

7 - HVAC AND ENERGY: Building Envelope

Figure 7-27. NFRC Window Label Summary

U-factor: Non-solar heat flow through both the glass and the frame.	Range: 0.17 to 1.20; Lower is better.
Solar Heat Gain Coefficient: Fraction of the sun's energy falling on the window that will enter the home.	Range: 0 to 1; In cooling climates, lower is better. In heating climates depending on passive solar heating, higher is better.
Visible Transmittance: Measures how much visible light comes through the window.	Range 0 to 1; Higher is better.
Air Leakage: Measure of the air that can leak through the cracks in the window assembly.	Range 0 to 1; Lower is better.
Condensation Resistance: Measure of the window's ability to resist condensation forming on the window surface.	Range 0 to 100; Higher is better.

The NFRC label provides performance ratings for a standard-size window, door glazing, or skylight, so that regardless of size, the components and construction of one product can be compared to other products.

Curtains or blinds should be provided on all windows, and their effect considered in load calculations.

Cold/cool climates. South-facing glass helps capture the sun's heat, while north-facing glass tends to carry an energy penalty.

Comparing Window Types

Window types are usually sorted in terms of both the glazing type and the frame material. While frame and glazing can be evaluated separately, they ultimately must be evaluated together. **Figure 7-29 (next page)** provides a summary of the thermal performance properties of various window types. This can be used as a general comparison when choosing a window type, but the NFRC rating of individual products should be evaluated before making a selection.

Problem Areas

Window Types and Labels

Figure 7-28. Window and Skylight Maximums

Climate Zone	Fenestration U-factor	Skylight U-factor	SHGC
1	1.2	0.75	0.40
2	0.75	0.75	0.40
3	0.65	0.65	0.40
4 (except Marine)	0.40	0.60	NR
5 and Marine 4	0.35	0.60	NR
6	0.35	0.60	NR
7 and 8	0.35	0.60	NR