

6 Things To Know If You Want Energy-Efficient Windows

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Up to 30 percent of residential energy loss is through windows and doors, per data from the U.S. Department of Energy. That means installing energy-efficient replacement windows and doors is the way to reduce your electricity costs and shrink your family's carbon footprint by the largest amount. The information below is to help you make sure that you are getting high-quality energy-efficient windows for your home.

Benchmarks for Energy Efficient Home Windows

So, what *makes* windows energy-efficient? Energy efficient windows undergo substantial validation and receive ratings of their effectiveness levels from both the National Fenestration Rating Council (NFRC) and the EPA. The NFRC is the window industry authority on product quality. The Council independently certifies windows, doors, and skylights for energy efficiency. New windows manufactured in the U.S. are also rated and labeled in the EPA's Energy Star® program. These inspections rate windows based on the first 5 factors on this list:

Air Leaks

The rate of Air Leakage (AL) is the amount of air in cubic feet being lost along a square foot of window surface in a minute. Building regulations in various areas of the U.S. set the maximum rate of AL allowed from windows at 0.3cf-m/ft². A low AL rating indicates a higher degree of energy efficiency in a residential window.

Low U-Factor

A window's U-Value is its rate of heat transfer through the unit, including the glass *and* frame. The lower the U-Factor, the higher the window's effectiveness as an insulator. Gas-filled double panes of glass may rate a U-Factor as low as 0.30 or less. Triple-pane gas-filled windows can rate 0.15 or even lower. (However, triple-panes with krypton gas fill, for example, are not necessarily as cost-effective overall as dual glass panes filled with argon gas.)

High Visible Transmittance Rating

The rate of Visible Transmittance (VT) in a window is the amount of light that is transmitted through the glass. The ratings of VT are assessed between 0 and 1. Most energy-efficient windows rate in the 0.20 to 0.80 range. The higher the transmittance rating, the higher the quantity of light that can pass through the glass.

Strong Condensation Resistance

A significant measurement of a window's energy efficiency is its Condensation Resistance (CR). That is its performance in preventing condensation from accumulating due to the differences in air temperatures on the opposing sides of the window glass. The Condensation Resistance rating range in NFRC testing is from 0 to 100. A higher CR rating indicates the greater effectiveness of a window in preventing the buildup of condensation.

Low Solar Heat Gain Coefficient

A window's SHGC is its rate of *solar* energy transference. That's how efficient the window is at blocking heat directly generated by sunlight. The rating is expressed as a fractional number from 0 to 1, with the usual range of performance valued between 0.25 and 0.80. A lower SHGC rating reflects a lower quantity of sunlight heat transferred through a window.

High-Quality Installation

The sixth energy-efficiency factor is window installation quality. Installation workmanship is, of course, not rated by the NFRC or the EPA. However, it is as important, or arguably more important than any other factor on the above list in determining the effectiveness of an energy-efficient window. Bad installation quality can cause serious air and/or water leaks. That can lead to uncomfortable living spaces, higher heating, and cooling bills, and even potentially serious structural issues due to water leaking.

Best Energy Efficient Windows – Energy Shield

We are a leading manufacturer of energy-efficient replacement windows specifically designed for homes in the harsh U.S. southwest environment. Energy Shield produces the best Energy Star windows for desert homes.

For a wide selection of energy-efficient replacement window styles, call Energy Shield Window & Door Company at (623) 349-7120, or contact us here on our website!
