertical depth of more than 1120 mm (44 in.) shall be equipped with an approved, permanently affixed ladder or steps where the ladder or steps do not encroach more than 150 mm (6 in.) in the required dimensions of the window well and are not obstructed by the window.

6.2.1.4 Two Primary Means of Escape. Every story exceeding 185 m^2 (2000 ft²) in area or with a travel distance to the primary means of escape exceeding 23 m (75 ft) shall be provided with two primary means of escape that are remotely located from each other.

Exception: Buildings protected throughout by an approved, supervised automatic sprinkler system.

6.2.2 Arrangement of Means of Escape. No required path of travel in a means of escape from any room to the outside shall be through another room or apartment not under the immediate control of the occupant of the first room or through a bathroom or other space subject to locking.

6.2.3 Doors.

6.2.3.1 No door in the path of travel of a means of escape shall be less than 710 mm (28 in.) wide.

Exception: Bathroom doors shall be not less than 610 mm (24 in.) wide.

6.2.3.2 Doors shall be not less than 1980 mm (78 in.) in nominal height.

6.2.3.3 Every closet door latch shall be such that children can open the door from inside the closet.

6.2.3.4 Every bathroom door shall be designed to allow opening from the outside during an emergency when locked.

6.2.3.5* No door in any means of escape shall be locked against egress when the building is occupied. All locking devices that impede or prohibit egress or that cannot be easily disengaged shall be prohibited.

6.2.4 Stairs, Landings, Ramps, Balconies, or Porches.

6.2.4.1 Stairs, ramps, guards, and handrails shall be in accordance with 5.2.2 for stairs and 5.2.5 for ramps.

Exception No. 1: The provisions of 5.2.2.5, 5.2.5.5, and 5.7.3 shall not apply.

Exception No. 2: If serving as a secondary means of escape, stairs that comply with the width, riser height, tread depth, and handrail requirements of Table 7.2.24(E), and ramps with slopes not steeper than 1 in 6 shall be permitted.

6.2.4.2 The clear width of stairs, landings, ramps, balconies, and porches shall be not less than 915 mm (36 in.), measured in accordance with 5.3.2.

6.2.4.3 Spiral stairs and winders in accordance with 5.2.2 shall be permitted within a single dwelling unit.

6.2.4.4 No sleeping rooms or living rooms shall be accessible by only a ladder, stair ladder, alternating tread device, folding stairs, or through a trap door.

6.2.5 Hallways. The minimum width of hallways shall be 915 mm (36 in.), measured in accordance with 5.3.2. The minimum height shall be not less than 2135 mm (84 in.) nominal height, with projections from the ceiling providing not less than 2030 mm (80 in.) nominal height.

6.3 Dwelling Units in Apartment Buildings.

6.3.1 Means of escape within the apartment dwelling unit shall comply with the provisions of Section 6.2 for one- and two-family dwellings.

6.3.2 Within any individual apartment dwelling unit, stairs more than one story above or below the entrance floor level of the apartment dwelling unit shall not be permitted.

6.4 Guest Rooms or Guest Suites in Hotels and Dormitories. Means of escape within the guest room or guest suite shall comply with the provisions of Section 6.2 for one- and two-family dwellings. For the purpose of application of the requirements of Section 6.2, guest room and guest suite shall be synonymous with dwelling or living unit.

6.5 Lodging and Rooming Houses.

6.5.1 Number and Types of Means of Escape.

6.5.1.1 Every sleeping room and living area shall have access to a primary means of escape that complies with Section 6.2

for one- and two-family dwellings and is located to provide a safe path of travel to the outside. Where the sleeping room is above or below the level of exit discharge, the primary means of escape shall be an interior stair in accordance with 6.5.2, an exterior stair in accordance with 6.5.3, a horizontal exit in accordance with 5.2.4, or an existing fire escape stair in accordance with 7.2.24.

6.5.1.2 In addition to the primary route, each sleeping room and living area shall have a second means of escape in accordance with 6.2.1.3.

Exception: If the sleeping room or living area has a door leading directly outside the building with access to grade or to a stairway that meets the requirements for exterior stairs, that escape shall be considered as meeting all of the escape requirements for that sleeping room or living area.

6.5.1.3 Every story exceeding $185 \text{ m}^2 (2000 \text{ ft}^2)$ in area or with travel distance to the primary means of escape exceeding 23 m (75 ft) shall be provided with two primary means of escape that are remotely located from each other.

