

EMERGENCY ESCAPE

*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 tragic loss of life the Minnesota State Building Code requires smoke alarm to be installed in dwellings to alert the occupants of a fire. The code also requires that sleeping rooms and habitable space in basement dwelling units have windows or doors, which may be used for emergency escape or rescue if the fire has blocked the normal, escape routes in the home.

Basements pose a special danger since they usually have only one stairway to act as a means of escape. This stairway can be easily blocked by fire making escape from the basement impossible. For this reason the Minnesota Building Code requires that if a portion of the basement is habitable space, at least one emergency egress window or door is provided.

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.

People come in all sizes and windows come in all shapes. A fireman attempting a rescue will likely be wearing full

rescue gear, which may include a breathing apparatus.

The size determined as a minimum for escape and rescue is 5.7 square feet of clear openable area or 5.0 square feet for grade floor openings (see Code 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. 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 exterior of the building and open directly to a yard, street or alley so that 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 on 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. The intent is that windows be of the common double-hung, horizontal sliding or casement type. Your local building inspector will need to be consulted to assist you in evaluating special types of windows.

Special windows need to be evaluated based on the difficulty and knowledge needed for operating or removing the windows.



*City of Burnsville
100 Civic Center Parkway
Burnsville MN 55337-3817*

*Building Inspection Department
(952) 895-4444
Fax: (952) 895-4437*

ESCAPE *continued*

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 9 square feet (0.84m²) with a minimum horizontal projection and width of 36 inches (914 mm).

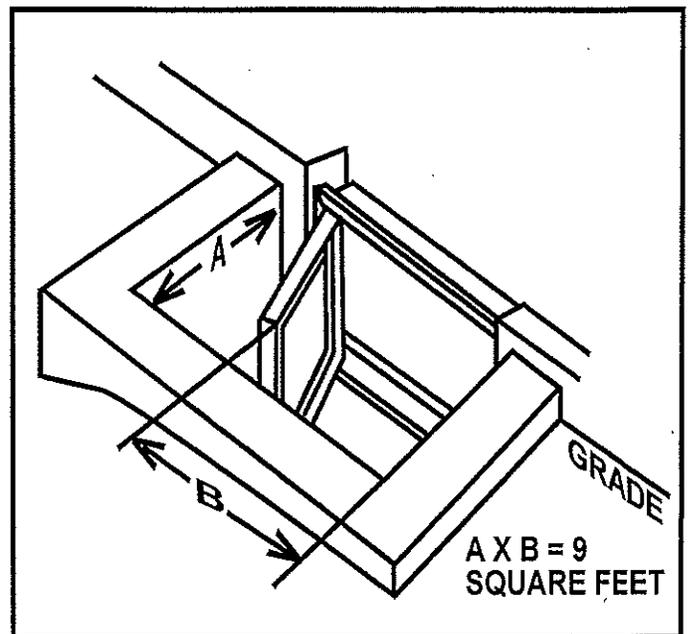
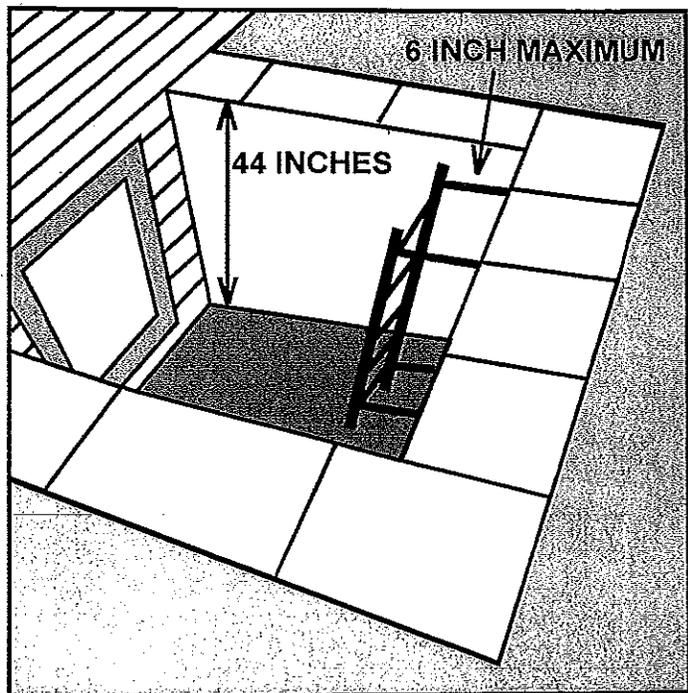
Exception: The ladder or steps required by Section R310.2.1 shall be permitted to encroach a maximum of 6 inches (152 mm) into the required dimensions of the window well.

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, grills, 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 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. 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 vertically for the full height of the window well.

Guard. Although the code does NOT specify requirements for guard around window wells to keep persons from falling into them, falls can and do occur. Because of the variations in 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 provide 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.

ESCAPE *continued*

EMERGENCY ESCAPE AND RESCUE OPENINGS

