



SEAL  SMART TM
GLASS SYSTEMS

By
VISTA[®]
WINDOW COMPANY

What is a Glass System?

For many years, windows were made with a single pane of glass. And while this pane of glass provided shelter from the elements and a view to the outside world, it provided modest insulation for your home, at best.

Scientists and engineers knew that in order for a window to provide true energy-saving insulation power (and remain clear and beautiful), it must combat all the sources of energy loss through the glass.

Hence, the creation of an Insulated Glass Unit, or “IG” unit.

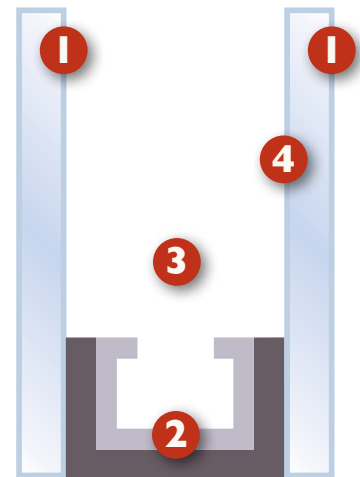
Insulated Glass Units secure two or three panes of glass together into an airtight unit, utilizing SPACERS to hold the panes apart and seal them together at the same time.

The other elements of an IG unit include Low-E coatings on the surfaces of the glass (to block certain IR and UV rays), and various INERT GASES (which are better insulators than air) used to fill the inside of the unit.

Collectively, this combination of glass panes, Low-E coatings, gas fills and spacers enhance the energy performance of your windows.

Vista Window Company has taken the IG unit to new levels by combining the right technologies into several different glass packages. This “family” of glass configurations constitutes a Glass System. We call it the Seal Smart Glass Systems and around here, it’s referred to as the Seal Smart “Family” of Glass.

Overview of Basic Insulated Glass Unit



1 Panes of Glass

2 Spacer

3 Gas Fill

4 Low-E Coatings

SEAL  SMART™
GLASS SYSTEMS

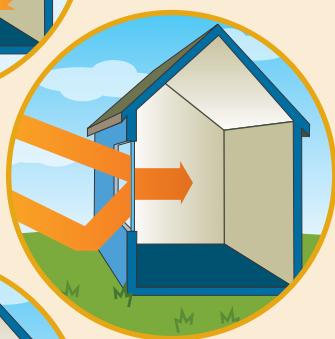
Choosing the Right Glass

U-Value, Solar Heat Gain, Visible Transmittance and Sound Transmission Class (STC) – these important factors should be weighed when choosing windows for your home. They all interact with one another to create a harmonious product that is right for you.

The key to choosing the right glass system for your home is to find the right combination of performance values to suit your needs. Your Authorized Vista Dealer can help you make these decisions. Our philosophy is that one size doesn't necessarily fit all, which is why we created the Seal Smart Glass Systems.



- 1 U-Value:** A measure of the rate of non-solar heat loss or gain through a material or assembly. Tests are usually performed under conditions which simulate 0° outside and 70° inside with a 15 MPH wind. The lower a U-Value, the greater a window's resistance to heat flow, and thus the better its insulating value. For actual U-Values, refer to charts on pages 8-9.




- 2 Solar Heat Gain Co-efficient (SHGC):** The fraction of solar radiation admitted through a window including what is absorbed and subsequently released inward. The lower a window's SHGC, the less solar heat it transmits and the greater its shading ability. Different climates require different SHGC values for maximum efficiency.



- 3 Visible Transmittance (VT):** This is the fraction of the visible spectrum of light weighted by the sensitivity of your eyes that is transmitted through the window. Simply put, it represents the amount of daylight that the window lets in.

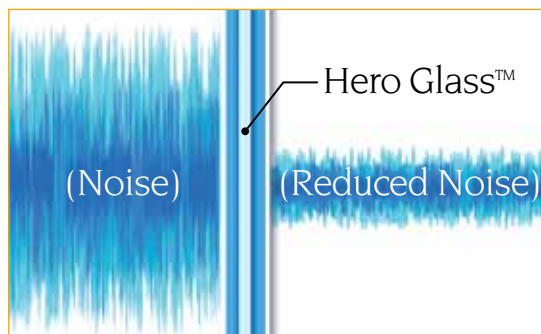
NFRC Label

All Vista windows are labeled with the NFRC energy rating label. Look for this label on your Vista window for exact energy performance ratings, which are based on the overall performance of the window.

