

Egress/Escape Windows Guide – 2014 Alberta Building Code

NOTE: This Bulletin applies to bedroom windows in single family dwellings and multi-family dwellings up to 600 square metres (6,500 square feet).

Rocky View County is providing this bulletin to assist in determining if the size of a proposed window meets the minimum bedroom egress (emergency escape) requirements.

REQUIREMENTS of the ALBERTA BUILDING CODE 2014

9.9.10.1 Bedroom Windows

- 1) Except where the suite is sprinklered, each bedroom or combination bedroom shall have at least one outside window or exterior door openable from the inside without the use of keys, tools or special knowledge and without the removal of sashes or hardware.
- 2) The window referred to in Sentence (1) shall
 - a) provide an unobstructed opening of not less than 0.35m² (3.77ft²/542.5 in²) in area with no dimension less than 380mm (15") and
 - b) maintain the required opening during an emergency without the need for additional support.

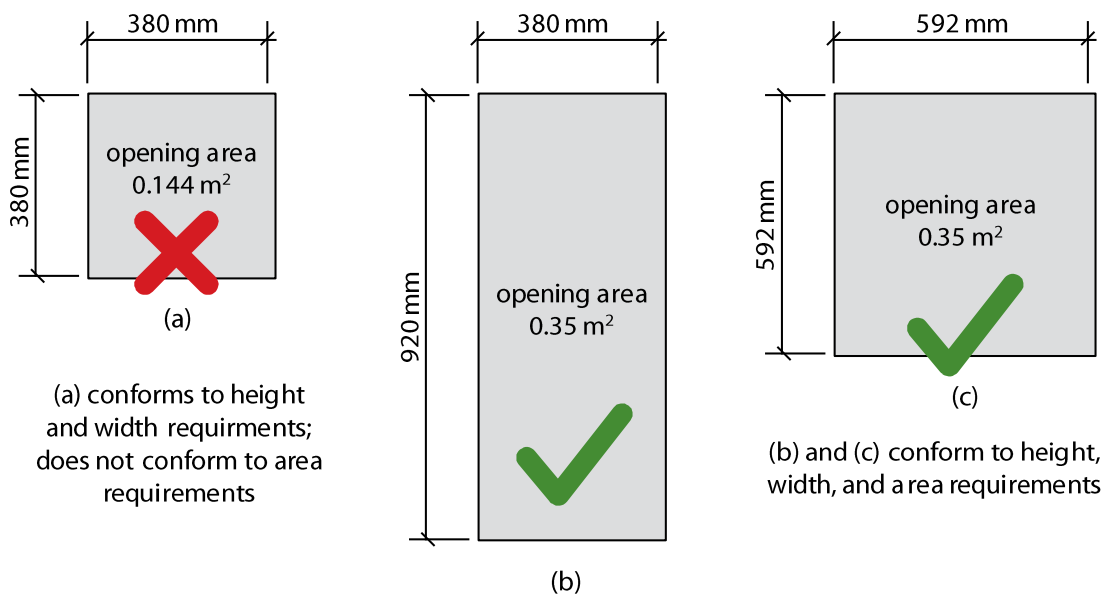


Figure 1

This requirement is specifically intended to provide occupants with the means to escape in an emergency situation when the use of the normal building exits is prevented. Although bedroom windows are not considered to be ordinary escape routes, using them in an emergency has saved many occupants. The unobstructed opening must be measured between the window components (sash, jamb, sill, opening mechanism, etc.) with the window in the fully open position (Figure 2).

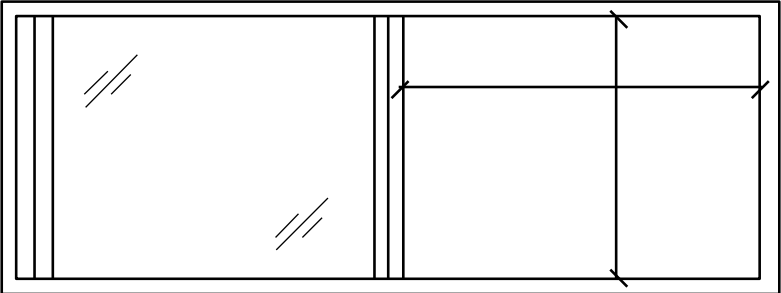


Figure 2

It is not simply the dimensions of the rough opening or the glass area. A test for the required minimum opening is the ability to pass a prism of the required cross-sectional area and minimum dimensions through the opening (Figure 3).

