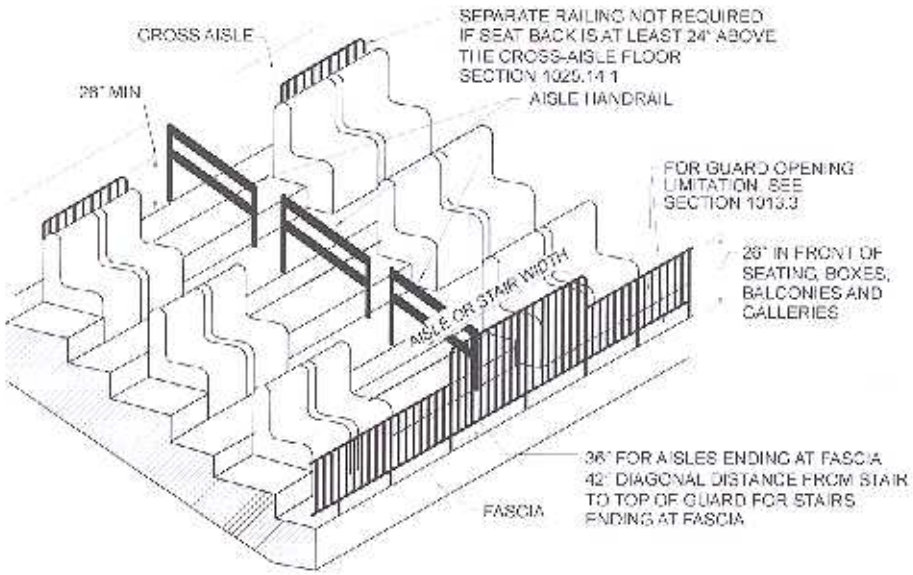


For SI: 1 inch = 25.4 mm.

Figure 1025.14.2
TYPICAL BALCONY GUARDS AT FASCIA

1025.15 Bench seating. Where bench seating is used, the number of persons shall be based on one person for each 18 inches (457 mm) of length of the bench.

❖ The purpose of this section is to specify the length of bench for each occupant for bench and bleacher seating. This is commonly used to calculate the occupant load of bench or bleacher seating for egress purposes and is not intended to limit any individual to an 18-inch (457 mm) area. This is consistent with the fixed seating occupant loads indicated in Section 1004.7.

[B] SECTION 1026
EMERGENCY ESCAPE AND RESCUE

1026.1 General. In addition to the means of egress required by this chapter, provisions shall be made for emergency escape and rescue in Group R and I-1 occupancies. Basements and sleeping rooms below the fourth story above grade plane shall have at least one exterior emergency escape and rescue opening in accordance with this section. Where basements contain one or more sleeping rooms, emergency egress and rescue openings shall be required in each sleeping room, but shall not be required in adjoining areas of the basement. Such openings shall open directly into a public way or to a yard or court that opens to a public way.

Exceptions:

1. In other than Group R-3 occupancies, buildings equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.
2. In other than Group R-3 occupancies, sleeping rooms provided with a door to a fire-resistance-rated corridor having access to two remote exits in opposite directions.
3. The emergency escape and rescue opening is permitted to open onto a balcony within an atrium in accordance with the requirements of Section 404 of the *International Building Code*, provided the balcony provides access to an exit and the dwelling unit or sleeping unit has a means of egress that is not open to the atrium.
4. Basements with a ceiling height of less than 80 inches (2032 mm) shall not be required to have emergency escape and rescue windows.
5. High-rise buildings in accordance with Section 403 of the *International Building Code*.
6. Emergency escape and rescue openings are not required from basements or sleeping rooms that have an exit door or exit access door that opens directly into a public way or to a yard, court or exterior exit balcony that opens to a public way.
7. Basements without habitable spaces and having no more than 200 square feet (18.6 m^2) in floor area shall not be required to have emergency escape windows.

❖ This section requires emergency escape and rescue provisions in groups where occupants may be sleeping during a potential fire buildup, but are capable of self-preservation (Groups R and I-1). A basement and each sleeping room are to be provided with an exterior window or door that meets the minimum size requirements and is operable for emergency escape by methods that are obvious and clearly understood by all users. Sleeping rooms four stories or more above grade are not required to be so equipped, since fire service access at that height, as well as escape through such an opening, may not be practical or reliable. In accordance with Chapter 9, such buildings will also be equipped throughout with an automatic fire suppres-

sion system. The provision for basements is in recognition that such types of spaces typically only have a single path of egress and often have no alternative routes available as other levels do.

It is important to note that this window is an element of escape and does not comprise any part of the means of egress unless it is a door with appropriate egress component characteristics.