 Vista Window Company PANORAMA SERIES Vinyl (VY) • Triple Glazed Low-E Krypton Gas • SILICONE FOAM SPACER Double Hung Window	
ENERGY PERFORMANCE RATINGS	
1 U-FACTOR (U.S./I-P)	2 Solar Heat Gain Coefficient
0.19	0.23
ADDITIONAL PERFORMANCE RATINGS	
3 Visible Transmittance	—
0.40	
<small>Manufacturer stipulates 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>	

STC Ratings

A window's sound-blocking ability is expressed as its STC (Sound Transmission Class). The higher the STC, the better. By adding a laminate glass pane like Hero Glass™ to your glass system you will increase the STC in your window providing you with a barrier to block sound.



Glass Systems for all climates.



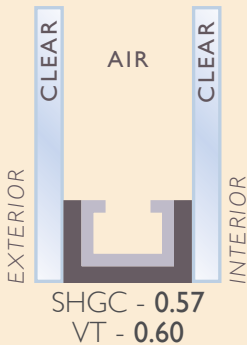
Inside your IG

Low-E coating is a microscopically thin, virtually invisible, metallic layer deposited on the glass surface primarily to reduce the U-factor (lower U-factor = better insulation) by suppressing radiant heat flow. Low-E coating is virtually transparent to the solar spectrum (visible light and short-wave infrared radiation) and reflective of long-wave infrared radiation. *When you order Vista windows with Low-E you get a double coating of Low-E as our standard. Other companies charge you more money for this option.*

Argon and **Krypton** are odorless, colorless, non-toxic inert gasses that can be used instead of air between panes of glass to increase insulation and energy efficiency. Argon is an excellent insulator, a good value and more readily available. Krypton is a more dense gas and therefore a better insulator in triple pane glass units.

Glass Systems

Vista Seal Smart Glass Systems offer numerous styles and options to fit all levels of energy savings and budgets. All Seal Smart glass packages are constructed using a full 1" overall Insulated Glass unit thickness.

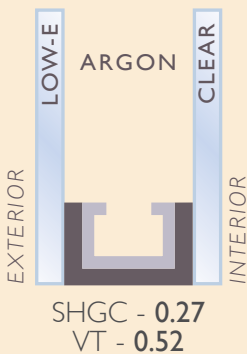


Seal Smart

The most basic type of insulated glass. This glass system is comprised of two pieces of clear glass with the space between the glass filled with air.

Seal Smart includes Intercept® Spacer as a standard feature.

Add Hero Glass™ to this system for added strength and superior sound-blocking ability. (see page 10)