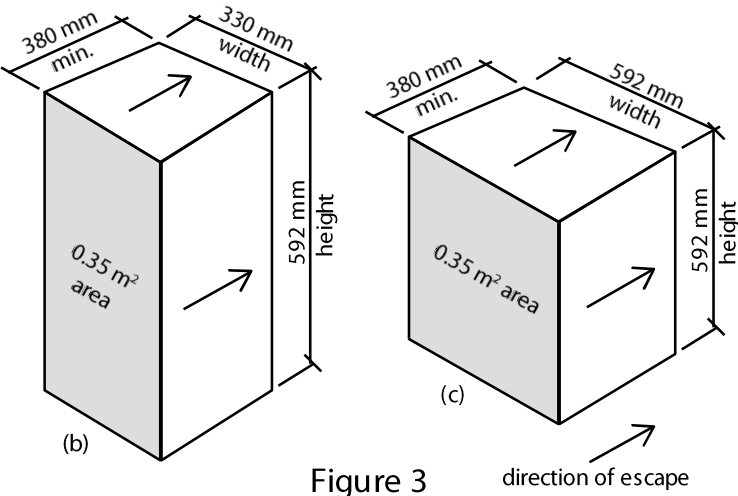


Figure 3

- 3) If the window referred to in Sentence (1) is provided with security bars, the security bars shall be openable from the inside without the use of keys, tools or special knowledge.
- 4) Where a window required in Sentence (1) opens into a window well, a clearance of not less than 760mm (30") shall be provided in front of the window, Figure 4).
 - a. Where the sash of this window swings towards the window well, the operation of the sash shall not reduce the clearance in a manner that would restrict escape in an emergency.
 - b. Where a protective enclosure is installed over the window well, the enclosure shall be openable from the inside without the use of keys, tools or special knowledge of the opening mechanism.

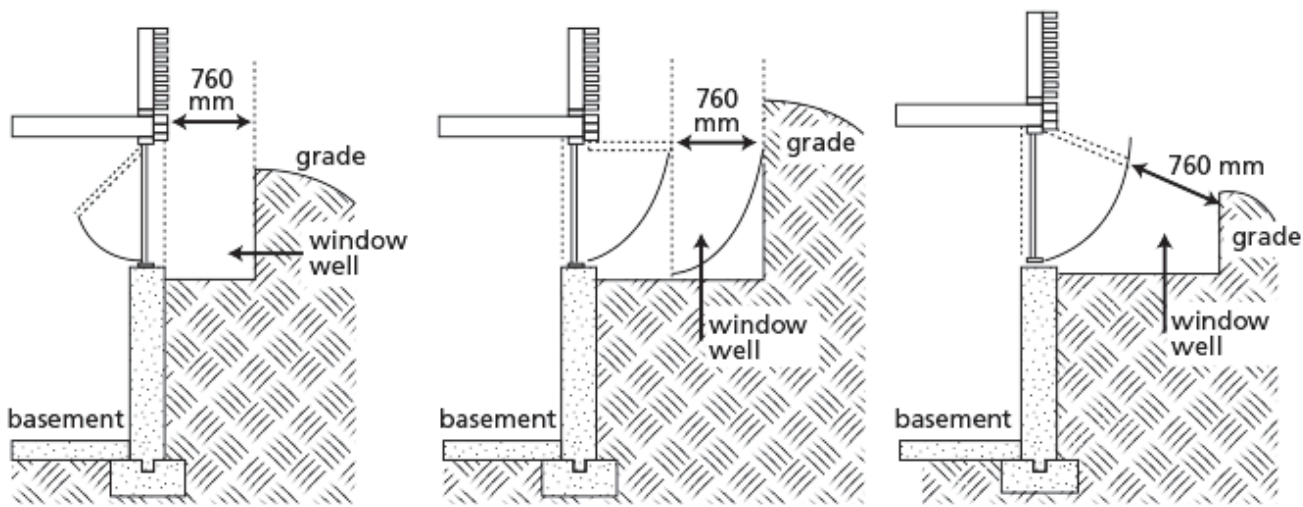


Figure 4

WINDOW TYPES

PICTURE

Non-operable, **not acceptable** as egress.