Exception: Buildings protected throughout by an approved, supervised automatic sprinkler system.

6.5.2 Interior stairways shall be enclosed by ½-hour fire barriers with all openings protected with smoke-actuated automatic-closing or self-closing doors that have a fire protection rating comparable to that required for the enclosure. The stairway shall comply with 5.2.2.5.3.

Exception No. 1: Where an interior stair connects the street floor with the story next above or below only, but not both, the interior stair shall be required to be enclosed only on the street floor.

Exception No. 2: In buildings that are three or fewer stories in height and are protected throughout by an approved, supervised automatic sprinkler system, stairways shall be permitted to be unprotected. However, in such cases, there shall still remain a primary means of escape from each sleeping area that does not require occupants to pass through a portion of a lower floor, unless that route is separated from all spaces on that floor by construction having a ½-hour fire resistance rating.

6.5.3 Exterior stairs shall be protected against blockage caused by fire that would simultaneously expose both the interior and exterior means of escape. This shall be permitted to be accomplished through separation by physical distance, arrangement of the stairs, protection of the openings exposing the stairs, or other means acceptable to the authority having jurisdiction.

6.5.4 No door or path of travel in a means of escape shall be less than 710 mm (28 in.) wide.

Exception: Bathroom doors shall be not less than 610 mm (24 in.) wide.

6.5.5 Every closet door latch shall be such that it can be readily opened from the inside in case of emergency.

6.5.6 Every bathroom door shall be designed to allow it to be opened from the outside during an emergency when locked.

6.5.7 Winders in accordance with 5.2.2.2.4 shall be permitted.

6.5.8* No door in any means of escape shall be locked against egress when the building is occupied.

Exception: Delayed egress locks that comply with 5.2.1.6.1 shall be permitted, provided that not more than one such device is located in any one escape path.

6.5.9 Doors serving a single dwelling unit shall be permitted to be provided with a lock in accordance with 5.2.1.5.2.

6.5.10 All sleeping rooms shall be separated from escape route corridors by walls and doors that are smoke resistant. There shall be no louvers or operable transoms or other air passages penetrating the wall except properly installed heating and utility installations other than transfer grilles. Transfer grilles shall be prohibited. Doors shall be provided with latches or other mechanisms suitable for keeping the doors closed. No doors shall be arranged to prevent the occupant from closing the door. Doors shall be self-closing or automatic-closing upon detection of smoke.

Exception: Door-closing devices shall not be required in buildings that are protected throughout by an approved, automatic sprinkler system.

6.6 Small Board and Care Facilities.

6.6.1 Number of Means of Escape. Each normally occupied story of the facility shall have at least two remotely located means of escape that do not involve using windows. At least one of these means of escape shall comply with 6.6.2.

Exception No. 1: In prompt evacuation capability facilities, one means of escape shall be permitted to involve windows that comply with 6.6.3(3).

Exception No. 2: A second means of escape from each story shall not be required if the entire building is protected throughout by an approved, automatic sprinkler system and the facility has two means of escape.

6.6.2 Primary Means of Escape. Every sleeping room and living area shall have access to a primary means of escape located to provide a safe path of travel to the outside. Where sleeping rooms or living areas are above or below the level of exit discharge, the primary means of escape shall be an interior stair in accordance with 6.6.4, an exterior stair, a horizontal exit, or an existing fire escape stair.

6.6.3* Secondary Means of Escape from Sleeping Rooms. In addition to the primary route, each sleeping room in small residential board and care homes that are not protected by an approved, automatic sprinkler system shall have a secondary means of escape that consists of one of the following:

- (1) A door, stairway, passage, or hall that provides a path of unobstructed travel to the outside of the dwelling at street or ground level and is independent of and remotely located from the primary means of escape
- (2) A passage through an adjacent nonlockable space, independent of and remotely located from the primary means of escape, to any approved means of escape
- (3) An outside window or door that is operable from the inside without the use of tools, keys, or special effort and provides a clear opening of not less than $0.53 \text{ m}^2 (5.7 \text{ ft}^2)$ with the width not less than 510 mm (20 in.) and the height not less than 610 mm (24 in.). The bottom of the opening shall be not more than 1120 mm (44 in.) above the floor. Such means of escape shall be acceptable under any of the following conditions:
 - (a) The window is within 6100 mm (240 in.) of grade.
 - (b) The window is directly accessible to fire department rescue apparatus, as approved by the authority having jurisdiction.
 - (c) The window or door opens onto an exterior balcony.