Seal Smart Plus

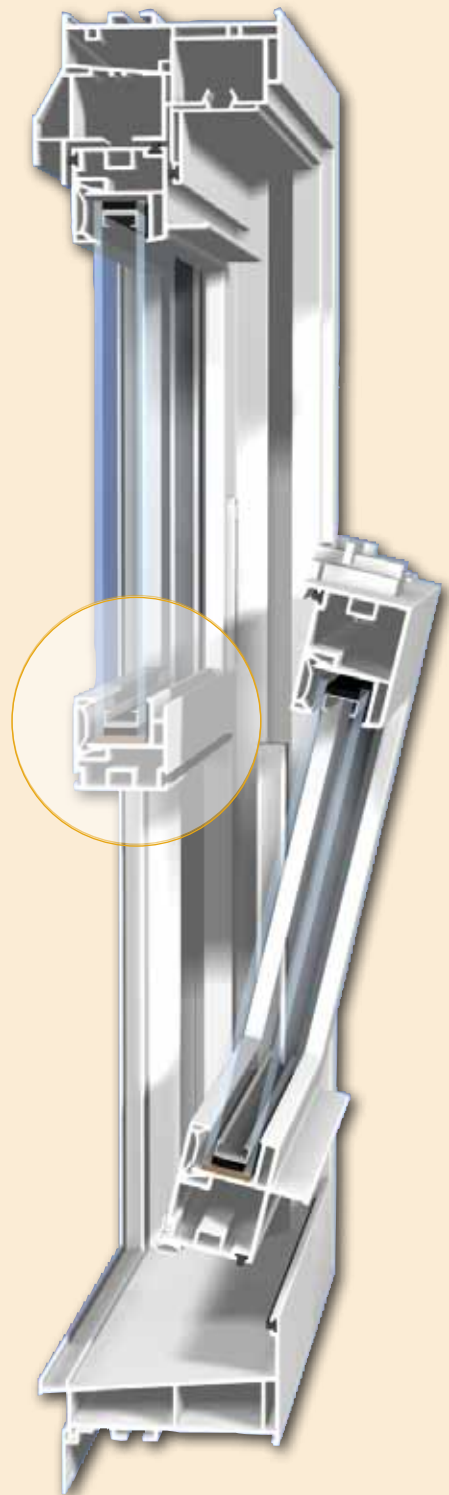
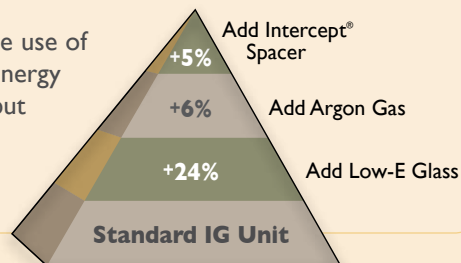
This glass package incorporates energy efficient technology by combining one piece of clear glass and one piece of Low-E glass with the space between filled with Argon gas.

Seal Smart Plus includes Intercept® Spacer as a standard feature.

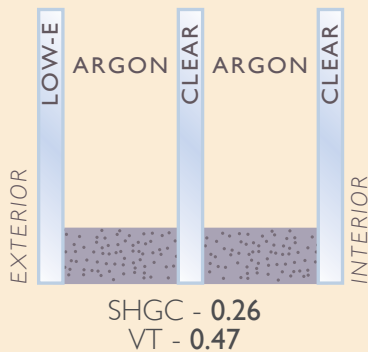
Add Hero Glass™ to this system for added strength and superior sound-blocking ability. (see page 10)

Window Performance Improvements

As you can see from the illustration, the use of Intercept spacers alone enhances the energy performance of your windows by 5%, but there are other options available to make your windows even better.



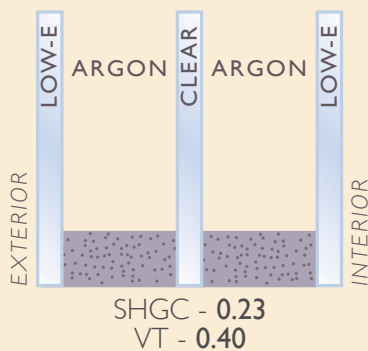
Additional Glass Systems



Seal Smart Triad A

Triad A glass system increases the energy savings of your window by adding a third pane of glass. This triple glass technology uses two panes of clear glass and one pane of Low-E glass creating two spaces in between that are filled with Argon gas.

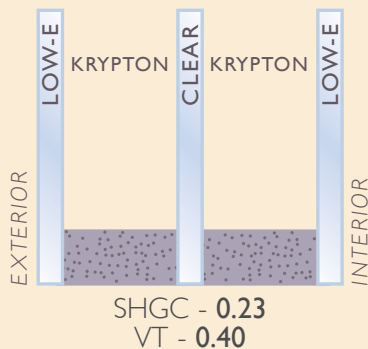
Seal Smart Triad A includes Super Spacer® as a standard feature.



Seal Smart Triad 7

Triad 7 takes triple glass technology one step further, utilizing two panes of Low-E glass and filling both spaces with Argon gas.

