

Window, Door and Skylight Installation or Replacement

2021 IRC & 2021 IECC

Permits are required for the replacement or installation of skylights, windows, and doors. Colorado State law and currently adopted codes require carbon monoxide alarms to be installed per the manufacturer's written installation instructions within 15 feet of the entry to each sleeping room when alterations or repairs requiring a building permit occur in homes having fuel fired appliances or an attached garage. Smoke alarms shall be installed: in each sleeping room; outside each separate sleeping area in the immediate vicinity of the bedrooms; on each additional story of the dwelling including basements; in accordance with the currently adopted building code; and in compliance with the manufacturer's installation instructions. Smoke and Carbon monoxide alarms shall be one of the following: fully battery powered; plug-connected into a dwelling's unswitched electrical outlet and include a battery backup; wired into a dwelling's electrical system and include a battery back-up; or connected to an electrical system via an electrical panel. Approved combination smoke/ carbon monoxide alarms may be used. Final inspections of window, door and skylight installation or replacement will include verification of carbon monoxide alarms and smoke detectors.

Complete window submittal form indicating the location of all new or replacement windows, including identification of each room. A sketch or drawing may be requested during review. For new installations or any change in opening size, plans shall include a sketch indicating the framing for the floor and roof above, the size of the opening, and any framing changes and headers to be installed. New or enlarged window openings in basement walls require an engineered plan for the proper support of the foundation during and after cutting.

Non-complying windows in basements or sleeping rooms shall be modified to meet the current egress window and window well requirements. Individual hardship situations will be evaluated on a case by case basis. Replacement windows in sleeping rooms or basements without sleeping rooms shall comply with the required openable egress area, width, and height. The finished sill height shall not be increased unless it complies with the current code for egress openings. Egress window and window well requirements are:

- Every sleeping room (or basement without sleeping room) shall have one exterior door or escape and rescue window with a minimum of 5.7 sq. ft. of net clear opening. The minimum height of this clear opening shall be at least 24". The minimum width of the clear opening shall be at least 20". Note that a window with both the minimum width and the minimum height cannot be used to achieve the 5.7 square foot net clear opening required. Windows at grade floor are permitted to have not less than 5.0 square feet of openable area. All escape and rescue windows shall have a sill height not more than 44 inches measured from the finished floor to the bottom of the clear opening.
- Egress window wells are required for all emergency escape and rescue windows below grade. Egress window wells shall have a minimum accessible net clear opening of 9 sq. ft. (minimum dimension of 36" in both directions) with the window in the fully open position. Window wells with a vertical depth of more than 44" shall be equipped with an approved, permanently affixed ladder or stairs that are accessible with the window in the fully open position. New or replaced window wells shall be provided with proper drainage by connecting to the building's foundation drainage system or other approved means.
- New doors, windows, and skylights are required to meet the current standards for energy conservation (IECC Chapter 4 [RE] for Residential and Chapter 4 [CE] for Commercial applications) and shall be labeled to indicate compliance with AAMA/WDMA/CSA 101/I.S.2/A440.

Air Infiltration Rate

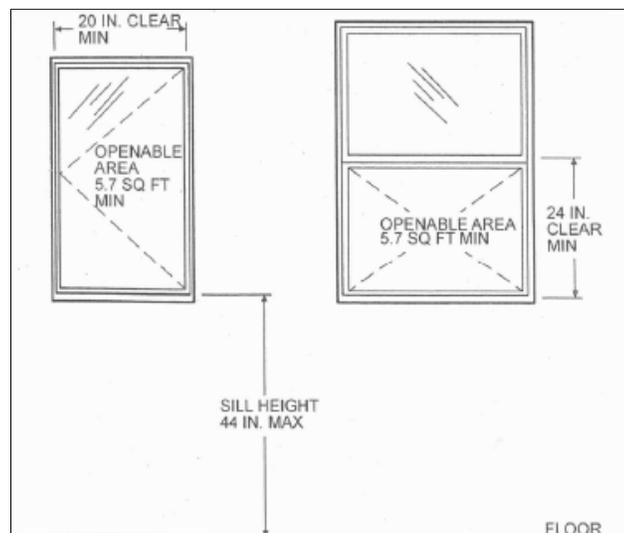
Windows, skylights, and sliding doors: 0.3 cfm/ft²

