ENERGY RATINGS

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THE NATIONAL FENESTRATION RATING COUNCIL

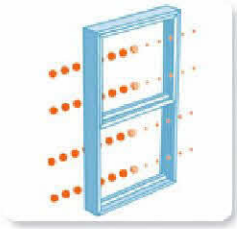
Energy Ratings

What the Ratings Mean

In order to apply the ENERGY STAR ® label to products, manufacturers must first test their **FENESTRATION** *products according to NFRC procedures, which include independent testing at NFRC approved laboratories.*

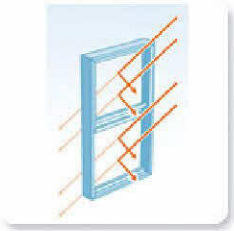
These tested products bear NFRC labels that provide important information on the Energy Ratings for the products. This information is of little benefit to you IF you are unsure how to interpret the results and are unaware of the needs for your home.

The NFRC label provides ratings for **U-factor** *and* **Solar Heat Gain Coefficient**, *and* **Visible Transmittance** *(required ratings), and may include information on testing for* **Air Leakage** *and* **Condensation Resistance**.



U-factor *measures how well a product prevents heat from escaping a home or building. U-factor ratings generally fall between 0.15 and 1.20. The lower the U-factor, the better a product is at keeping heat inside the building. U-factor is particularly important during the winter heating season in colder climates. This label displays U-factor in U.S. units. Labels on products sold in markets outside the U.S. may display U-factor in metric units.*

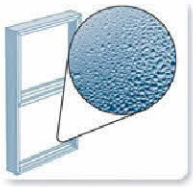
What's the Difference between U-factor and R-value?
The biggest difference between U-factor and R-value is that U-factor measures the rate of heat transfer (or loss) while R-value measures the resistance to heat loss. R-value is a measure of conductance and resistance. A product with high conductance will conduct heat quickly, like a hot pan on the stove or a single pane of glass on a cold day. U-factor, on the other hand, takes into account more than conductance. It also is affected by the airflow (convection) around the window and the emissivity (radiated or reflected heat) of the glass. Click here for an article on "Why NFRC Uses U-factors for Windows."



Solar Heat Gain Coefficient *(SHGC) measures how much heat from the sun is blocked. SHGC is expressed as a number between 0 and 1. The lower the SHGC, the more a product is blocking solar heat gain. Blocking solar heat gain is particularly important during the summer cooling season in hot Southern climates. By contrast, people in Northern climates may want solar heat gain during the cold winter months to lessen the cost of heating the home.*

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.*

Air Leakage *measures how much outside air comes into a home or building through a product. Air leakage rates typically fall in a range between 0.1 and 0.3. The lower the air leakage, the better a product is at keeping air out. Air leakage is an optional rating, and manufacturers can choose not to include it on their labels. This label displays air leakage in U.S. units; labels on products sold in markets outside the United States may display air leakage in metric units.*



Condensation Resistance *measures how well a product resists the formation of condensation. Condensation resistance is expressed as a number between 1 and 100. The higher the number, the better a product is able to resist condensation. Condensation resistance is an optional rating, and manufacturers can choose not to include it on their NFRC labels.*

What are the other options to consider when shopping for windows?
In addition to the NFRC Label, ratings comparisons, and ENERGY STAR, buyers may consider a number of other factors when choosing windows. These include: air infiltration, water infiltration, structural performance, acoustical performance, security performance, product cost, and warranty. Product cost and warranties are issues to be considered when making any major purchase, and this information is available from the window distributor or manufacturer.

Water infiltration *measures the amount of water and pressure that a window can resist to keep the water from leaking through it. The higher the water infiltration rating, the better the window is at resisting water leakage.*

Structural performance ratings *measure the amount of air pressure (wind load) a window can resist before failing. The amount of structural pressure ratings required for windows in your area is often determined by local code requirements. The higher the structural performance ratings, the more wind load a window can resist.*

Acoustical performance ratings *measure the amount of sound transmission through a window. The higher the sound transmission rating, the better the product is at blocking noise from coming through the window.*

Security performance ratings *measure the ability of a window to resist different types of forces. For example, there are burglar-resistant windows, fire-resistant windows, bullet-resistant windows, wind-borne debris-resistant windows, and many others. Many of these products have special uses for different building types and may be covered by local building code requirements.*