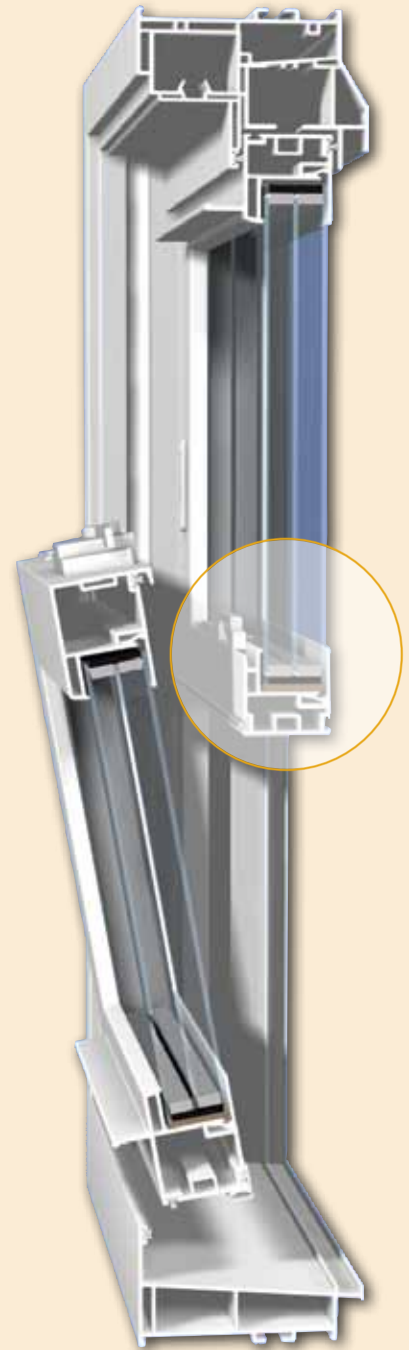
Seal Smart Triad 7 includes Super Spacer® as a standard feature.



Seal Smart Extreme

Extreme glass lives up to its name. Building off the Triad 7, Extreme fills both spaces with Krypton, a more dense gas, therefore an extreme insulator.

Seal Smart Extreme includes Super Spacer® as a standard feature.



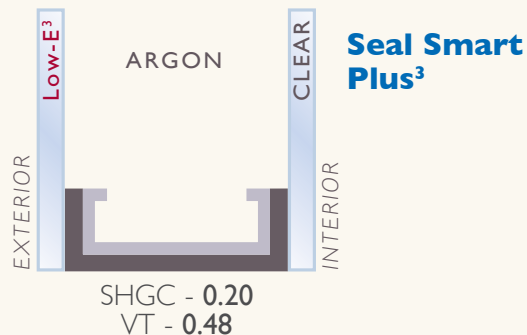
Low-E³ Glass Systems

The Glass Systems featured on this page build upon the basic systems, but switch out the basic Low-E with the Low-E³ Glass. This provides these systems with the highest levels of year-round comfort and energy savings, making them the perfect choice no matter where you live.

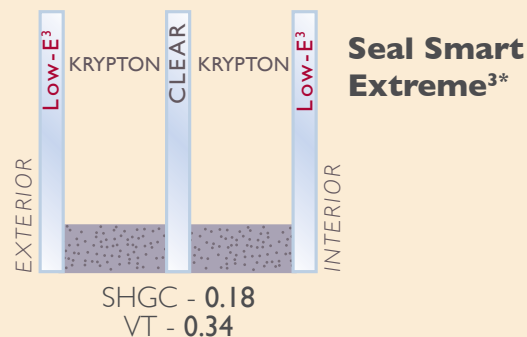
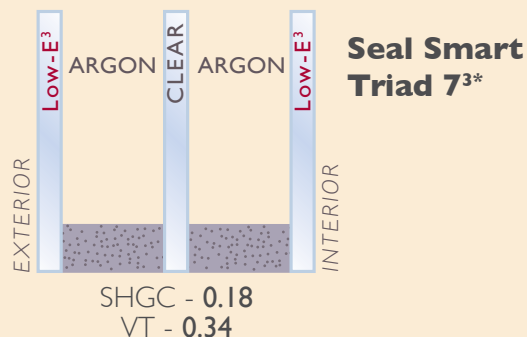
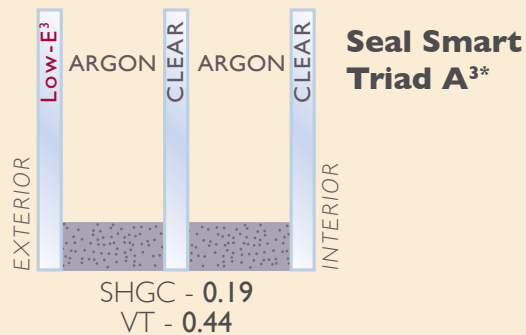
Low-E³ has been specially formulated to reject the sun's heat without affecting the view, delivering the ideal balance of solar control and high visibility by adding a third layer of Low-E silver coating. This third layer:

