MINNESOTA DEPARTMENT OF
LABOR & INDUSTRY

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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) 284-5065 or 1-800-657-3944
www.doli.stage.state.mn.us/contractor.html
E-mail: DLI.Contractor@state.mn.us

www.doli.state.mn.us
www.mncodes.org

GI012 6-06

Gopher State One Call
Call at least two full business days before you dig.
Phone: (651) 454-0002 or 1-800-252-1166
www.gopherstateonecall.org

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 (MSBC) requires smoke alarms to be installed in dwellings to alert the occupants of a fire. The code also requires sleeping rooms and habitable space in basement dwelling units to have windows or doors that may be used for emergency escape or rescue.

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.

The size determined as a minimum for escape and rescue is 5.7 square feet of net clear openable area or 5.0 square feet for grade-floor openings (see International Residential Code section R 310 for detailed information). Since windows come all shapes, a minimum-width dimension was needed to accommodate tall-window shapes and a minimum-height dimension for wide window shapes. Studies have determined the minimum net clear width needed is 20 inches and the minimum net clear height dimension of 24 inches. These dimensions are part of the code requirements and assure the window or door will provide for a safe exit or rescue.

Emergency escape windows and doors must be located on the building's exterior and open directly to a yard, street or alley so the occupants may escape or be rescued directly from the room to the outside without having to travel through the building itself.

In a fire, time is critical to survival. You may not have 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 of rescue to be readily openable without any special knowledge or effort. Your local building official will need to be consulted to assist you in evaluating special types of windows.

Emergency escape and rescue openings

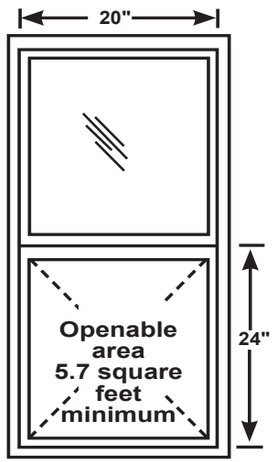
Fire fighters practicing emergency rescue procedures. People come in all sizes and windows come in all shapes. A fire fighter attempting a rescue will likely be wearing full-rescue gear, which may include a breathing apparatus.

Construction Codes and Licensing

Emergency escape and rescue openings are required in basements with habitable space and every sleeping room shall have at least one openable window or exterior door opening for emergency escape and rescue. Escape and rescue window openings with a finished sill height below the adjacent ground elevation shall be provided with a window well in accordance with Section R310.2. A minimum-ceiling height of 48 inches (1210 mm) shall be maintained above the exterior grade from the exterior wall to a public way.

Minimum-opening area

All emergency escape and rescue openings shall have a minimum net clear opening of 5.7 square feet (0.530 m^2). **Exception:** Grade-floor openings shall have a minimum net clear opening of five square feet.



Minimum-opening height

The minimum net clear opening height shall be 24 inches (610 mm).

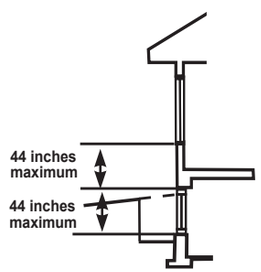
Minimum-opening width

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

Operational constraints

Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys or tools.

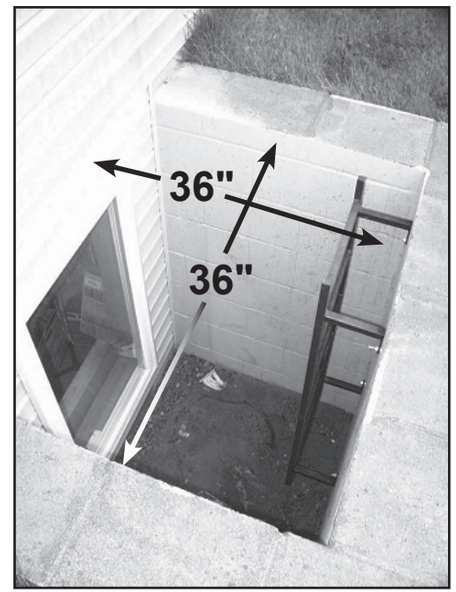
Exception for installations after March 31, 2003: Grade floor openings shall have a minimum net clear opening of five square feet. Grade floor opening is a window or other opening located such that the sill height of the opening is not more than 44 inches above or below the finished ground level adjacent to the opening.



Replacement windows

Replacement windows installed in buildings meeting the scope of the International Residential Code shall be exempt from the requirements of Section R310.1.1, R310.1.2 and R310.1.3 if the replacement window meets the following conditions:

1. The existing height and width net clear opening shall not be reduced by more than two inches (51 mm) in either dimension.
2. The rooms or areas are not used for any Minnesota state licensed purpose.
3. The window is not required pursuant to the Minnesota Fire Code.
4. The sleeping room is not undergoing an addition, remodeling or a change in occupancy.
5. The window is not required to be replaced pursuant to a locally adopted housing, property maintenance or rental licensing code.



Window wells

Window wells required for emergency escape and rescue shall have horizontal dimensions that allow the door or window of the emergency escape and rescue openings to be fully opened. The horizontal dimensions of the window well shall provide a minimum net clear area of nine square feet (0.84m^2) with a minimum horizontal projection and width of 36 inches (914 mm). **Exception:** The ladder or steps required by Section R310.2.1 shall be permitted to encroach a maximum of six inches (152 mm) into the required dimensions of the window well.

Bulkhead enclosures

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 Section R310.1.1. Bulkhead enclosures shall also comply with Section R314.9. 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. Such devices shall be releaseable 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.

Ladder and steps

Window wells with a vertical depth greater than 44 inches (1118 mm) below the adjacent ground level 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 Section R314 and R315. Ladder 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 vertically for the full height of the window well.

Guards

Although the 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.