TILT AND TURN

Dual swing operation may be in-swing or out-swing, must meet the requirements for a casement or awning without the need for special knowledge. **Acceptable** as an egress window.

CASEMENT

Casement windows (Figure 5) open on their vertical axis and usually have opening hardware installed at the bottom of the window. Since this hardware obstructs an occupant's escape, the opening should be measured to the hardware. In addition to the opening hardware, casement windows usually have latches opposite the hinge. These latches should be within reach of children who are expected to escape on their own.

Casement windows come with two types of hinge hardware. The normal hardware allows the window to pivot around a vertical axis that is not at the jamb. Alternatively, egress hinge hardware hinges the window at an axis along the jamb to allow for a maximum unobstructed opening. **Casement windows are acceptable when the opening is large enough to pass the prism test with the opening hardware in its most restrictive position and the window fully open.**

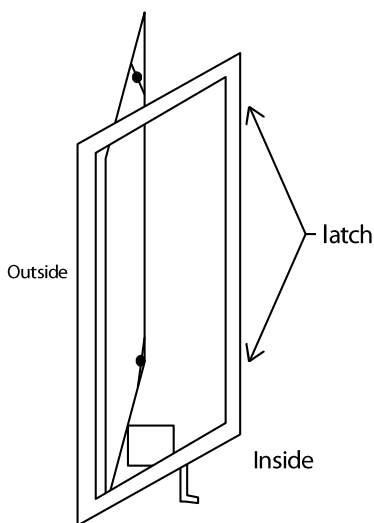


Figure 5

SLIDER

Horizontal and vertical slider windows (Figure 6) are commonly used in residential construction. **They acceptable when the opening is large enough to pass the prism test.** Some slider windows have the ability to flip open into the room to allow for easy cleaning. This operation requires several steps and is not considered normal opening of the window. The unobstructed opening should be measured when the window is in the fully open position.

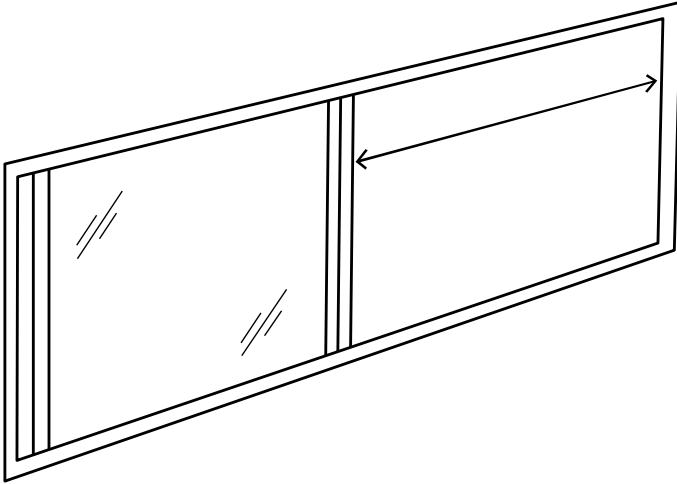


Figure 6

AWNING

Swing operation top or head hinged on a horizontal axis, may be in-swing or out-swing (Figure 7). **Acceptable** as an egress window, provided the window may open a full 90 degree swing free of obstructions. Window must be able to remain in fully open position by its own mechanism. **Operating must be side-mounted and not create an obstruction to egress.** Out-swing awning windows are not permitted for egress where it opens into a window well, unless there is a space of at least 760mm (30") between the inside face of the window well and the sash of the fully opened window.

