

# Residential Window Energy Efficiency Checklist





## by Pure Energy Window Company

Most newly installed residential replacement windows are labeled with a NFRC sticker. The National Fenestration Rating Council, or NFRC, has developed and operates a uniform national rating system for the energy performance of fenestration products such as windows, doors and skylights.

The NFRC sticker is a great way to quickly evaluate a new window's overall energy performance. However, if the existing windows in your home do not have NFRC stickers, how do you determine their energy efficiency?

To aid you in this, we've put together a simple checklist of what energy efficiency information to look for on your existing windows depending on what indicators are currently available.



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# 1. Window Energy Performance Stickers

*Do the current windows have NFRC energy performance stickers?*



# Window Energy Performance Stickers

## Energy Star Stickers

Energy Star stickers indicate whether a particular window meets energy performance guidelines set forth by the U.S. Department of Energy. Guidelines are climate zone specific with each sticker containing a map indicating where in the country the window qualifies.

## NFRC Stickers

The NFRC sticker provides a snapshot of a window's overall energy performance. Each sticker indicates energy performance ratings in 4 categories; U-Factor, Solar Heat Gain Coefficient, Visible Transmittance, and Air Leakage. The NFRC stickers are used to compare one window to another as well as to determine energy code compliance in a given state.



## **2. Additional Energy Performance Indicators**

*Is there any other information on the current window performance?*



## Additional Energy Performance Indicators

### Manufacturer Literature

Most window manufacturers can provide a plethora of information about the existing windows in your home. You will need to first determine the window manufacturer by locating a label or etching on the window. Certain windows have an etching on the corner of the glass or a permanent label affixed to the head, side or sill of the window.

### Electrical Panel Certificate

Certain states require a certificate in or around the electrical panel indicating the energy efficiency of building components including the window NFRC ratings.



## **3. Visual Inspection**

*If there is no information available, what can a visual inspection of the windows expose?*





## Visual Inspection

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### How many panes of glass?

Windows have come a long way in the past 100 years. From single pane to triple pane, each layer of glass provides additional energy efficiency. Shine a light on the glass and count the reflections to determine how many panes of glass are in a particular window.

### What is the frame made of?

Like glass, window framing material has also evolved considerably over the past century. Steel or aluminum framed windows provide little to no insulation against the outside temperatures. There exist numerous State of the Art window framing materials that provide excellent insulation for your home.



## Visual Inspection

### Does the glass have a Low-E coating?

Windows with Low-E coatings have the ability to reflect long-wave infrared energy or heat. Low-E is a thin transparent layer of Silver MSVD that is painted on the inside of one to three panes of glass in each window. Have it tested with a Low-E detection device or by placing an infrared heat lamp on one side of the glass while feeling if the heat passes through to the other side.

### Proper weather-stripping

Proper weather-stripping compression around a window is crucial to a window's ability to keep Mother Nature out. Weather-stripping around a window provides a barrier against the outside elements while also keeping the bees and flies from invading your home. Examine the weather stripping around your windows to insure it is equally compressed on all four sides.



## **4. Assumed Window Energy Performance**

*If all else fails, what window energy performance can be assumed?*



## Assumed Window Energy Performance

If all else fails, there are a few assumptions you can make about a window's energy performance even if there are no NFRC stickers on the windows. The table to the right shows approximate U-Factor and Solar Heat Gain Coefficient values you can assume depending on the number of panes of glass and the type of framing material. These values are based on the International Energy Conservation Code and do not take into account features that you may not be able to verify such as Low-E coatings or gas filled glass.

U-Factor and Solar Heat Gain Co-Efficient Assumptions			
Frame Material	Assumed Value	Single Pane	Double Pane
Metal (e.g. Steel or Aluminum Windows)	U-Factor	1.20	0.80
	Solar Heat Gain Coefficient	0.80	0.70
Wood/Vinyl/Fiberglass or Composite Windows	U-Factor	0.95	0.55
	Solar Heat Gain Coefficient	0.80	0.70



## Assumed Window Energy Performance

As you can see, compared to Energy Star rated windows, the U-Factor and Solar Heat Gain Co-Efficient values are much higher than the U.S. Department of Energy recommended 0.30 value. Therefore, when energy performance cannot be easily determined, replacing the windows with new Energy Star rated units is strongly recommended.

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## About the Author

[Pure Energy Window Company](#) is dedicated to installing top-quality, innovative windows. Ever since opening our doors, our goal has been to provide superior quality products with unparalleled pure energy, and we're committed to that goal. Our products are continually improving while our business philosophy remains the same: *Quality, Performance, Service, and Support.*

We are a family owned and operated replacement window company servicing all of Southeastern Michigan and Lansing. Owners Matthew Masters and Adrian Beaver have taken their combined 35+ years of replacement window experience to create a better alternative for Michigan homeowners looking to replace their windows.

Pure Energy windows are constructed with the highest quality materials and are backed by a 50 Year Transferable Guarantee. As we continue to look into the future, we remain committed to installing top-quality, innovative products and providing value-added services to the communities we serve.

# Questions ?

[pureenergywindow.com](http://pureenergywindow.com) | 248.446.6100



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