Exception: Where a sleeping room has a door leading directly to the outside of the building with access to grade or to a stairway that meets

the requirements of exterior stairs, that means of escape shall be considered as meeting all the escape requirements for the sleeping room.

6.6.4 Interior Stairs Used for Primary Means of Escape. Interior stairs shall be enclosed with ½-hour fire barriers with all openings equipped with smoke-actuated automaticclosing or self-closing doors that have a fire protection rating comparable to that required for the enclosure. Stairs shall comply with 5.2.2.5.3. The entire primary means of escape shall be arranged so that occupants are not required to pass through a portion of a lower story unless that route is separated from all spaces on that story by construction having not less than a ½-hour fire resistance rating. The supporting construction shall be protected to afford the required fire resistance rating of the wall supported in buildings of other than nonrated construction.

Exception No. 1: Stairs that connect a story at street level to only one other story shall be permitted to be open to the story that is not at street level.

Exception No. 2: For prompt and slow evacuation capability facilities in buildings that are three or fewer stories in height and have an approved, automatic sprinkler system using quick-response or residential sprinklers, stair enclosures shall not be required, provided there still remains a primary means of escape from each sleeping area that does not require occupants to pass through a portion of a lower floor, unless that route is separated from all spaces on that floor by construction having a ¹/₂-hour fire resistance rating.

Exception No. 3: In buildings that are two or fewer stories in height and house prompt evacuation capability facilities with not more than eight residents, stair enclosures shall not be required.

6.6.5 Exterior stairs shall be reasonably protected against blockage caused by fire that would simultaneously expose both the interior and the exterior means of escape. This shall be accomplished through separation by physical distance, arrangement of the stairs, protection of the openings exposing the stairs, or other means acceptable to the authority having jurisdiction.

6.6.6 Doors.

6.6.6.1 No door or path of travel to a means of escape shall be less than 810 mm (32 in.) wide.

Exception No. 1: In conversions, 710-mm (28-in.) doors shall be permitted to continue to be used.

Exception No. 2: Bathroom doors shall be not less than 610 mm (24 in.) wide.

6.6.6.2 Every closet door latch shall be readily opened from the inside in case of an emergency.

6.6.6.3 Every bathroom door shall be designed to allow opening from the outside during an emergency when locked.

6.6.6.4 No door in any means of escape shall be locked against egress when the building is occupied.

Exception: Delayed egress locks that comply with 5.2.1.6.1 *shall be permitted on exterior doors.*

6.6.6.5 Door opening forces shall comply with 5.2.1.4.7.

6.6.6.6 Door latch releasing shall comply with 5.2.1.5.5.

6.6.7 Stairs.

6.6.7.1 Stairs shall comply with 5.2.2.

6.6.7.2 Winders that comply with 5.2.2.2.4 shall be permitted.

6.6.8 Means of Escape Corridors.

6.6.8.1* The separation walls of sleeping rooms shall be capable of resisting fire for at least $\frac{1}{2}$ hour, which is considered to be achieved if the partitioning is finished on both sides with lath and plaster or material that provides a 15-minute thermal barrier. Sleeping room doors shall be substantial doors, such as those of 44-mm (1³/₄-in.) thick, solid bonded wood core construction or of other construction of equal or greater stability and fire integrity. Any vision panels shall be fixed fire window assemblies or shall be wired glass not exceeding 0.84 m² (9 ft²) each in area and installed in approved frames.

Exception No. 1: In prompt evacuation capability facilities, all sleeping rooms shall be separated from the escape route by smoke partitions in accordance with 5.13. Door closings shall be regulated by 6.6.8.4. The provisions of 5.13.3.5 shall not apply.

Exception No. 2: This requirement shall not apply to corridor walls and doors that are smoke partitions in accordance with 5.13 and that are protected by approved, automatic sprinklers on both sides of the wall and door. In such instances, there shall be no limitation on the type or size of glass panels. Door closings shall be regulated by 6.6.8.4. The provisions of 5.13.3.5 shall not apply.

Exception No. 3: Sleeping arrangements that are not located in sleeping rooms shall be permitted for staff members, provided alarm audibility in the sleeping area is sufficient to awaken staff who might be sleeping.