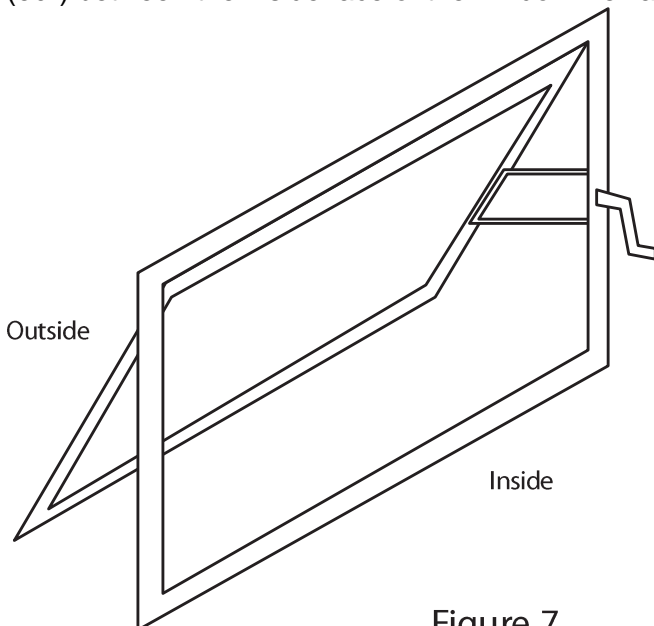


Figure 7

FULL VENT INSWING AWNING

Full vent inswing awning windows (Figure 8) swing open on their vertical axis at the top of the frame or at an intermediate mullion. This type of window latch does not use an opening operator and is able to swing open without restriction or be held partially open with intermediate catches. It swings in toward the user and does not restrict the clearance when opening into a window well. This type of window is typically marketed as a “basement” window because it swings inward and the size of the opening is not restricted by the opening mechanism. **If there is a catch available to hold the window in an open position, this type of window is acceptable.**

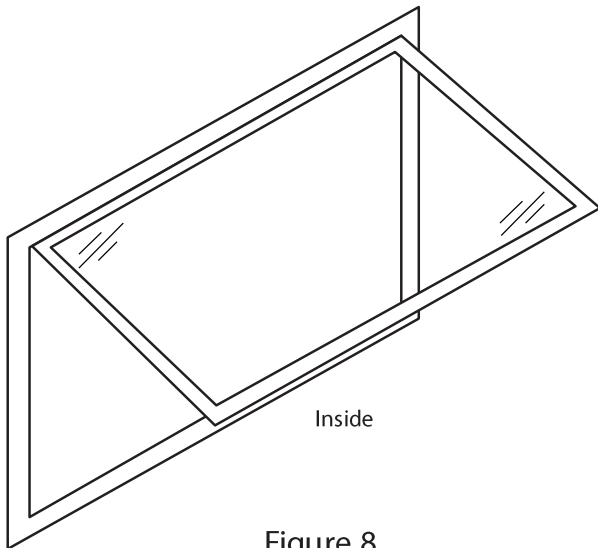


Figure 8

HOPPER

Hopper windows (Figure 9) swing open on their horizontal axis at the bottom of the frame or at an intermediate mullion. They have a latch to hold them closed and do not typically come with an opening operator. This allows them to swing open freely or be held partially open with intermediate catches. With typical hopper windows, a bedroom occupant would have to crawl over the glass area to escape. **Hopper windows that swing to an open, fully vertical position without intermediate catches can be acceptable, but hopper windows are not commonly used for bedrooms.**

