



## MINNESOTA DEPARTMENT OF LABOR & INDUSTRY

### Department of Labor and Industry Construction Codes and Licensing Division

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The State of Minnesota adopts a set of construction standards known as the Minnesota State Building Codes (MSBC). The MSBC contains safety requirements relating to structure, mechanical, plumbing, energy, electrical, elevators, manufactured buildings and life safety.

The information in this brochure is for general reference for residential construction projects. Contact your municipal building official regarding permits and specific code requirements for residential construction within your community.

#### To confirm if your contractor is licensed in Minnesota contact the:

Department of Labor and Industry  
Residential Building Contractors  
Phone: (651) 284-5069 or 1-800-657-3944  
[www.dli.mn.gov/ccld/LicVerify.asp](http://www.dli.mn.gov/ccld/LicVerify.asp)  
E-mail: [DLI.Contractor@state.mn.us](mailto:DLI.Contractor@state.mn.us)

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05-07

# EMERGENCY ESCAPES

*Guidelines for planning emergency escape windows and window wells*



Thousands of fires occur in residences each year. Many of these fires occur at night when the occupants are asleep. Severe injuries or death can be the result of these fires if the occupants are asleep and unaware the fire is in progress. Death usually results from asphyxiation long before the fire reaches the occupants.

In order to prevent the loss of life, the Minnesota State Building Code requires smoke alarms to be installed in dwellings to alert the occupants of a fire.

The code also has emergency escape and rescue opening requirements for sleeping rooms. Dwelling units are required to have windows or doors that may be used for emergency escape or rescue including basements. 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.



The size of windows and doors required in the code are based on extensive research to determine the proper relationships of height and width of window openings to adequately serve for both rescue and escape.

Emergency escape and rescue openings shall open directly into a public way, or to a yard or court that opens to a public way, so the occupants may escape or be rescued directly from the room to the outside without having to travel through the building itself.

When a fire occurs, time is critical to survival. There may not be enough time to instruct family members and guests about the proper window operation or to perform complex operations to get the window open. The code requires windows and doors used for emergency escape or rescue to be readily openable without any special knowledge or effort. This means that no window sashes may be tilted or removed to obtain the required open area, width or height. Local building officials can be consulted to assist in the evaluation of special types of windows.



When a fire occurs, time is critical to survival. So, the Minnesota State Building Code features emergency escape opening requirements. Sleeping rooms require windows and doors that can be readily opened without any special knowledge or effort. Rescuers need public access to a building and space to enter quickly, possibly wearing extra gear. Everyone should know what a smoke alarm sounds like and practice how to safely escape. An emergency escape plan should include a test of the smoke alarm and a safe place to meet such as a mailbox or sidewalk.

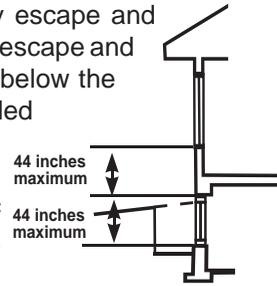
Construction Codes and Licensing



The 2007 Minnesota State Building Code adopts the 2006 International Residential Code (2006 IRC). All "R" code references provided in this brochure pertain to the 2006 IRC.

### Emergency escape and rescue openings

Basements and every sleeping room shall have at least one operable emergency and rescue opening. Such opening shall open directly into a public street, public alley, yard or court. 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. Where emergency escape and rescue openings are provided, they shall have a sill height of not more than 44 inches (1118 mm) above the floor. When a door opening having a threshold below the adjacent ground elevation serves as an emergency escape and rescue opening and is provided with a bulkhead enclosure, the bulkhead enclosure shall comply with R310.3. 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. Emergency escape and rescue openings with a finished sill height below the adjacent ground elevation shall be provided with a window well in accordance with R310.2. Emergency escape and rescue openings shall open directly into a public way, or to a yard or court that opens to a public way (R310.1).



Exception: Basements used only to house mechanical equipment and not exceeding total floor area of 200 square feet (18.58 m<sup>2</sup>).

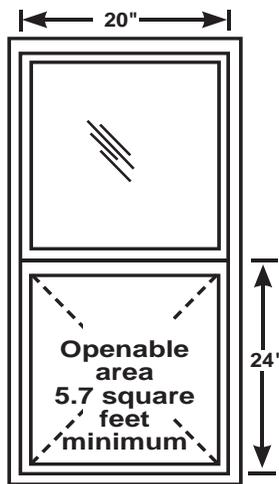
All emergency escape and rescue openings shall have a minimum net clear opening of 5.7 square feet (0.530 m<sup>2</sup>) (R310.1).