- Results in a clear coating that blocks even more solar gain
- Reflects heat and lets light stream in with a minimum of exterior reflectance
- Outperforms the tinted glass often used in warm climates

Low-E³ lets more light in and keeps more heat out therefore keeping the inside pane warmer in the winter allowing the relative humidity of the indoor air to be controlled and maintained properly. Low-E³ also provides excellent fading protection blocking 95% of the sun's damaging ultraviolet rays.



Add Hero Glass™ to this system for added strength and superior sound-blocking ability. (see page 10)



*Super Spacer® is standard.

Choosing Your Spacer

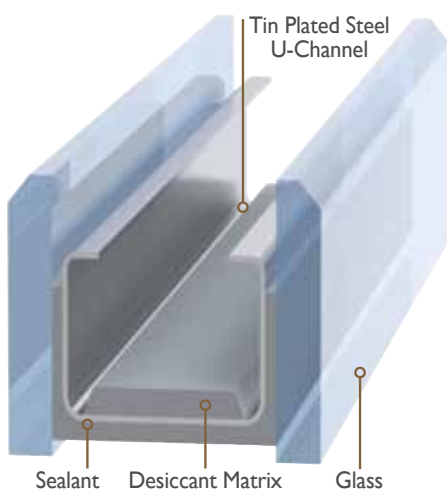
Choosing the right spacer option for your Seal Smart Glass System can equally impact the energy efficiency of your window. Vista offers three spacer options for you to choose from.

Intercept® and Intercept® Ultra Spacer System

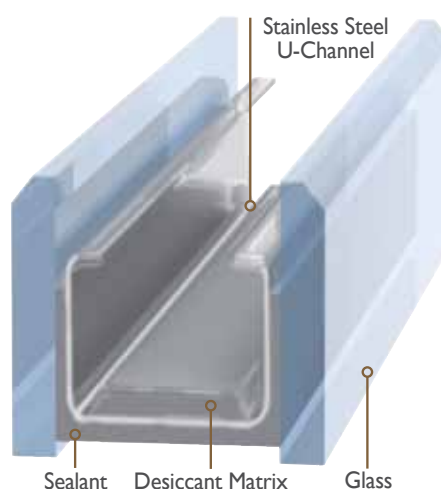
The performance of the spacer in the Insulated Glass (IG) unit is critical because it helps determine the energy efficiency of your window as well as its longevity. Since PPG introduced Intercept “Warm-Edge” Spacers in 1992, they’ve become, by far, the industry’s most trusted and proven spacer system. In fact, the Intercept Spacer System is now at work in more than 600 million windows in North America, a number that outpaces other window spacer technology.

Intercept is the default spacer system in all Seal Smart double pane glass systems.