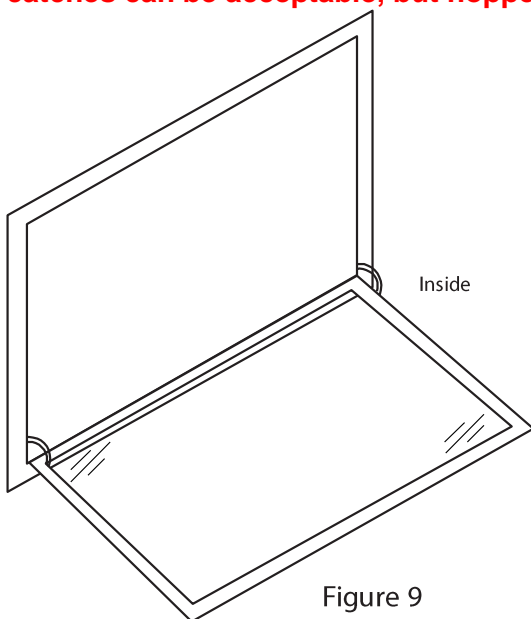


Figure 9

MAXIMUM SILL HEIGHT

There is no set maximum sill height for the bedroom windows. Therefore, it is possible to install a window or skylight that satisfies the requirements, but defeats the intent when the sill height is so high that it cannot be reached for escape purposes. It is recommended that the sills of windows intended for use as emergency escape be no higher than 1.5m (5') above the floor. When it is unavoidable to have a sill higher than 1.5m (5'), access to the window should be improved by some means, such as built-in furniture installed below the window.

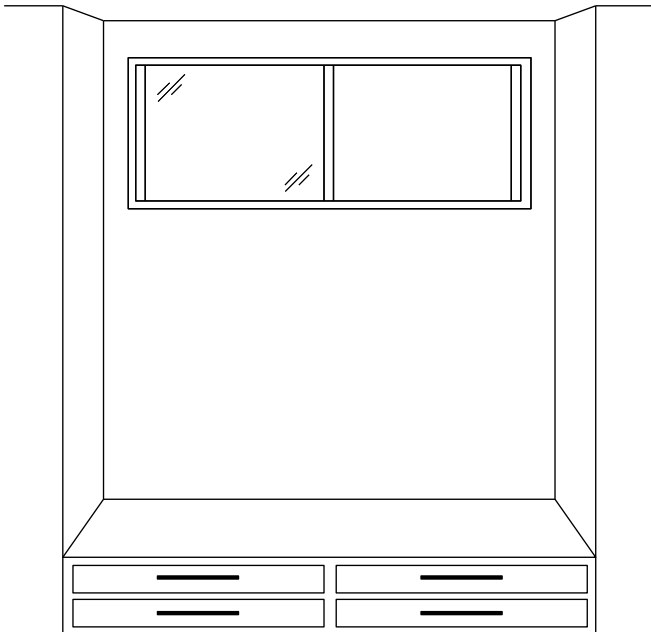


Figure 10

OTHER CONSIDERATIONS

Ice build-up that prevents or restricts an opening window is a concern with any type of window. With improved heating and venting systems in houses and improved window construction, ice build-up appears to be less of a concern than it may have been in the past.

Latches incorporated on the inside of a window frame are not considered to require special knowledge to release. These latches are typically engaged, for security or to ensure the window is shut tightly, and released as part of the normal opening process.

Insect screens, security bars, grills or similar devices should be easily removable or releasable from the inside without the use of a key, tool, or special knowledge.

Children who are expected to escape through a bedroom window on their own should be taught how to open the window and remove or release any screens or bars that may be installed. Home fire drills should include practicing in using the window as a means of escape. For those people that are too young or physically infirm to escape on their own through a window, special precautions such as additional smoke detectors in the bedroom to assist with early detection or relocating their bedroom to the first story to assist with their rescue, might be considered.

GUIDELINES AND INTERPRETATIONS

- 1) The term special knowledge is interpreted as knowledge of a movement or series of movements that would not be congruent with one simple motion to unlock the window and one simple motion to open it.
- 2) Unobstructed area is determined within the window's normal open position and does not allow for the removal of any parts or units.
- 3) Security bars on egress windows are not permitted unless reviewed and approved on a case-by-case basis.
- 4) Covers or grates over a window well serving a bedroom are not permitted unless reviewed and approved on a case-by-case basis.
- 5) Egress windows below cantilevers shall have a minimum clearance of 760mm (30") between the underside of the projection and the top of the window well or adjacent grade. The cantilever should not project more than 610mm (24") from the principal wall.
- 6) Egress windows below decks are not permitted unless there is a minimum headroom clearance of 2.1m (6'11") between grade and the underside of deck, or there is a minimum headroom clearance of 760mm (30") between grade and the underside of deck and the window opening is immediately adjacent to the edge of the deck above.