

Selecting-Installing-Maintaining Windows



Windows make a connection to the outside world, light and views. But, they also can be passages for heat, cold, wind and moisture. Correctly installed, they can bring years of pleasure and comfort to your home.

Incorrect installation leads to lost energy and, in some cases; mold, mildew and structural damage to your home.

Selecting the right windows and the right contractor are most important.

In this fact sheet you will learn:

- How to select windows for energy efficiency, durability and cost.
- Best practices for installation.
- Methods for care and maintenance.


Energy efficiency and durability should take first place in the window selection process. Windows are rated by their capacities to control the movement of heat, light and air. They also are rated to withstand different levels or intensities of weather, such as wind and water. Window frames can be made of wood, metal (steel or aluminum), PVC, fiberglass or composite. Each of these materials has benefits and drawbacks. The glazing or glass can be single or dual pane (often called dual glazed or IG for insulated glass). Films and treatments are applied to the layers of glass to manage heat and light movement. Inert gas (argon and krypton) can be sealed between the panes of glass to reduce thermal conductivity (movement of heat).

Pre-planning is essential to a successful project and will help to ensure your windows will perform as you expect. Some things to consider when planning what type of windows you should get include:

- Choose windows for energy efficiency and durability.
- Identify the materials necessary for correct installation.
- Install according to manufacturers installation instructions.

Making your window selections

On the temporary label you will find the Energy Performance Ratings: U Factor, Solar Heat Gain Coefficient, Visible Transmittance and Air Leakage.

 National Fenestration Rating Council® CERTIFIED		World's Best Window Co. Millennium 2000+ Vinyl-Clad Wood Frame Double Glazing • Argon Fill • Low E Product Type: Vertical Slider	
ENERGY PERFORMANCE RATINGS			
U-Factor (U.S./I-P)	Solar Heat Gain Coefficient	0.35	0.32
ADDITIONAL PERFORMANCE RATINGS			
Visible Transmittance	Air Leakage (U.S./I-P)	0.51	0.2
Condensation Resistance		51	—
<small>Manufacturer stipulates that these ratings conform to applicable NFRC procedures for determining whole product performance. NFRC ratings are determined for a fixed set of environmental conditions and a specific product size. NFRC does not recommend any product and does not warrant the suitability of any product for any specific use. Consult manufacturer's literature for other product performance information. www.nfrc.org</small>			

National Fenestration Rating Council label

The National Fenestration Rating Council (NFRC) label is a temporary label placed on glass windows and can be removed after any required inspections. This label is an energy performance label that can help you determine how well a product will help cool your building in the summer, warm your building in the winter, keep out wind, and resist condensation. By using the information contained on the label, builders and consumers can reliably compare one product with another, and make informed decisions about the windows, doors, and skylights they buy. Caution should be used when removing the label to avoid scratching the glass.

NFRC Temporary Label

Sample Label

NFRC logo indicates licensure by NFRC

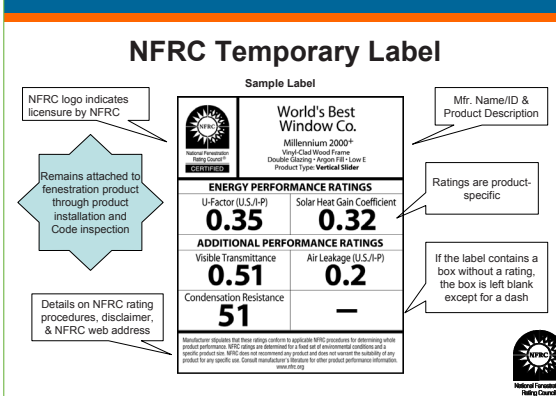
Remains attached to fenestration product through product installation and Code inspection

Details on NFRC rating procedures, disclaimer, & NFRC web address

Mfr. Name/ID & Product Description

Ratings are product-specific

If the label contains a box without a rating, the box is left blank except for a dash





There also should be a permanent label on the frame, somewhere out of direct sight but visible by opening the sash (window glass). This permanent label provides a record of how the window is designed to perform in wind and water testing. One of the criteria is the design pressure — how much wind and water pressure the window is designed to withstand.

U-Factor

U-factor measures how well a product prevents heat from escaping. The rate of heat loss is indicated in terms of the U-factor (U-value) of a window assembly. U-Factor ratings generally fall between 0.20 and 1.20. The lower the U-value, the greater a window's resistance to heat flow and the better its insulating value.

Solar Heat Gain Coefficient

Solar Heat Gain Coefficient (SHGC) measures how well a product blocks heat caused by sunlight. SHGC is expressed as a number between 0 and 1. The lower a window's solar heat gain coefficient, the less solar heat it transmits in the house.

Visible Transmittance

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 more light is transmitted.

Air Leakage*

Air Leakage (AL) is indicated by an air leakage rating expressed as the equivalent cubic feet of air passing through a square foot of window area (cfm/sq ft). Heat loss and gain occur by infiltration through cracks in the window assembly. The lower the AL, the less air will pass through cracks in the window assembly.

This rating is optional and manufacturers can choose not to include it.

Installation

While not all windows are equal, the importance of good installation is. The main reason for widow failure is incorrect installation. There are cases of faulty windows coming from the factory; however, incorrect installation far outweighs the incidence of manufacturer defects. If there is a problem with a window, it is important all instructions and warnings have been considered. Safety should always be the first consideration on any construction project. Two very important considerations when working with windows are breaking glass and working on ladders. Of course the worksite should be clear of trip-fall hazards as well as any hazardous materials or conditions.

Consider that windows are a part of the weather barrier on the exterior of your house. To maintain the water-tight integrity of the exterior, windows must be sealed to the rest of the exterior moisture membrane.

The materials you select for sealing windows to the whole-house moisture membrane need to be compatible and designed to meet the climate conditions and of course the manufacturer's instructions.

While budgets are important and cost is a key consideration, the final performance of your new windows will depend more on good choices and good installation than on low price. Choose your windows and contractors with energy efficiency, durability and comfort in mind.

Consider these things when selecting your windows:

- Look for dual glazed windows with inert gas and low-e films for best energy efficiency.
- Consider maintenance as part of the long-term value of your windows.
- Hinged windows are more energy efficient than sliding windows.
- Use either impact-resistant windows or hurricane-resistant shutters in high wind zones.
- Make sure windows are installed according to manufacturer's instructions.
- Check limitations on the warranty.
- Use licensed contractors.
- Follow manufacturer's guidelines for cleaning.
- Do not use razor blades to clean the glass.

For more information about:

- Windows and window labels, go to: <http://www.nfrc.org/>
- Wind zones, go to: http://rebuilding.road2la.org/en/family_home/home/design_construction/Laws+Licenses+Permits/Getting+a+Permit/Your+Wind+Zone/
- Selecting windows in Louisiana, go to: <http://www.efficientwindows.org/factsheets/louisiana.pdf>
- Why use Energy Star®, go to: http://dnr.louisiana.gov/sec/execdiv/tehasmt/programs/residential/energy_star/index.htm



More information available at www.LSUAgCenter.com/Rebuilding

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Visit our Web site: www.lsuagcenter.com/rebuilding

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