Intercept® Spacer System



Intercept® Ultra Spacer System



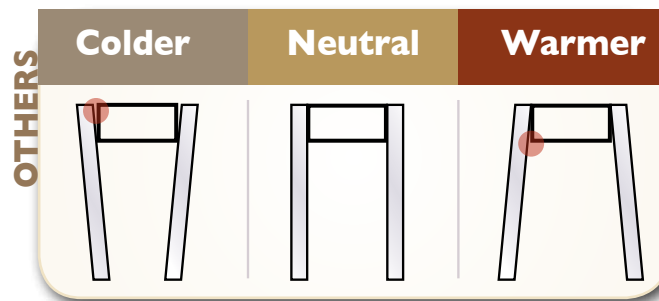
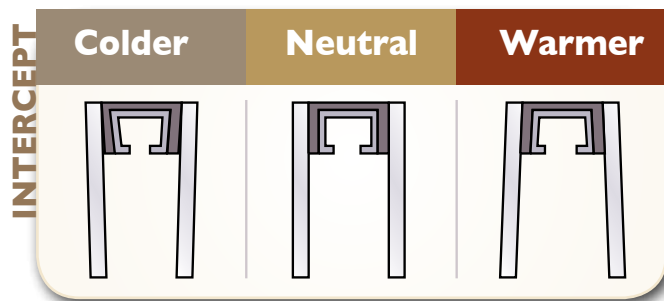
Overall Window	U-Value	SHGC	R-Value	Energy Star® Rating*
Seal Smart	0.47	0.57	2.13	None
Seal Smart Plus	0.31	0.27	3.23	NC, SC, S
Seal Smart Plus³	0.31	0.20	3.23	NC, SC, S

Overall Window	U-Value	SHGC	R-Value	Energy Star® Rating*
Seal Smart	0.46	0.57	2.17	None
Seal Smart Plus	0.30	0.27	3.33	All
Seal Smart Plus³	0.30	0.20	3.33	All

*Values are based on a double hung window with double strength glass and no grids. Actual values may vary based on window configuration.

The Intercept Difference

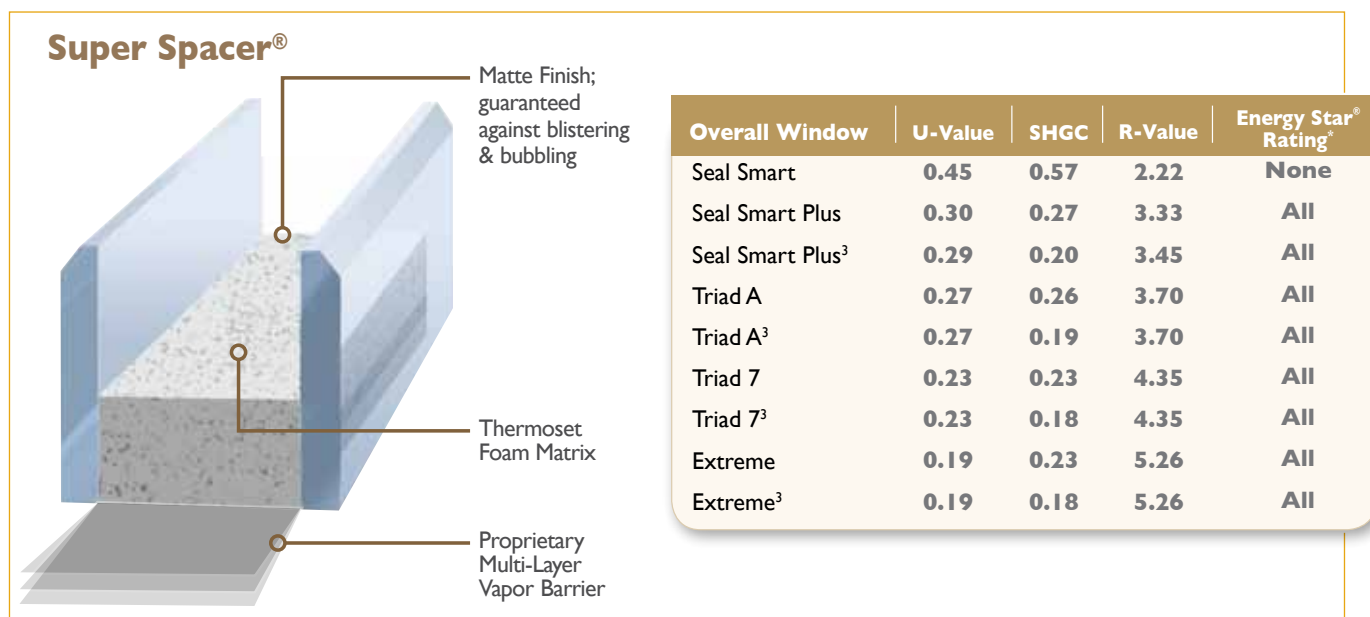
The “flexing” action of the U-channel design maintains the integrity of the sealant, drastically reducing incidents of glass failure.