Swinging doors: 0.5 cfm/ft²

Thermal Transmittance

Doors / Windows Maximum U-value: 0.30; SHGC: 0.40

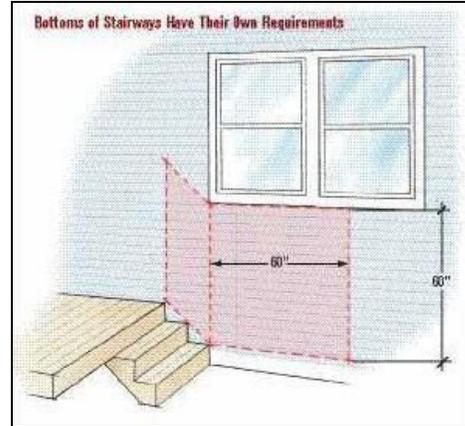
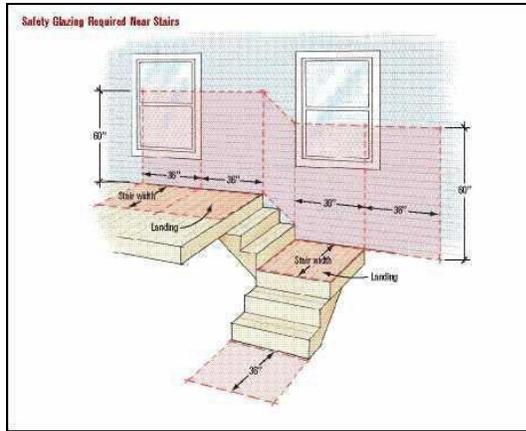
Skylight maximum U-Value: 0.55; SHGC: 0.40



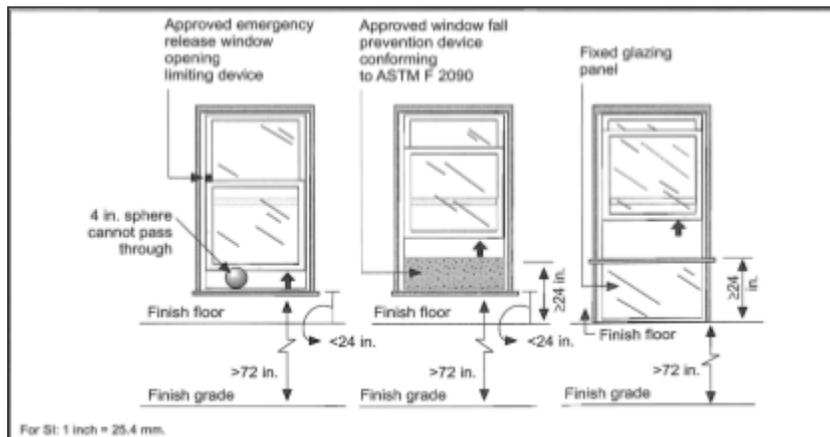
All openings shall be flashed to create a weather resistive barrier per IRC R703.1 and IBC 1403.2. Skylights may require a 4 inch high curb and/or screening below the skylight; see IRC R308.6.8 and IBC 2405.4.

Safety glazing is required for all hazardous locations subject to human impact, per IRC Section 308.4 and IBC 2406 including but not limited to the following:

- Within a 24" arc of either vertical edge of a door (except in a wall perpendicular to the door other than the wall toward which the door swings);
- Within 5 feet of stairways and landings;
- In bathtub & shower enclosures and adjacent to hot tubs, spas or pools or within 5 feet of any of these.



For fall protection, in locations where the opening of an operable window is more than 72 inches above the finished grade or surface below, the lowest part of the clear opening of the window shall be a minimum of 24 inches above the finished floor of the room in which it is located for one and two family dwellings, and shall be a minimum of 36 inches above the finished floor of the room in which it is located for Occupancy Groups R-2 and R-3. Approved window guards or limited opening sizes may be used in certain situations. IRC Section R312.2, IBC Section 1015.8.