Exception: Grade floor openings shall have a minimum net clear opening of 5 square feet (0.465 m<sup>2</sup>).

A window with an opening that meets the minimum width and height will not necessarily meet the minimum required open area. The minimum net clear opening height shall be 24 inches (610 mm) (R310.1.2).

The minimum net clear opening width shall be 20 inches (508 mm) (R310.1.3).

Right: An illustration of an emergency escape and rescue window meeting the minimum requirements [20" x 41.04" / 144" = 5.7 square feet minimum net openable area].



Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys, tools or special knowledge (R319.1.4).

The minimum horizontal area of the window well shall be 9 square feet (0.9 m<sup>2</sup>), with a minimum horizontal projection and width of 36 inches (914 mm). The area of the window well shall allow the emergency escape and rescue opening to be fully opened (R310.2).

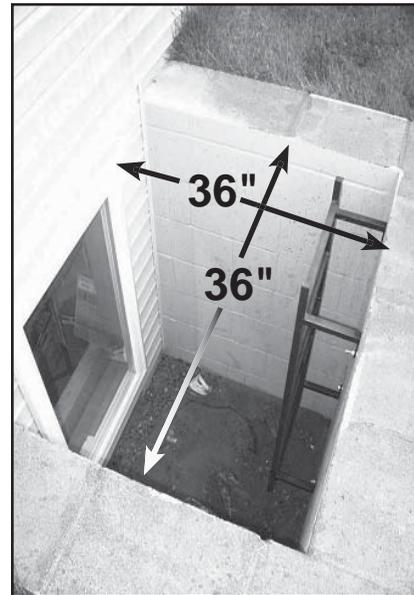
Exception: The ladder or steps required by R310.2.1 shall be permitted to encroach a maximum of 6 inches (152 mm) into the required dimensions of the window well.

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 a fully open position. Ladders or steps required by this section shall not be required to comply with sections R311.5 and R311.6. Ladders or rungs shall have an inside width of at least 12 inches (305 mm) on center vertically for the full height of the window well (R310.2.1).

Bulkhead enclosures shall provide direct access to the basement. The bulkhead enclosure with the door panels in the fully open position shall provide the minimum net clear opening required by R310.1.1. Bulkhead enclosures shall also comply with R311.5.8.2 (R310.3).

Bars, grilles, covers, screens or similar devices are permitted to be placed over emergency escape and rescue openings, bulkhead enclosures or window wells that serve such openings, provided the minimum net clear opening size complies with sections R310.1.1 to R310.1.3, 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 which is required for normal operation of the escape and rescue opening (R310.4).

Emergency escape windows are allowed to be installed under decks and porches provided the location of the deck allows the emergency escape window to be fully opened and provides a path not less than 36 inches (914 mm) in height to a yard or court (R310.5).



Replacement windows installed in buildings meeting the scope of the International Residential Code shall be exempt from the requirements of Sections R310.1, R310.1.1, R310.1.2, and R310.1.3 if 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 frame or existing rough opening. The replacement window shall be permitted to be the same operating style as the existing window or a style that provides for a greater window opening area than the existing window.
2. The rooms or areas are not used for any Minnesota state licensed purpose requiring an egress window; and
3. The window is not required to be replaced pursuant to a locally adopted rental housing, or rental licensing code (R310.1.5).

### A special note regarding guards around windows

The Minnesota State Building Code does **not** specify requirements for guards around window wells to keep persons from falling into them, falls can and do occur. Because of the variations in the size, location and depth of window wells and since a guard could present an impediment to escape or rescue, the code is silent. The potential for falls into a window well should be evaluated by the homeowner and suitable guards or visual barriers provided based on the location, depth and size of the well. Barriers, guards or covers installed to prevent falls must be placed in such a way that does not impede use of the window well for escape and rescue. If covers are used, the effects of snow on the ability to open or remove them in an emergency must also be evaluated.

The ever-increasing concern for security, particularly in residential buildings has created a fairly large demand for security devices such as grilles, bars and steel shutters. Unless properly designed and constructed, these security devices over emergency windows can completely defeat the purpose of the emergency escape and rescue window. The code makes provisions for use of security devices, provided the release mechanism has been approved by the building official and it is operable from the inside without the use of a key or special knowledge.

Fire deaths have been attributed to the inability of the individual to escape from the building because the security bars prevented emergency escape. Security devices should only be installed where absolutely necessary and only with a permit after an evaluation by your local building and fire official.