



Rating the Energy Performance of Skylights

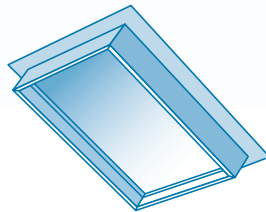
Skylights provide a natural source of light, and help us conserve energy by reducing dependence on electric lighting. And like windows and glass doors, they connect us with the outdoors while keeping out the cold in the winter and the heat in the summer

The National Fenestration Rating Council's (NFRC) energy performance label can help you determine how well a skylight will perform when it comes to energy efficiency. By using the information contained on the label, architects, builders, code officials, contractors, and homeowners can:

- Reliably compare one product with another
- Make an informed fenestration product choice
- Trust that a product will perform as advertised
- Determine whether a product meets code

A Better Way to Determine Skylight Ratings

Recently, NFRC changed the way it determines the energy performance ratings of skylights. The council used to rate skylights vertically, as if they were windows. On April 1, 2003, NFRC began rating skylights at a slope of 20 degrees – in other words, at the angle they're actually used in most homes and buildings.



Skylight manufacturers began using the new procedure on April 1, 2003, and all manufacturers must use the new procedure beginning April 1, 2004.

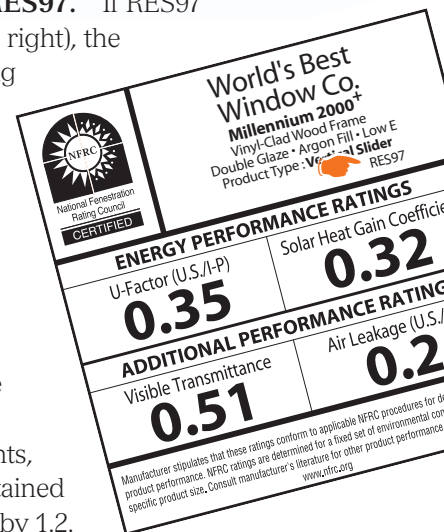
Until then, you'll find skylights rated under both procedures in the marketplace. This may cause some confusion, because the new procedure will result in a different U-factor rating than the old procedure (U-factor measures the ability of a skylight to keep heat in your home, and the lower the number the better).

So it's possible that you'll find two *identical* skylights with *different* U-factors sitting right next to each other when you visit a home store or inspect a home or building.

A Guide for Comparing Skylights

Here's what to do when you come across skylights rated using different procedures:

1. **Remember that the skylight is the same.** The U-factor changes because the rating procedure has changed, not because the skylight has changed.
2. **Look for the letters "RES97."** If RES97 appears on the label (see right), the rating was obtained using the old 90 degree procedure. If RES97 does not appear, the rating was obtained using the new 20 degree procedure.
3. **Multiply by 1.2.** If you need to convert from the old rating to the new in order to compare skylights, multiply the U-factor obtained using the old procedure by 1.2. So a product with a U-factor of 0.50 under the old procedure will have a U-factor of 0.60 (0.50 x 1.2) under the new procedure.



How To Determine Energy Code Compliance

For those involved in determining skylight energy performance for code compliance purposes, the trick is knowing when you need to convert 90 degree ratings into 20 degree ratings.

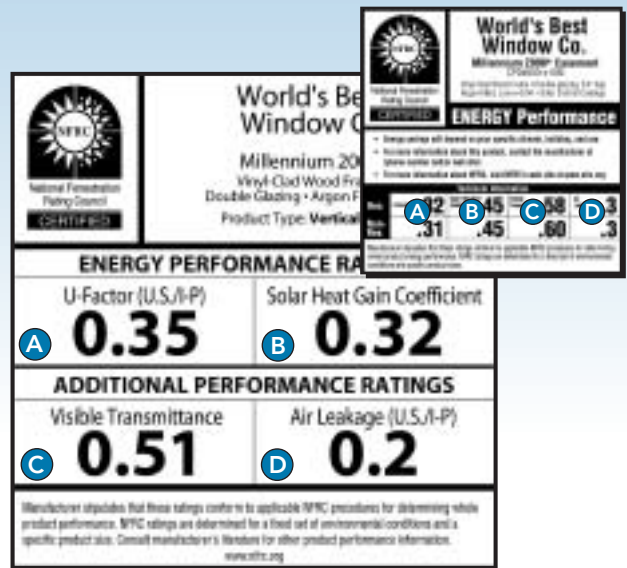
ENERGY STAR® – The ENERGY STAR rating levels that went into effect on August 29, 2003, accommodated the change in orientation and raised the skylight requirement appropriately.

Energy Codes – The 2000 International Energy Conservation Code (IECC), which serves as the basis of many state energy codes, was based on the 90 degree ratings and sets a U-factor compliance level of 0.50. The 2003 IECC was written based on 20 degree ratings and sets a U-factor compliance level of 0.60. If the product rating label indicates a 20 degree rating, states using the 2000 IECC will need to make an appropriate adjustment on these products.

The table below provides guidelines for proper comparisons.

	90 Degree Ratings	20 Degree Ratings
ENERGY STAR® Compliance	Multiply product rating by 1.2	No adjustment
Local Energy Code (Based on 2000 IECC or earlier)	No adjustment	Multiply code requirement by 1.2
Local Energy Code (Based on 2003 IECC)	Multiply product rating by 1.2	No adjustment
Two products	Multiply product rating by 1.2	No adjustment

For more information about the new ratings procedures, and to search NFRC's Products Directory for skylights that meet your needs, please visit the NFRC Web site at www.nfrc.org.



- A U-Factor** measures how well a product prevents heat from escaping a home or building. U-factor ratings generally fall between 0.20 and 1.20. The lower the U-factor, the better a product is at keeping heat in. U-factor is particularly important during the winter heating season. This label displays U-factor in U.S. units. Labels on products sold in markets outside the United States may display U-factor in metric units.
- B Solar Heat Gain Coefficient (SHGC)** measures how well a product blocks heat from the sun. SHGC is expressed as a number between 0 and 1. The lower the SHGC, the better a product is at blocking unwanted heat gain. Blocking solar heat gain is particularly important during the summer cooling season.
- C Visible Transmittance (VT)** measures how much light comes through a product. VT is expressed as a number between 0 and 1. The higher the VT, the higher the potential for daylighting.
- D Air Leakage (AL)** measures how much outside air comes into a home or building through a product. AL rates typically fall in a range between 0.1 and 0.3. The lower the AL, the better a product is at keeping air out. AL is an optional rating, and manufacturers can choose not to include it on their labels. This label displays AL in U.S. units. Labels on products sold in markets outside the United States may display AL in metric units.