Exception 1 assumes that the automatic sprinkler system can control fire buildup and reduce, if not eliminate, the need for an occupant to use an emergency escape window. The exception applies to buildings equipped throughout with an NFPA 13 or 13R sprinkler system (see Sections 903.3.1.1 and 903.3.1.2).

Exception 2 allows another acceptable means of escape; that is, a door directly from the sleeping room to a corridor with exits in opposite directions, to substitute for the escape window.

Exception 3 provides for dwelling and sleeping units that have egress windows to a balcony that is within an atrium. The exception specifies that the dwelling or sleeping unit is to have another means of egress that does not pass through the atrium so that an independent route of egress is provided.

Exceptions 4 and 7 are intended to exempt basements that would not be likely to have sleeping rooms in them from the requirement to have emergency escape and rescue openings.

Exception 5 is in correlation with the exception for emergency escape windows in high-rise buildings addressed in Section 403.4 of the IBC.

The intent of Exception 6 is to permit sleeping rooms with a direct access to an exterior-type environment, such as a street or exit balcony, to not have an emergency escape window. The open atmosphere of the escape route would increase the likelihood that the means of egress be available even with the delayed response time for sleeping residents.

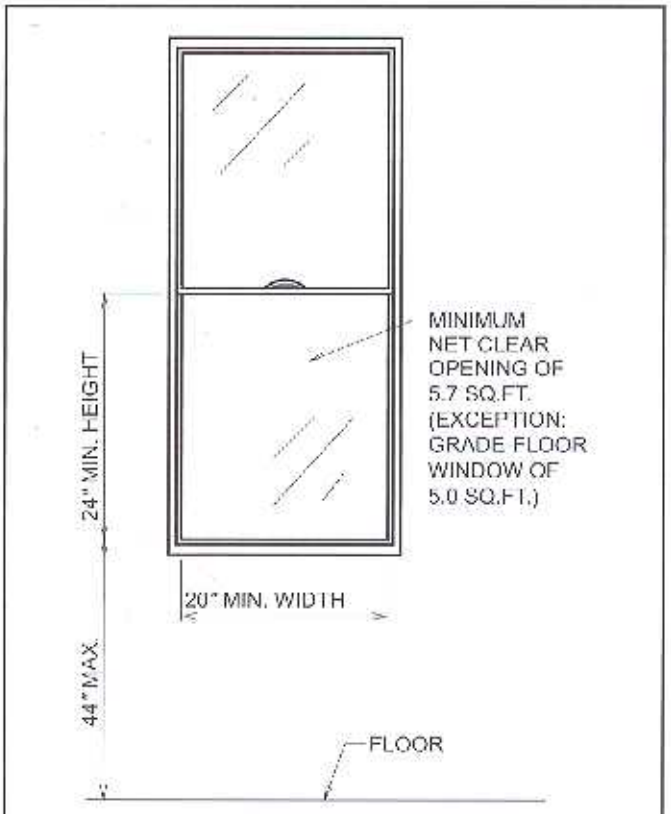
1026.2 Minimum size. Emergency escape and rescue openings shall have a minimum net clear opening of 5.7 square feet (0.53 m^2).

Exception: The minimum net clear opening for emergency escape and rescue grade-floor openings shall be 5 square feet (0.46 m^2).

❖ The dimensional criteria of the opening are intended to permit fire service personnel (in full protective clothing with a breathing apparatus) to enter from a ladder, as well as permit occupants to escape. The net clear opening area and minimum dimensions are intended to provide a clear opening through which an occupant can pass to escape the building or a fire fighter can pass to enter the building for rescue or fire suppression activities. Since the emergency escape windows must be usable to all occupants, including children and guests, the required opening dimensions must be achieved by the normal operation of the window from the inside (e.g., sliding, swinging or lifting the sash). It is impractical to assume that all occupants can operate a window that requires a special sequence of operations to achieve the required opening size. While most occupants are familiar with the normal operation by which to open the window, children and guests are frequently unfamiliar with special procedures necessary to remove the sashes. The time spent in comprehending the special operation unnecessarily delays egress from the bedroom and could lead to panic and further confusion. Thus, windows that achieve the required opening dimensions only through operations such as the removal of sashes or mullions are not permitted. It should be noted that the minimum area cannot be achieved by using both the minimum height and minimum width specified in Section 1026.2.1 (see Figure 1026.2).

1026.2.1 Minimum dimensions. The minimum net clear opening height dimension shall be 24 inches (610 mm). The minimum net clear opening width dimension shall be 20 inches (508 mm). The net clear opening dimensions shall be the result of normal operation of the opening.

❖ Note that the minimum dimensions in this section and the minimum area requirements in Section 1026.2 both apply. Thus, a grade floor window that is only 24 inches (610 mm) in height must be 30 inches (762 mm) wide to meet the 5-square-foot (0.46 m^2) area requirement of Section 1026.2 for grade-floor window (see Figure 1026.2).



For SI: 1 inch = 25.4 mm, 1 square foot = 0.0929 m^2.

Figure 1026.2
EMERGENCY ESCAPE WINDOW

1026.3 Maximum height from floor. Emergency escape and rescue openings shall have the bottom of the clear opening not greater than 44 inches (1118 mm) measured from the floor.

❖ This section limits the height of the bottom of the clear opening to 44 inches (1118 mm) or less such that it can be used effectively as an emergency escape (see Figure 1026.2). For a minimum sill height that may affect the emergency escape window, see Section 1405.12.2 of the IBC.

1026.4 Operational constraints. Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys or tools. Bars, grilles, grates or similar devices are permitted to be placed over emergency escape and rescue openings provided the minimum net clear opening size complies with Section 1026.2 and such devices shall be releasable or removable from the inside without the use of a key, tool or force greater than that which is required for normal operation of the escape and rescue opening. Where such bars, grilles, grates or similar devices are installed in existing buildings, smoke alarms shall be installed in accordance with Sections 907.2.10 regardless of the valuation of the alteration.

❖ If security grilles, decorations or similar devices are installed on escape windows, such items must be readily removable to permit occupant escape without the use of any tools, keys or a force greater than that required for the normal operation of the window.

Where bars, grilles or grates are placed over the emergency escape and rescue opening, it is important that they are easily removable. Thus, the requiremer for ease of operation are the same as required for w. dows.

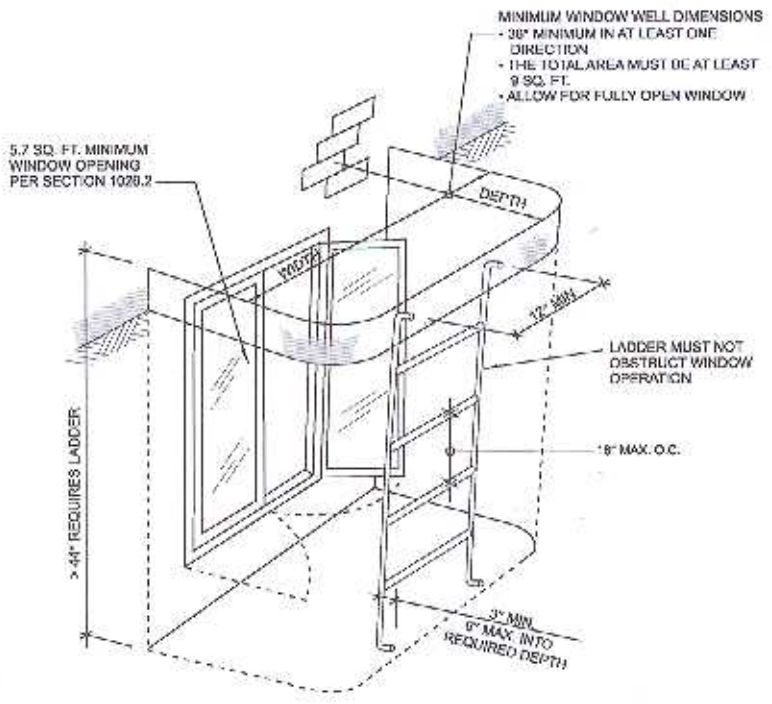
The smoke alarms that are required for existing buildings where such items are installed provides advance warning of a fire for safety purposes.

1026.5 Window wells. An emergency escape and rescue opening with a finished sill height below the adjacent ground level shall be provided with a window well in accordance with Sections 1026.5.1 and 1026.5.2.

❖ Emergency escape and rescue openings that are partially or completely below grade need to have window wells so that they can be used effectively (see Figure 1026.5).

1026.5.1 Minimum size. The minimum horizontal area of the window well shall be 9 square feet (0.84 m²), with a minimum dimension of 36 inches (914 mm). The area of the window well shall allow the emergency escape and rescue opening to be fully opened.

❖ This section specifies the size of the window well that is needed for a rescue person in full protective clothing and breathing apparatus to use the rescue opening. The required 9 square feet (0.84 m²) is the horizontal cross-sectional area of the window well. Thus, if the window well projects away from the plane of the window 3 feet (914 mm), the required dimension in the plane of the window along the wall is also 3 feet (91 mm) (see Figure 1026.5).