6.6.8.2 There shall be no louvers or operable transoms or other air passages penetrating the wall except properly installed heating and utility installations other than transfer grilles. Transfer grilles shall be prohibited.

6.6.8.3 Doors shall be provided with latches or other mechanisms suitable for keeping the doors closed. No doors shall be arranged to prevent the occupant from closing the door.

6.6.8.4 Doors shall be self-closing or automatic-closing in accordance with 5.2.1.8.

Exception: Door-closing devices shall not be required in buildings that are protected throughout by an approved, automatic sprinkler system.

Chapter 7 Alterations, Repairs, or Change of Occupancy in Existing Structures

7.1 Application. Means of egress in existing buildings undergoing alterations, repairs, or change of occupancy shall comply with Chapter 5 as modified by this chapter.

7.2 Exemptions from Chapter 5 Requirements.

7.2.1 Existing Corridor Doors in Large Residential Board and Care Facilities [Exemption to 5.1.1.1.6(D)]. In large residential board and care facility buildings that are protected throughout by an approved, automatic sprinkler system, existing corridor doors in renovations and conversions, from any existing residential or health care occupancy to a residential board and care occupancy, that are nonrated doors that resist the passage of smoke shall be permitted to continue to be used.

7.2.2 Walking Surfaces in the Means of Egress [Exemption from 5.1.3.2, 5.1.3.3, and 5.1.3.4]. Existing walking surfaces shall be exempt from the provisions of 5.1.3.2, 5.1.3.3, and 5.1.3.4 where approved by the authority having jurisdiction.

7.2.3 Egress Capacity Width [Exemption from 5.2.1.2.1]. In determining the width of any existing door installation for purposes of calculating capacity, only the clear width of the doorway when the door is in the full open position shall be measured. Clear width shall be determined in accordance with 5.3.2.

7.2.4 Floor Level at Doors to the Exterior [Exemption to 5.2.1.3]. If approved by the authority having jurisdiction, in existing buildings, where the door discharges to the outside or to an exterior balcony or exterior exit access, the floor level outside the door shall be permitted to be one step lower than the floor level inside, but not more than 205 mm (8 in.) lower. In existing buildings, a door at the top of a stair shall be permitted to open directly at a stair, provided that the door does not swing over the stair and the door serves an area with an occupant load of fewer than 50 persons.

7.2.5 Door Swing at Landings [Exemption to 5.2.1.4.5]. In existing buildings, a door providing access to a stair shall not be required to maintain any minimum unobstructed width during its swing, provided that it meets the requirement that limits projection to not more than 180 mm (7 in.) into the required width of a stair or landing when the door is fully open. Existing landings shall be permitted to have a width less than the width of the door where approved by the authority having jurisdiction.

7.2.6 Panic Hardware and Fire Exit Hardware Mounting Height [Exemption to 5.2.1.7.1(1)]. The positioning of the actuating portion of the panic hardware or fire exit hardware shall be permitted to remain in the range of 760 mm to 1220 mm (30 in. to 48 in.) above the floor.

7.2.7 Self-Closing Devices [Exemption to 5.2.1.8.2(3)]. Existing smoke detectors installed in such a way as to detect smoke on either side of the door opening shall be permitted in lieu of smoke detectors installed in accordance with the requirements for smoke detectors for door release service in *NFPA 72, National Fire Alarm Code,* where approved by the authority having jurisdiction.

7.2.8* Stair Dimensional Criteria [Exemption to 5.2.2.2.1]. Existing stairs shall be permitted to remain in use, provided they meet the requirements for existing stairs shown in Table 7.2.8. Where approved by the authority having jurisdiction, existing stairs shall be permitted to be rebuilt in accordance with the table's dimensional criteria and in accordance with other *Code* requirements in 5.2.2 for stairs.

Table 7.2.8 Existing Stairs

Element	Dimension
Minimum width clear of all obstructions, except projections not more than 90 mm (3½ in.) at or below handrail height on each	1120 mm (44 in.); 915 mm (36 in.) if total occupant load of all stories served by stairways is fewer than 50
side	
Maximum height of risers	205 mm (8 in.)
Minimum tread depth	230 mm (9 in.)
Minimum headroom	2030 cm (80 in.)
Maximum height between landings	3660 mm (144 in.)
Landing	(See 5.2.1.3 and 5.2.2.3.2.)