Super Spacer®

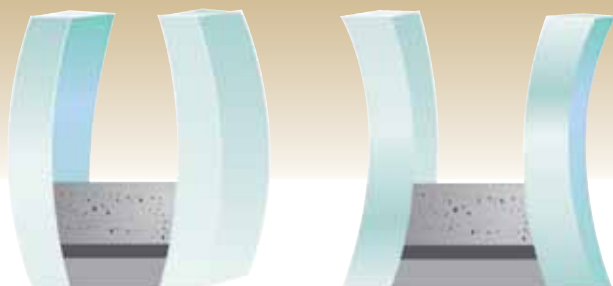
The edge of the insulating glass unit is the most vulnerable to heat and cooling loss, condensation and frosting. Super Spacer's NO-Metal formula blocks the heat escape path and provides one of the best thermal performances in the industry. That means it keeps the heat in during the winter and the cool in during the summer. Super Spacer® has superior insulating performance, reduces condensation and the chance of mold and bacteria growth.

These reasons are the foundation to why Vista incorporates Super Spacer® as a STANDARD in all of our triple pane glass systems.



*Values are based on a double hung window with double strength glass and no grids. Actual values may vary based on window configuration.

Stress Resistance



Super Spacer withstands stress that metal spacers can't.

It's easy to see why Super Spacer offers the best stress resistance available. Made with 100% thermoset structural foam construction, it remains flexible despite movement of the dual panes of glass due to stress from temperature fluctuations. Other spacers that are rigid eventually pull apart from the glass from this constant stress. Super Spacer's NO-Metal construction prevents any such worries.

Metal vs. Foam: The Inside Story on Condensation



Full Metal Box Spacer

With typical metal spacers, condensation is a fact of life that can be harmful and costly.



NO-Metal Super Spacer®

Patented all-foam design reduces condensation, for the clearest picture in warm-edge technology.

Introducing: Hero Glass™

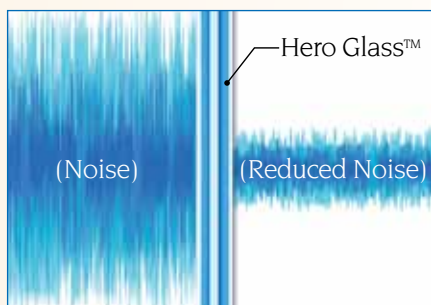


The Strong, Silent Type

A new laminated glass pane that protects against noise, airborne debris, forced entry and harmful UV rays.

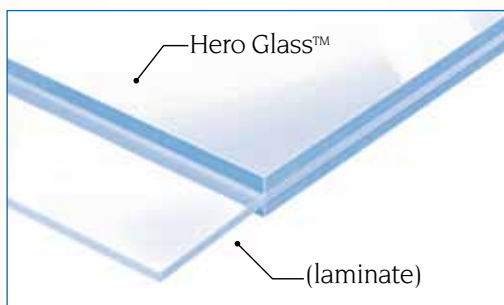
Hero Glass can be added to any of our double pane glass systems to give you increased comfort and security while still providing a clear view of the outside world.

Superior Sound-Blocking



For those homeowners living near an airport, busy highway or in an urban area we recommend adding Hero Glass which will increase your STC rating to a 33-34.

A Stronger Safeguard



A window is essentially a hole in your home, so strong glass is important to protect your family from the weather and intruders. Hero Glass is made with an inner layer of clear, PVB laminate and put through a special heating process, stiffening the pane so that it resists shattering much like auto glass.

More Insulating Power



Hero Glass is thicker than a normal glass pane, providing you with a better overall thermal rating, because it is harder for heat and cold to pass through the Insulated Glass Unit (IGU).

