



Home Performance Guide Window & Door Replacement

Just as energy efficiency related items like HVAC systems and insulation have been subjected to more stringent requirements in the Florida Building Code over the years so have windows. Compared to a standard window in 1979 new Energy Star rated windows block approximately two thirds the amount of solar gain from the sun. This means that while they still let in light they reduce the amount of heat from the sunlight entering your home. This helps keep your home cooler and requires your air conditioning system to run less. The comfort, energy and noise reduction benefits that new Energy Star windows offer over old single pane, metal frame windows that were commonly installed in Gainesville in the early 1980s is significant.

Windows and doors come in so many different shapes, sizes and styles that choosing them is more a matter of preference and cost than anything. Just make sure they are rated as an Energy Star window or door for Florida. In many situations, sales representatives will state that the product is low-E. Low-E is a generic term that means it has a coating on the glass but does not designate to what level the coating is. Low-E windows are installed in Wisconsin and those windows would not fare well here in Gainesville. *Be sure they are Energy Star certified for Florida.* After that, the real keys to ensuring energy and durability are how they are installed. Since they can be expensive items, it's critical that they are installed, sealed and insulated properly.

Terminologies:

Operable and fixed Windows: Operable is any window that can be opened. These are found in each bedroom and most living spaces. Fixed is any window that cannot be opened. These are usually located in living spaces above operable windows or over doors.

French Door: A door that has a large pane of glass installed in it. These doors are often found in Pool Bathrooms and at locations leading to a lanai or patio. They are generally treated as windows when referring to energy efficiency.

U-Factor: The rating of a product's ability to transfer heat. The higher the U-Factor the faster a product will transfer heat. A lower U-Factor is desirable in all climates (The U-Factor is the inverse of R-Value).

SHGC: The Solar Heat Gain Coefficient is the rating of a product's ability to resist/reflect the heat from sunlight. In Northern climates a higher SHGC is desirable. In Florida a lower SHGC is desirable (SHGC is the inverse of reflectivity).

Rough Opening: Is the opening that is created during the construction of the home for a window or door that does not include any additional materials other than the structural material. This does not include drywall on the interior of the window opening or any exterior finishes like stucco or brick. It is the opening between the wood framing members or the concrete block used to build your home.

Fastener: The screws used to mount the window or door into the rough opening. There are different types of screws available for different types of materials. Not only do the screws grip the materials differently but they also are designed to support different amounts of weight. A screw used to hang drywall onto the wall is not sufficient to install a heavier material. Likewise, a screw intended for wood framing should not be used to install a product onto a concrete block wall.

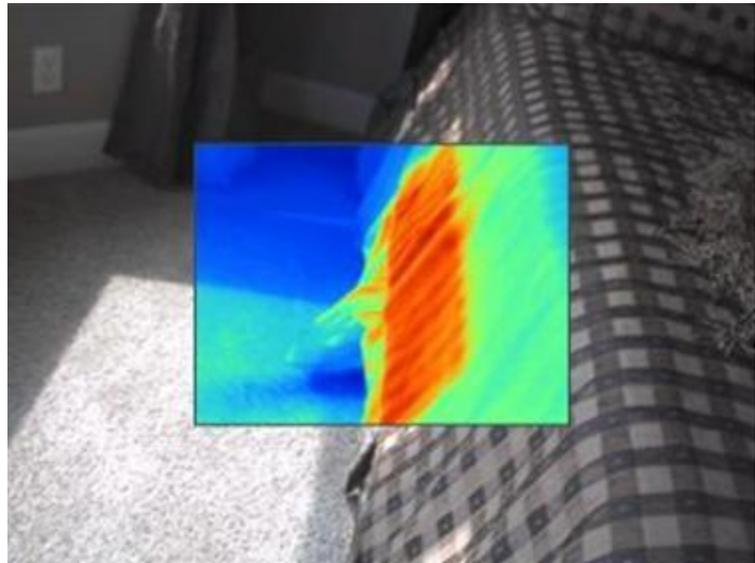
Substrate: The building material used to create the structural part of your home. Most commonly in Gainesville it will be wood framing or concrete block.

Weatherstripping: A rubber, vinyl, foam or other material formed into long strips that are placed around a door jamb. These strips ensure that a door makes a tight seal with the door frame when closed. There are different styles for various types of door frames. This low-cost item prevents water and air from entering the building.