WINDOW SILL HEIGHT COMMENTARY FIGURE 312.2.1

Instructions for Permit Submittal

- Complete and submit the [General Permit Application](#).
- Please complete and submit the Window / Door Submittal Form (page 3) listing each window or door that will be changed or modified. Complete and submit the Window Modification Form (page 4) if you have any egress windows that will not comply with the 2021 IRC egress requirements after window changes.
- Note If any openings are created or enlarged to install a new window or door, a stamped set of structural plans are required at the time of submission.



Broomfield Window / Door Submittal

Address:

Window / Door	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
Floor Level										
Room										
Window Type: (Single Hung, Double Hung, Slider)										
Sill Height from Floor to Clear Opening										
Distance to Doors/Stairs/tub/shower										
Safety Glazing Required?										
Openable Window Width ¹										
Openable Window Height										
Escape Window?										
Net Clear Opening										
Existing Window Well?										
Window Well Depth										
Existing Window Well Ladder?										
U-Factor ²										
SHGC ³										
Modification Needed? ⁴										

¹ Emergency and escape rescue openings shall have a net clear opening of not less than 5.7 SF. The net clear height opening shall be not less than 24" and the net clear width shall be not less than 20".

² Maximum window and door U-Value 0.30, maximum skylight U-value 0.55.

³ Maximum SHGC 0.40

⁴ A signed Modification Form (Page 4) and Photos shall be submitted with the permit documents. Modification(s) shall be approved by the building department.



Broomfield Window Modification Form

The contractor shall complete this form in case code requirements have changed since the residence in question was built, and/or when it is no longer possible to install a new window in the same framed opening that meets currently adopted code requirements for energy efficiency and for egress, escape and rescue openings. Please be advised that filling out this form does not guarantee that an exception will be granted.

Date:
Property address:

Year residence was built:
Owner/Purchaser:

	1st	2nd	3rd	4th	5th
Location and floor level					
Window type					
Same operating style as original?					
Sill height, from floor to clear opening					
Net clear opening width					
Net clear opening height					
Net clear opening size					
Net clear opening width and height same as original? (+/- 2 inches)					

- Net clear height and width to meet the 5.7 SQ. FT. opening requirement, for sill height more than 44 inches above exterior grade

Width:	20	20.5	21	21.5	22	22.5	23	23.5	24	24.5	25	25.5	26	26.5	27	27.5
Height:	41	40	39	38	37	36.5	35.5	35	34	33.5	33	32	31.5	31	30.5	30
Total Sq. Ft. Opening=	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7

Width:	28	28.5	29	29.5	30	30.5	31	31.5	32	32.5	33	33.5	34
Height:	29.5	29	28.5	28	27.5	27	26.5	26	25.5	25.2	25	24.5	24
Total Sq. Ft. Opening=	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7

- Net clear height and width to meet the 5.0 SQ. FT. opening requirement, for sill height less than 44 inches above exterior grade

Width:	20	20.5	21	21.5	22	22.5	23	23.5	24	24.5	25	25.5	26	26.5	27	27.5
Height:	36	35	34	33.5	33	32	31	30.5	30	29.5	29	28.5	27.5	27	26.5	26
Total Sq. Ft. Opening=	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0

Width:	28	28.5	29	29.5	30
Height:	25.5	25.5	25	24.5	24
Total Sq. Ft. Opening=	5.0	5.0	5.0	5.0	5.0

I agree that:

1. The net clear height, width, and opening size shall not be reduced from egress, escape, or rescue opening requirements of Ch 3, 2021 IRC, except by the minimum absolutely necessary amount.
2. Egress hardware is to be used, if at all possible, for casement windows at required egress window locations.
3. New required egress windows shall not constitute a step further away from meeting currently adopted code requirements, compared to what was originally installed.
4. Please explain any reason why any items 1-3 above cannot be practically satisfied, and/or reasons for changes in net clear opening size and/or operating style:

Owner/Purchaser's Signature:

Date:

Contractor's Signature:

Date: