DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Executive Director of Department of Public Health and Environment

Water and Efficiency Standards

5 CCR 1004-2

[Editor's Notes follow the text of the rules at the end of this CCR Document.]

Adopted by the Executive Director of the Colorado Department of Public Health and Environment on June 20, 2025.

1.0: WINDOWS/DOORS/SKYLIGHTS

Pursuant to Colorado Revised Statutes§ 24-4-103 (12.5), materials incorporated by reference are available for public inspection during normal business hours, or copies may be obtained at a reasonable cost from the Office of the Executive Director of the Colorado Department of Public Health and Environment, 4300 Cherry Creek Drive South, Denver, Colorado 80246-1530. Materials incorporated by reference are those editions in existence as of the date indicated and do not include any later amendments.

Unless otherwise indicated, any incorporation by reference of provisions of the National Fenestration Rating Council, Inc., ANSI/NFRC 100-2023, Procedure for Determining Fenestration Product Li-factors ('NFRC 100") are to the edition effective as of January, 2025.

1.1. On or after January 1, 2026, to be sold or leased for residential use in Colorado, residential windows, doors, and skylights must meet either the criteria established in§ 6-7.5-105(5)(j)(I) C.R.S. or the following criteria (all U-factor values shown are in units of British thermal unit per hour per square feet per degree fahrenheit):

1.1.1. Residential windows: Li-factor of 0.30 or lower

Residential windows must have Li-factor equal to or lower than 0.30.

1.1.2. Residential skylights: Li-factor of 0.50 or lower

Residential skylights must have U-factor equal to or lower than 0.50.

1.1.3. Residential doors, >½-lite: Li-factor of 0.30 or lower

Residential >½-lite doors must have U-factor equal to or lower than 0.30.

A >½-lite door is defined as a door with greater than 900 square inches of glazing or a sidelite with greater than 281 square inches glazing (per NFRC 100). This definition includes ¾-lite and fully glazed doors and sidelites.

1.1.4. Residential doors, other than >½-lite: exempted

Residential doors that do not meet the definition of >½-lite are not required to satisfy the criteria described above. A >½-lite door is defined as a door with greater than 900 square inches of glazing or a sidelite with greater than 281 square inches glazing (per NFRC 100). This definition includes ¾-lite and fully glazed doors and sidelites.

1.2. Statement of Basis and Purpose and Specific Statutory Authority, June 20, 2025

1.2.1. Basis

To establish an alternative energy standard for residential windows, doors, and skylights requirements currently established in HB23-1161. The alternative standard, consistent with the 2024 IECC standards including higher Li-factor thresholds, may be used and applied for compliance with §6-7.5-105, C.R.S., instead of the standards initially established in the statute for residential doors, windows and skylights.

1.2.2. Specific Statutory Authority

§ 6-7.5-105(5)(j)(II), C.R.S requires the CDPHE Executive Director (or his or her designee) to set an alternative standard for residential windows, residential doors, and residential skylights, if the Executive Director (or his or her designee) determines that the standard established in §6-7.5-105, C.R.S. “cannot reasonably be met by manufacturers”. This determination may be made after consultation with the Colorado Energy Office (“CEO”) and with consideration of (a) impacts on net consumer costs; and (b) supply chain constraints.

1.2.3. Purpose

The standards in 5 CCR 1004-2 are alternative standards to those established in § **6-7.5-105(5)(j)(I) C.R.S** s for windows, doors, and skylights sold or leased in Colorado. A windows, doors, or skylight manufacturer covered under§ 6-7.5-105(5)(j)(I), C.R.S. may choose between the standard established in§ 6-7.5-105(5)(j)(I), C.R.S. or established in this rule to comply with the statute. The alternative required Li-factors established in this rule are derived from the “Maximum Assembly Li-Factors and Fenestration Requirements” table (Table R402.1.2) of the residential 2024 International Energy Conservation Code, R402.1.2 (the edition effective as of August 14, 2024) for climate zone 5 installations above 4,000 feet.

Because most of Colorado is above the high altitude threshold of 4,000 feet, this standard applied the required high altitude maximum Li-factors uniformly across the state. These standards are for window, door, and skylight products sold in Colorado after January 1, 2026. Because this is a point of sale restriction, this rule does not impact the applicability of local building codes.

After discussions with manufacturers of covered residential windows, doors and skylights, and further analysis, CEO concluded that the standard based on ENERGY STAR V.7 established in HB23-1161 cannot reasonably be met by manufacturers without imposing an unreasonably high net cost on consumers. The standard based on Energy Star v.7 would also significantly reduce the number of residential door product types available for purchase in Colorado and would limit the number of window product types available for Coloradans that live above approximately 9,000 feet in elevation. Accordingly, CEO recommended an alternative standard that would improve building energy efficiency without imposing an unreasonably high cost on consumers or significantly reducing the number of residential window, door, and skylight product types available in Colorado.

Based on the CEO analysis, it is estimated that requiring residential windows to meet the ENERGY STAR V.7 specification established in HB23-1161 would increase the cost of vinyl windows by 15-40%. For a typical Colorado home, purchasing new windows that meet the ENERGY STAR V.7 specification would cost an additional $1,500 to $2,500 (for replacement of all windows in the home) when compared to purchasing baseline windows with LI-factor of 0.35. The payback period for the incremental investment is estimated to be between 20 and 30 years for the vast majority of Coloradans. For this calculation, the payback period is defined as the number of years it would take for the annual energy bill savings to make up for the upfront incremental investment required to purchase the ENERGY STAR V.?compliant windows.

After the warranty period for a window has lapsed, a consumer has no recourse if the glass seal in a window fails. Such a failure would increase the LI-factor of the window and likely reduce its energy efficiency to such an extent that the window would no longer meet the ENERGY STAR v.7 specification. CEO calculated that the projected payback period for Energy Star v.7 compliant windows is 20-30 years, which is longer than the typical window warranty. CEO ultimately concluded that an alternative standard that resulted in payback periods 15 years or shorter for residential window purchases, which is more in line with typical warranty lengths, results in a more reasonable cost for consumers.

The alternative window, door, and skylight standard proposed by CEO results in an estimated payback period for efficient window, door, and skylight purchases of between 10 and 15 years for the majority of Coloradans and does not significantly limit consumer product choices.

Editor's Notes

History

New rule eff. 08/14/2025.