

2021

IRC Building Code Overview

Egress Windows, Window Wells, Ladders Grates & Covers

Where are Emergency Escape and Rescue Openings Required? ([R310.1](#))

The IRC Code requires every basement, habitable attic, and every sleeping room to have at least one operable emergency escape and rescue opening. If a room is used as such, it must provide a means of escape.

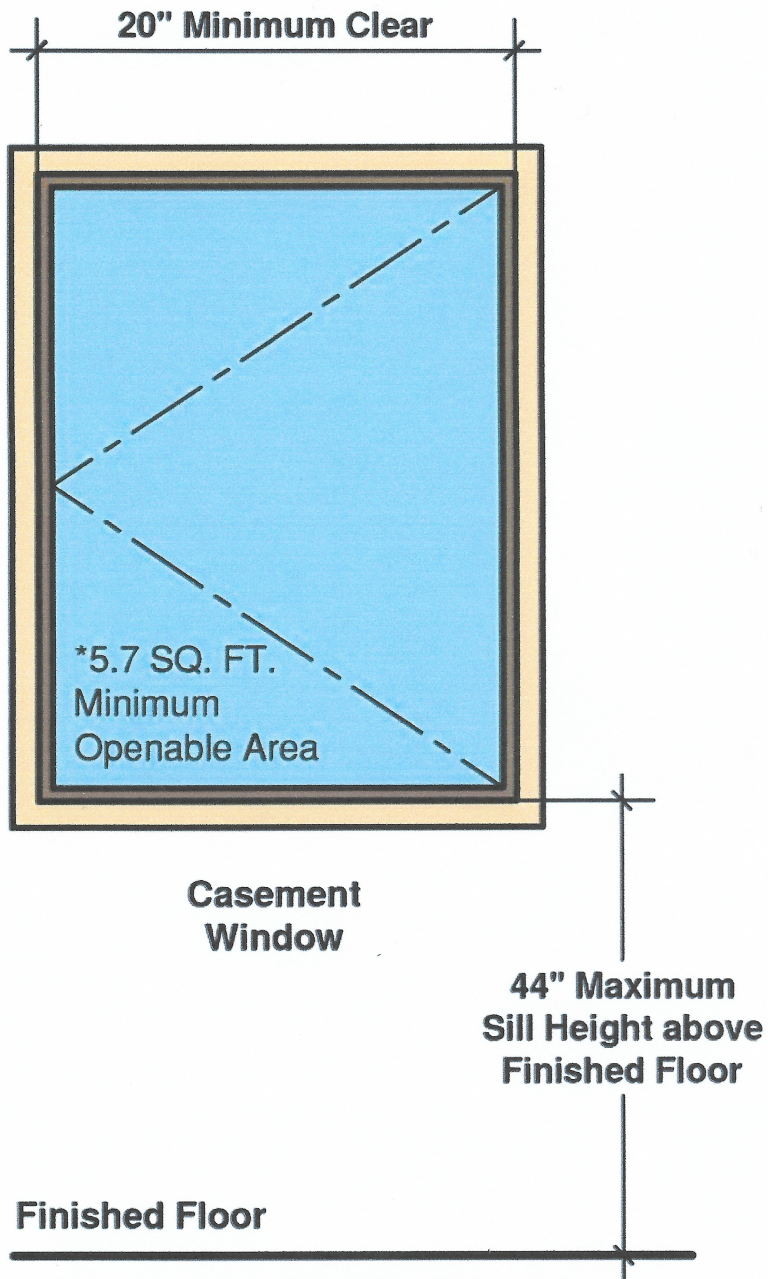
Also note that if basements have multiple sleeping rooms, each sleeping room is individually required to provide a means of escape and rescue. These openings must open directly to the outside such as a public way or yard and need to be operational from the inside of the room without much effort.

What is the Minimum Size Required for Emergency Escape and Rescue Openings? ([R310.2](#))

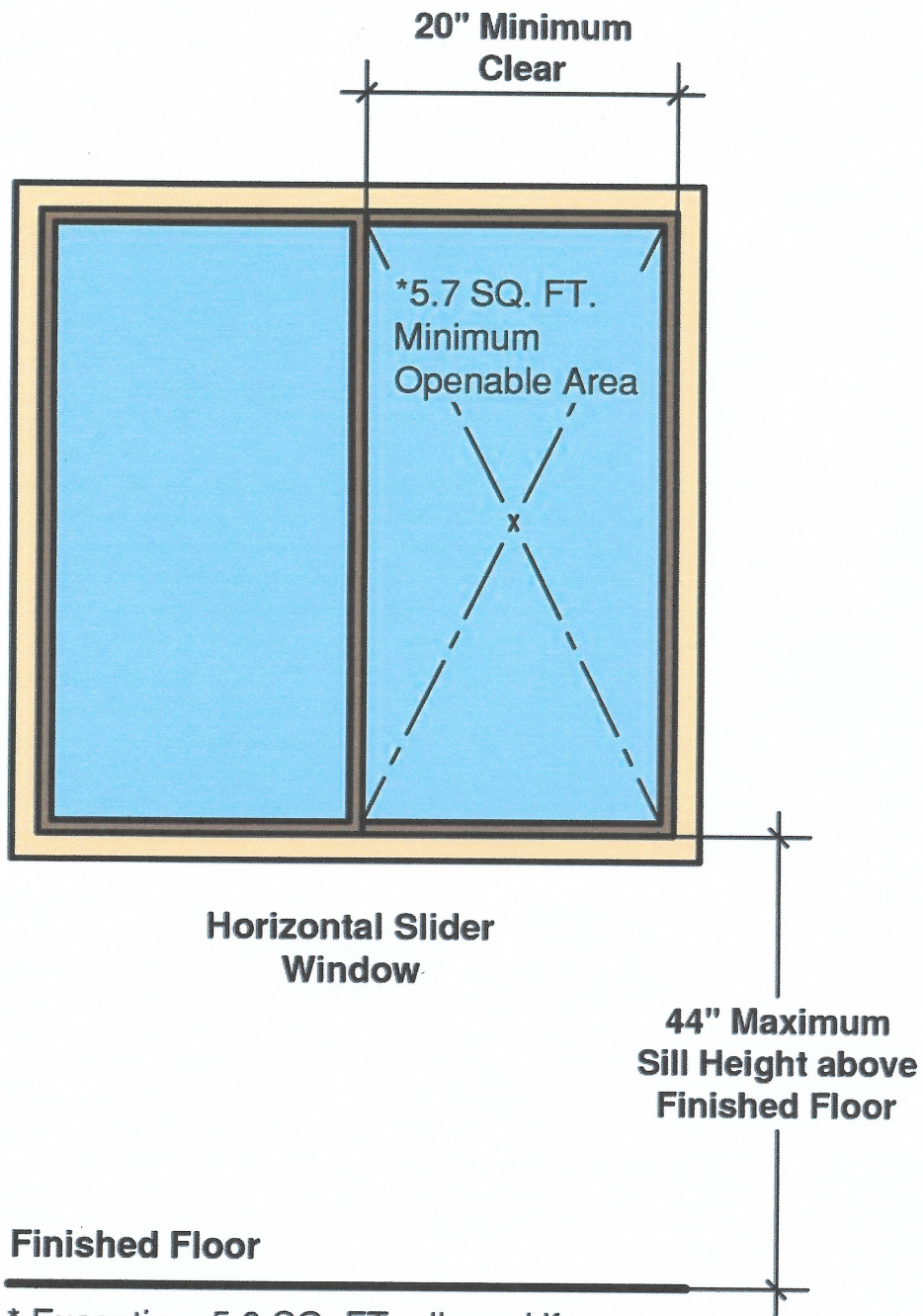
Egress window size and dimensions

- Minimum 5.7 square feet of net clear opening area.
 - Exception: 5.0 square feet allowed if located at grade floor or below grade.
- Minimum 24 inches of net clear height opening.
- Minimum 20 inches of net clear width opening.

The next two pages illustrate these requirements for both casement and slider egress windows.



* Exception: 5.0 SQ. FT. allowed if located at grade floor or below grade.

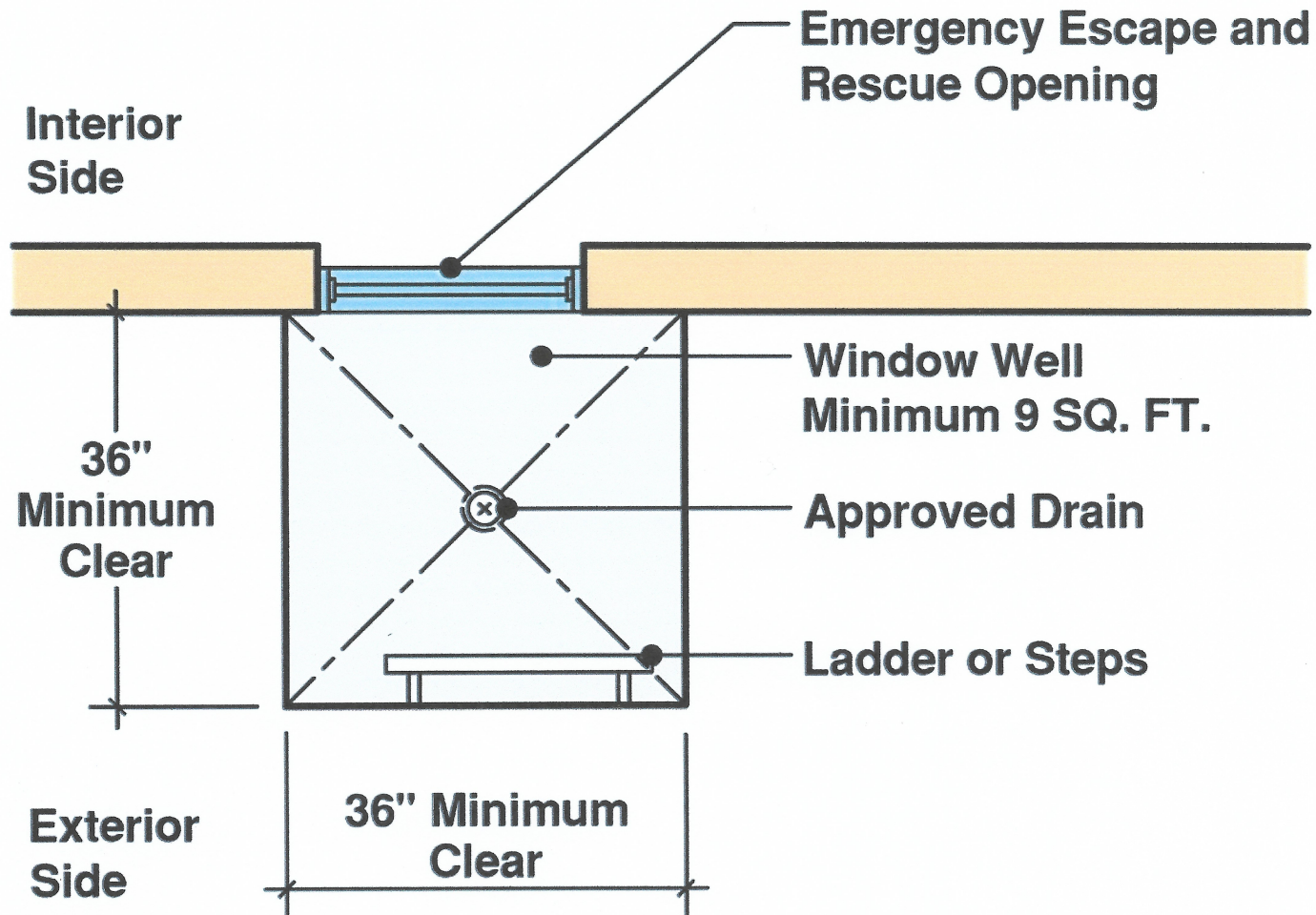


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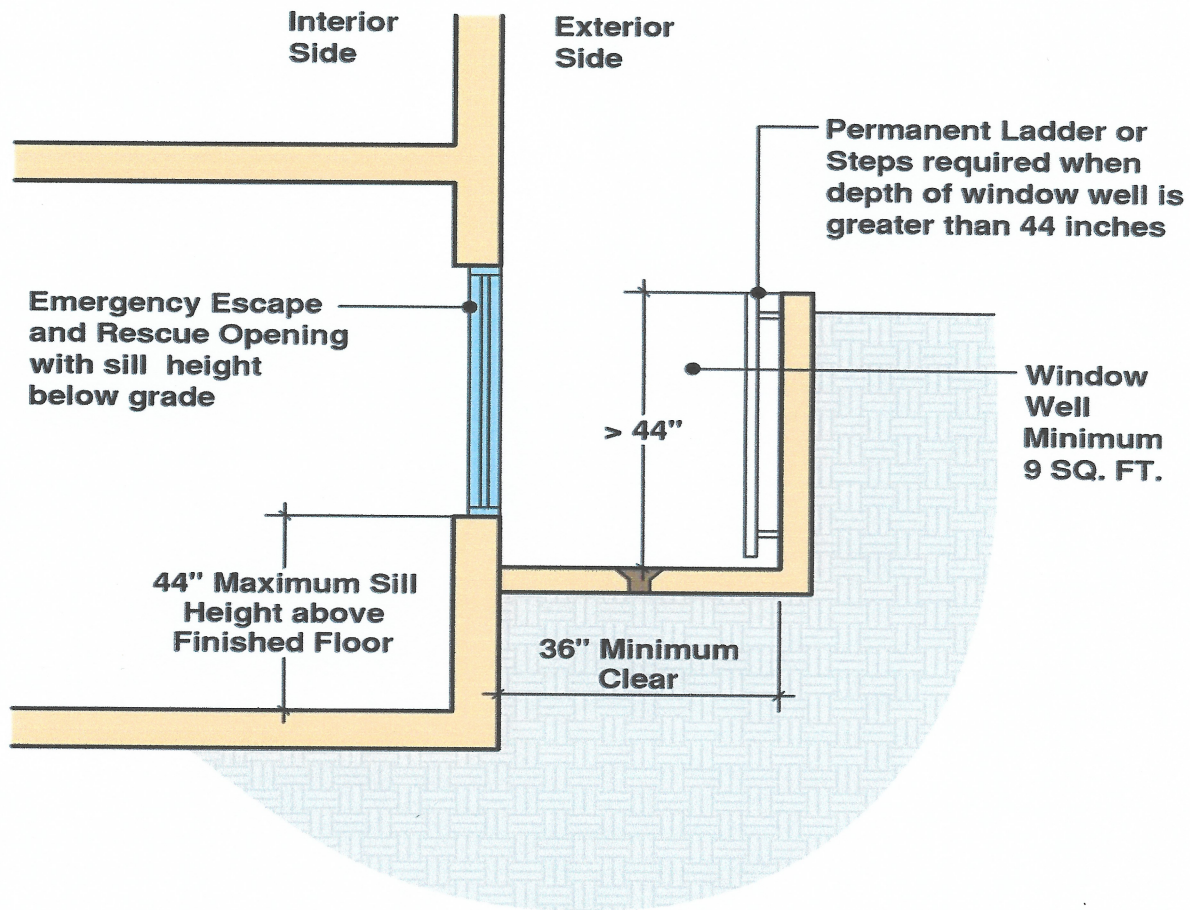
What is the Minimum Size Required for Emergency Escape and Rescue Openings? (R310.2)

Window Well Size & Dimensions

The area of a window well shall not be less than 9.0 square feet with a horizontal projection and width of not less than 36 inches. This is to ensure that there is enough space to allow occupants to escape or for fire fighters to enter.



If the vertical depth of the window well is greater than 44 inches, a permanently affixed ladder or steps are to be provided and must be usable with the egress window fully opened. The ladder or steps are not allowed to encroach more than 6 inches into the required dimensions of the window well.



The inside width dimension of ladder rungs (a horizontal support on a ladder for a person's foot) shall not be less than 12 inches and must project at least 3 inches from the wall. The vertical spacing shall not be more than 18 inches on center throughout the entire height of the window well.

2018 IRC BUILDING CODE
SECTION R310 EMERGENCY ESCAPE AND RESCUE OPENINGS

R310.1 Emergency escape and rescue opening required.

Basements, habitable attics and every sleeping room shall have not less than one operable emergency escape and rescue opening. Where basements contain one or more sleeping rooms, an emergency escape and rescue opening shall be required in each sleeping room. Emergency escape and rescue openings shall open directly into a public way, or to a yard or court that opens to a public way.

Exceptions:

1. Storm shelters and *basements* used only to house mechanical *equipment* not exceeding a total floor Area of 200 square feet (18.58m²).