A window's sound-blocking ability is expressed as its STC (Sound Transmission Class). The higher the STC, the more sound is blocked. An STC rating is given on a logarithmic scale, meaning the higher the STC the harder it is to achieve an additional point on the Sound Transmission Class scale. To better understand an STC rating, a 45-50 is an STC rating for a sound proof recording studio. As shown here, a typical double hung window with a standard glass pack will have an STC of 25-27. All Vista Windows feature a 1" insulated glass pack, providing more dead air space, giving our double hung window with a standard glass pack an STC of 29, when you add Hero Glass the STC rating increases to a 33-34.

Item	STC Rating
Typical vinyl replacement window	25 - 28
Sound proof recording studio	45 - 50
Vista double hung window with standard glass pack	29
Vista single or double hung with Hero Glass added	33-34

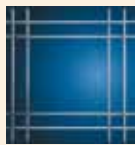
Additional Window Options

Besides being energy efficient, the insulating glass in your window should be beautiful, too. Vista offers a wide range of opportunities to customize your windows.

Etched Glass



Single Prairie



Double Prairie



Petal



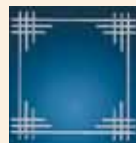
Marquis



Diamond



Tudor



Trellis



Florentine



Colonial shown

Custom Grids

Choose your grid type and pattern. Our custom color process matches all of our grids to our window frames.



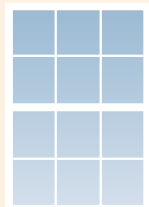
Flat



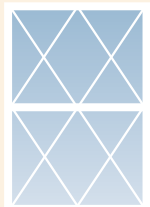
Contour

Grid Patterns

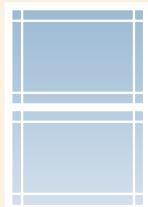
Give your windows a distinct personality by utilizing one of our most popular grid patterns shown below or ask about creating your own custom grid pattern.



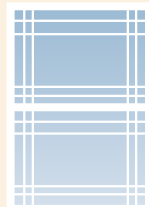
Colonial



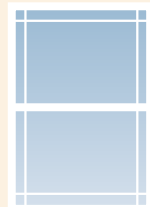
Diamond



Single Prairie



Double Prairie



Perimeter Prairie



Diamond shown

Decorative Blinds Between the Glass



Vista has mini-blinds available that are sealed inside the glass unit of your windows, giving you extreme control over the light you wish to enter the room at different times of the day. Very few window companies can offer this option.

EEE-Z-Kleen™ Process



Drops of water on EEE-Z-Kleen™ treated glass surface.

This protective glass treatment is factory-applied to all of the glass surfaces of your windows. It makes your windows hydrophobic, which means they become dust- and water-repellent and considerably easier to clean than regular windows. **This includes a Lifetime Accidental Glass Breakage Warranty when EEE-Z-Kleen is applied to the inside and outside of your window.**

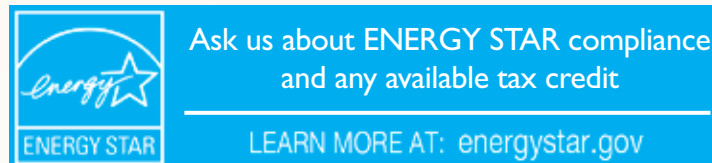
There are a lot of great windows produced in the world today (and to be honest, a lot of “not-so-good” ones as well). Vista created the Seal Smart Glass Systems with you in mind.

These systems provide you with the ability to choose what is best for your location, application and budget while still providing you with the ultimate in energy efficiency, insulation, durability and beauty. You aren’t just buying a window; you are purchasing an item that changes the function and aesthetic of your home.

At Vista, an overriding thought that is a part of our every decision is that, *“Each and every window that we manufacture is a part of someone’s home”* and we want nothing but the best for the families that choose Vista Windows.



vistawindowreplacements.com



ENERGY STAR is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy helping us all save money and protect the environment through energy-efficient products and practices.

***Vista window products can be configured to meet or exceed
ENERGY STAR requirements in all 50 states.***

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