Section 1: Type of Products

This is a basic data collection section for the installer to note what types of products and their specifications are being installed in the home. All windows and doors with glass in them should ideally have a testing sticker on them. This sticker is provided by the National Fenestration Rating Council (NFRC). This NFRC sticker indicates that the window from the manufacturer was rated for various specifications.

		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 window 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>			



NFRC label courtesy of www.nfrc.org

Sun coming through window and heating a bed.

The specifications include the U-factor and the Solar Heat Gain Coefficient (SHGC) for the window or door with glass assembly. The U-factor is the window's or door's ability to resist heat flow. It's the R-Value of the window but lower is better. This is an indicator of how quickly a door will transfer the heat to the inside of your home.

The SHGC is a window's or door's ability to reject the heat from the sun. Another way to say it is "it's the windows reflectivity to the sun's heat." The low-emissivity (Low-E) coating they put on the glass is what gives it this reflectivity. That's why most of us have heard the term low-E, but that's a very generic one. To ensure you have the proper window or door, be sure the SHGC value is right for Florida.

For both the U-factor and SHGC a lower number is better in Florida. Current Energy Star requirements for windows in Florida are:

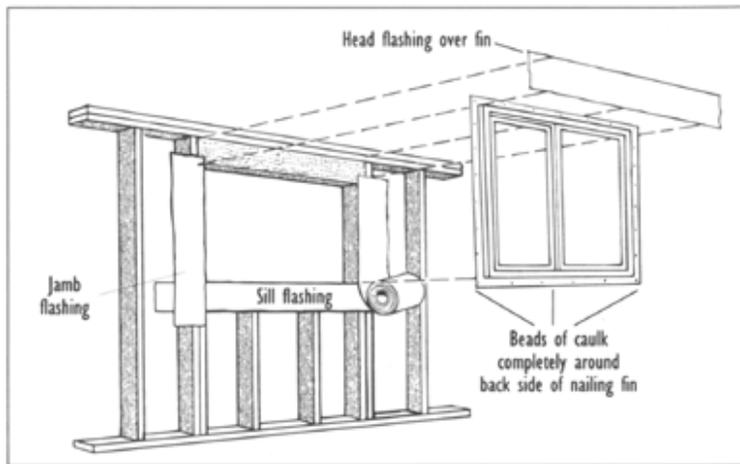
- U-Factor of 0.65 or less.
- SHGC of 0.27 or less.

The U-Factor will range more than the SHGC depending on the material that the frame is made of. Metal framed windows will have higher U-Factors typically in the 0.50 – 0.65 range while Vinyl framed windows will typically be in the 0.25 – 0.35 range.

If a windows or doors with glass does not have an NFRC sticker on it, it is in everyone's best interest to have the manufacturer's specifications for U-Value and SHGC for the specific product line available. This will ensure that the correct product that was purchased is being installed in the home.

Section 2: Installation

This section is a basic set of “best practices” for window and door installation. Several of the items are for both energy and durability issues. Ensuring that the window openings are properly flashed, frames sealed to the exterior of the home, and weatherstripping is installed in doors helps keep water outside and the cool air inside of the home.



An option for flashing a finned window assembly in a retrofit courtesy of Home Energy Magazine



No flashing applied to window rough opening

In nearly all scenarios there will be some gap between the old window/door opening in the wall and the new window/door assembly. These areas should be insulated and sealed. This can typically be accomplished by using expandable foam products in small areas, backer rod, or even installing fiberglass batt insulation in larger cavities. Without this insulation heat will flow from outside to inside more easily. One last item to consider when installing a new window/door is that the proper fasteners are used. This can vary depending on the type of construction of your home. A window or door assembly can be quite heavy and using the incorrect type of screw to mount the frame can result in the window/door not being fully secured to the wall.

Section 3: Notes

This section is for any additional notes concerning the installation process or product description. The installer may provide additional information about any issues encountered while installing the new product that may have prevented a best-practice from being followed.

Section 4: Homeowner Orientation

This section is a reminder for the contractor to review the checklist with the homeowner and discuss the new windows and/or doors installed in the home. This discussion may include proper operation of the new products (how to lock, unlock, tilt windows in if applicable, etc.), any future maintenance requirements that the homeowner may be responsible for, and any details concerning manufacturer & installer warranties.