

## FAMILY OF HIGH-PERFORMANCE GLASS

The glass area of a window is very important. By knowing something about the glass, you can determine a lot about the quality of the entire window. Since 75% or more of a window is glass, you would do well by choosing great insulated glass (IG) along with great windows.

### Here's what you'll find in all energySMART® insulated glass units:

- Either two or three panes of glass
- Patented treated steel U-shaped intercept spacer
- Low-E "stacked" (multiple layer coating) high performance glass
- Argon or krypton gas filling (optional)
- Sealant (bonds the glass to spacer)
- Desiccant (removes moisture from atmosphere between panes)



### New technology has revolutionized the way IG units are made.

When spacer frames are made the old way, four aluminum tubes and four plastic corner clips are used in each spacer assembly (as shown at top left). This method has been somewhat unchanged since the 1960's.

energySMART® IG units feature a new technology called "warm-edge" technology. Using a three-sided U-shaped, treated-steel spacer for better overall window performance, the three-sided spacer:

- **Folded at the corners, not cut.** One continuous spacer is used for each window. No open corners. No plastic corner clips.
- **Reduces heat loss.** The high quality treated steel spacer insulates five to fifteen times better than the same thickness of aluminum.
- **Structurally stronger** than its four-sided counterpart.
- **Flexes, when necessary.** The U-shaped channel allows for expansion and contraction. This flexing action promotes long term durability because of the lack of stress on the sealant.
- **More attractive** because you don't see a fourth side when you look through the window.



### energySMART® performs better overall.

What this means is that during winter, the inner pane of glass stays warmer to the touch. During summer, it stays cooler. This means energy savings whether heating or cooling, and less window condensation.



When condensation occurs on a window, it usually forms near the edge of the glass. That's because condensation always takes place on cool surfaces, and window glass is often cooler near the edges. The old way aluminum "tube" spacer which separates the panes of glass actually transfers the cold from the outer pane of glass to the inner pane. Warm edge technology, like energySMART, drastically reduces this problem.

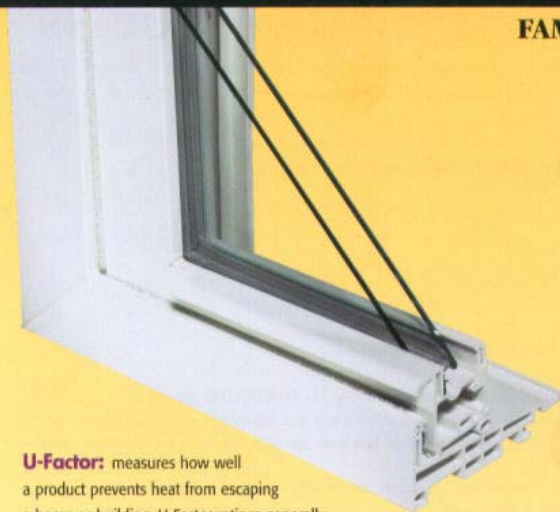
### We use only the tried-and-true, household name of PPG glass.



Glass Technology  
S I N C E 1 8 8 3

PPG GLASS TECHNOLOGY SINCE 1883 provides for the kind of long term reliability and performance we require in our products. PPG Soft-coat, low-E "stacked" glass increases thermal performance. This is where the low-E coating is put on in layers, improving thermal performance over the regular soft coat low-E. Unlike most hard-coat glass, our soft-coat, low-E glass has virtually no tint or haze. House plants won't mind the new windows one bit. Low-E stacked coatings are slightly darker.

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**U-Factor:** measures how well a product prevents heat from escaping a home or building. U-Factor ratings generally fall between 0.20 and 1.20. The lower the U-Factor, the better a product is at keeping heat in. U-Factor is particularly important in northern 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.

**Solar Heat Gain Coefficient (SHGC):** measures how well a product blocks heat from the sun. SHGC is expressed as a number between 0 and 1. The lower the SHGC, the better a product is at blocking unwanted heat gain. SHGC is particularly important in southern climates.

**Visible Transmission (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.

**UV:** a measurement showing how much of the harmful "fading" UV rays of the sun is blocked out.

**R-Value:** The commonly used measurement which determines the resistance of a material to heat flow. The higher the R-Value, the better it performs.



### CLEAR CLEAR

U-Factor	.50
Solar Heat Gain	.78
Visible Light Transmission	.82
UV	.63
R-Value	2.00



### CLEAR LOW-E STACKED ARGON FILLED

U-Factor	.25
Solar Heat Gain	.48
Visible Light Transmission	.72
UV	.16
R-Value	4.00



### CLEAR LOW-E STACKED LOW-E STACKED KRYPTON FILLED

U-Factor	.11
Solar Heat Gain	.39
Visible Light Transmission	.57
UV	.05
R-Value	9.09

*Data is based on Center of Glass calculations using window 4.1 thermal analysis program & NFRC approved spectral data & environmental conditions.*

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