2. Where the *dwelling* or *townhouse* is equipped with an automatic sprinkler system installed in accordance with Section P2904, sleeping rooms in basements shall not be required to have emergency escape and rescue openings provided the basement has one of the following
 - i. One means of egress complying with Section R311 and one emergency escape and rescue opening.
 - ii. Two means of egress complying with Section R311.

R310.1.1 Operational constraints and opening control devices.

Emergency escape and rescue openings all be operational from the inside of the room without the use of keys, tools or special knowledge. Window opening control devices complying with ASTM F 2090 shall be permitted for use on windows serving as a required emergency escape and rescue opening.

R310.2 Emergency escape and rescue openings.

Emergency escape and rescue openings shall have minimum dimensions as specified in this section.

R310.2.1 Minimum Opening Area.

Emergency and escape rescue openings shall have a net clear opening of not less than 5.7 square feet (0.530 m²). The net clear opening dimensions required by this section shall be obtained by the normal operation of the emergency escape and rescue opening from the inside. The net clear height opening shall be not less than 24 inches (610 mm) and the net clear width shall be not less than 20 inches (508 mm).

Exception: *Grade* floor or below *grade* openings shall have a net clear opening of not less than 5 square feet (0.465 m²)

R310.2.2 Window sill height.

Where a window is provided as the emergency escape and rescue opening, it shall have a sill height of not more than 44 inches (1118 mm) above the floor; where the sill height is below grade, it shall be provided with a window well in accordance with Section R310.2.3

R310.2.3 Window wells.