For SI: 1 inch = 25.4 mm, 1 square foot = 0.0929 m².

Figure 1026.5
WINDOW WELLS AT EMERGENCY ESCAPE WINDOWS

26.5.2 Ladders or steps. Window wells with a vertical depth of more than 44 inches (1118 mm) shall be equipped with an approved permanently affixed ladder or steps. Ladders or rungs shall have an inside width of at least 12 inches (305 mm), shall project at least 3 inches (76 mm) from the wall and shall be spaced not more than 18 inches (457 mm) on center (o.c.) vertically for the full height of the window well. The ladder or steps shall not encroach into the required dimensions of the window well by more than 6 inches (152 mm). The ladder or steps shall not be obstructed by the emergency escape and rescue opening. Ladders or steps required by this section are exempt from the stairway requirements of Section 1009.

❖ This section specifies that a ladder or steps be provided for ease of getting into and out of window wells that are more than 44 inches (1118 mm) deep.

Usually ladder rungs are embedded in the wall of the window well. The 44-inch (1118 mm) dimension is the depth of the window well, not the distance from the bottom of the window well to grade. Thus, if the floor of a window well is 40 inches (1016 mm) below grade, but the wall of the window well projects above grade by 6 inches (152 mm), steps or a ladder are required since the vertical depth is 46 inches (1168 mm).

It is important that the ladder not obstruct the operation of the emergency escape window (see Figure 1026.5).

SECTION 1027
MEANS OF EGRESS FOR EXISTING BUILDINGS

1027.1 General. Means of egress in existing buildings shall comply with Sections 1003 through 1026, except as amended in Section 1027.

Exception: Means of egress conforming to the requirements of the building code under which they were constructed shall be considered as complying means of egress if, in the opinion of the fire code official, they do not constitute a distinct hazard to life.

❖ The primary concept of this section is to require existing buildings to comply with the specific means of egress requirements for new buildings as modified by this section. Where an item is specifically addressed by Section 1027, the requirements of this section are intended to override the requirements for new buildings in Sections 1003 through 1026.

For example, the guard height requirements in Section 1027.6 supersede the guard height requirement for new buildings in Section 1013.2. In most cases, the requirements for existing buildings in Section 1027 are less stringent than those for new buildings in Sections 1003 through 1026.

The exception in this section applies to most existing buildings. Where a building has been built to meet the requirements of the building code in effect at the time of construction and, in the opinion of the fire code official, the means of egress is not hazardous, the building meets the intent of this section. In this case, none of the specific requirements in Section 1027 would apply.

1027.2 Elevators, escalators and moving walks. Elevators, escalators and moving walks shall not be used as a component of a required means of egress.

Exceptions:

1. Elevators used as an accessible means of egress where allowed by Section 1007.4.
2. Previously approved escalators and moving walks in existing buildings.

❖ This section is the same as Section 1003.7 except Exception 2 is added. Thus, an escalator or moving walk could be used as part of the required means of egress in an existing building if it had been previously approved by the fire code official.

1027.3 Exit sign illumination. Exit signs shall be internally or externally illuminated. The face of an exit sign illuminated from an external source, shall have an intensity of not less than 5 foot-candles (54 lux). Internally illuminated signs shall provide equivalent luminance and be listed for the purpose.

Exception: Approved self-luminous signs that provide evenly illuminated letters shall have a minimum luminance of 0.06 foot-lamberts (0.21 cd/m^2).

❖ This section is the same as Section 1011.2 for new buildings except that Section 1011.2 includes an exception to illumination for tactile signs. The same exception should apply for existing buildings.

1027.4 Power source. Where emergency illumination is required in Section 1027.5, exit signs shall be visible under emergency illumination conditions.

Exception: Approved signs that provide continuous illumination independent of external power sources are not required to be connected to an emergency electrical system.

❖ This section requires that exit signs serving the occupancies listed in Section 1027.5 be illuminated during the use of emergency power for the means of egress.

The comparable section for new buildings is Section 1011. Exit signs for all new building occupancies must be illuminated at all times and have an emergency power source.

1027.5 Illumination emergency power. The power supply for means of egress illumination shall normally be provided by the premises' electrical supply. In the event of power supply failure, illumination shall be automatically provided from an emergency system for the following occupancies where such occupancies require two or more means of egress:

1. Group A having 50 or more occupants.

   Exception: Assembly occupancies used exclusively as a place of worship and having an occupant load of less than 300.

2. Group B buildings three or more stories in height, buildings with 100 or more occupants above or below the level of exit discharge, or buildings with 1,000 or more total occupants.
3. Group E in interior stairs, corridors, windowless areas with student occupancy, shops and laboratories.