The horizontal area of the window well shall be not less than 9 square feet (0.9 m²), with a horizontal projection and width of not less than 36 inches (914 mm). The area of the window well shall allow the emergency escape and rescue opening to be fully opened.

Exception: The ladder or steps required by Section R310.2.3.1 shall be permitted to encroach not more than 6 inches (152 mm) into the required dimensions of the window well.

R310.2.3.1 Ladder and steps.

Window wells with a vertical depth greater than 44 inches (1118 mm) shall be equipped with a permanently affixed ladder or steps usable with the window in the fully open position. Ladders or steps required by this section shall not be required to comply with Sections R311.7 and R311.8, Ladders or rungs shall have an inside width of not less than 12 inches (305 mm), shall project not less than 3 inches (76 mm) from the wall and shall be spaced not more than 18 inches (457 mm) on center vertically for the full height of the window well.

R310.2.3.2 Drainage.

Window wells shall be designed for proper drainage by connecting to the building's foundation drainage system required by Section R405.1 or by an approved alternative method.

Exception: A drainage system for window wells is not required where the foundation is on well-drained soil or sand-gravel mixture soils in accordance with the United Soil Classification System, Group I Soils, as detailed in Table R405.1

R310.2.4 Emergency escape and rescue openings under decks and porches.

Emergency escape and rescue openings shall be permitted to be installed under decks and porches provided that the location of the deck allows the emergency escape and rescue openings to be fully opened and provides a path not less than 35 inches (914 mm) in height to a yard or court.

R310.2.5 Replacement windows.

Replacement windows installed in buildings meeting the scope of this code shall be exempt from the maximum sill height requirements of Section R310.2.2 and the requirements of Section R310.2.1, provided that the replacement window meets the following conditions:

1. The replacement window is the manufacturer's largest standard size window that will fit within the existing window or existing rough opening. The replacement window is of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window.
2. The replacement window is not part of a change of occupancy.

R310.3 Emergency escape and rescue doors.

Where a door is provided as the required emergency escape and rescue opening, it shall be permitted to be a side-hinged door or a slider. Where the opening is below the adjacent ground elevation, it shall be provided with a bulkhead enclosure.

R310.3.1 Minimum door opening size.

The minimum net clear height opening for any door that serves as an emergency and escape rescue opening shall be in accordance with Section R310.2.1.

R310.3.2 Area wells.

Area wells shall have a width of not less than 36 inches (914mm). The area well shall be sized to allow the emergency escape and rescue door to be fully opened.

R310.3.2.1 Ladder and steps.

Area wells with a vertical depth greater than 44 inches (1118 mm) shall be equipped with a permanently affixed ladder or steps usable with the door in the fully open position. Ladders or steps required by this section shall not be required to comply with Section R311.7. Ladders or rungs shall have an inside width of not less than 12 inches (305 mm), shall project not less than 3 inches (76 mm) from the wall and shall be spaced not more than 18 inches (457 mm) on center vertically for the full height of the exterior stairwell.

R310.3.2.2 Drainage.

Bulkhead enclosures shall be designed for proper drainage by connecting to the building's foundation drainage system required by Section R405.1 or by an approved alternative method.

Exception: A drainage system for bulkhead enclosures is not required where the foundation is on well-drained soil or sand-gravel mixture soils in accordance with the United Soil Classification System, Group I Soils, as detailed in Table R405.1.

R310.4 Bars, grills, covers, and screens.

Bars, grilles, covers, screen or similar devices are permitted to be placed over emergency escape and rescue openings, bulkhead enclosures, or window wells that serve such openings, provided that the minimum net clear opening size complies with Sections R310.1.1 to R310.2.3, and such devices shall be releasable or removable from the inside without the use of a key, tool, special knowledge or force greater than that required for the normal operation of the escape and rescue opening.

R310.5 Dwelling additions.

Where dwelling additions occur that contain sleeping rooms, an emergency escape and rescue opening shall be provided in each new sleeping room. Where dwelling additions occur that have basements, an emergency escape and rescue opening shall be provided in the new basement.

Exceptions:

1. An emergency escape and rescue opening is not required in a new basement that contains sleeping room with an emergency escape and rescue opening.
2. An emergency escape and rescue opening is not required in a new basement where there is an emergency escape and rescue opening in an existing basement that is accessible from the new basement.

R310.6 Alterations or repairs of existing basements.

An emergency escape and rescue opening is not required where existing *basements* undergo alterations or repairs.

Exception: New sleeping rooms created in an existing *basement* shall be provided with emergency escape and rescue openings in accordance with Section R310.1.