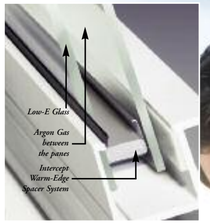
The benefits of the Intercept® Warm-Edge Spacer System.

The PPG Intercept® Spacer System features a unique, one-piece metal alloy, U-channel design that creates an effective thermal barrier to help reduce conducted heat loss through the window. Its sealed, one-piece design makes Intercept spacers stronger and better at retaining insulating gas than many conventional designs.



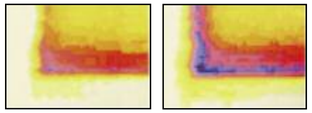
Comfortable rooms start with Intercept Spacers.

The Intercept Spacer System is so energy-efficient that it keeps the edges of the window glass warmer, so your home feels more comfortable in the winter. As you can see below, the temperature difference between the edge of an insulating glass unit with an ordinary spacer, and one with an Intercept Spacer System can be dramatic.

With Intercept Spacer

With Aluminum Spacer

I.G. units feature Intercept "Warm-Edge" technology that reduces condensation problems around the window perimeter. Compare the Intercept insulating glass window (above left) with a conventional insulating glass window (above right). Both windows have Low-E glass and argon gas infill. The difference is the Intercept Warm-Edge Spacer.

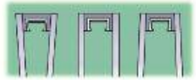


This thermograph or "heat picture" compares room side glass temperature for an I.G. unit with Intercept (left, yellow is warmer, blue is cooler), and a conventional I.G. unit (right). Since the I.G. unit with Intercept allows for significantly warmer glass temperatures, especially at the edges, your home will feel more comfortable.

Conditions: Cold side temperature = 0° F; Room side temperature = 72° F; Room side relative humidity = 25%

The Intercept Spacer helps your windows last longer.

Under normal weather conditions, insulating glass (I.G.) units expand and contract with temperature changes. In conventional I.G. units, the sealant (the material that holds the unit together) takes the stress of the flexing. This can cause seal failure and insulating gas loss. In an I.G. unit with the Intercept Spacer System, the spacer flexes instead of the sealant, so it resists spacer movement and premature sealant failure.



Colder Neutral Warmer

I.G. units flex instead of the sealant during temperature changes. So they resist spacer movement and sealant failure.

With conventional aluminum spacers, the sealant flexes, which can lead to sealant failure and loss of insulation ability.

This brochure is meant to educate on the general benefits of Low-E glass and argon gas when utilized in today's vinyl window products. Heating and cooling savings will vary per geographic region. The Efficient Window Collaborative (www.efficientwindows.org), PPG (www.ppg.com), ENERGY STAR (www.energystar.gov), and the NFRC (www.nfrc.org) provide information that will help homeowners to learn more about the benefits of energy-efficient window products. *Residential Windows: A Guide to New Technologies and Energy Performance*, third edition, also offers great insight for this subject matter.

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houzz

Made in the USA

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© 2016 Alside. Alside and ClimaTech are registered trademarks of AMI. Intercept is a registered trademark of PPG Industries. *Insulated Glass (IG) units that require capillary tubes may experience some argon gas depletion. †Source: www.nfrc.org. ‡Source: R-Value and Solar Heat Gain percentage based on an UltraMaxx (0601) double-hung whole window value. All specifications and designs subject to change without notice. Printed in USA 6/16 SMOP 75-0371-01

ClimaTech®

High-Performance Insulated Glass Package

Making your home more comfortable while helping to preserve the future of our environment.

For a change in scenery . . .

The best solution for capturing more light but keeping out the heat, cold and inclement weather is beautiful, energy-efficient Alside Windows. They combine the refinements of clean lines and tasteful architectural details with the performance of modern materials and construction. They'll add to your home's beauty and show off your landscape while maintaining the comfort of family members and friends.

. . . but with a dedication to the environment.

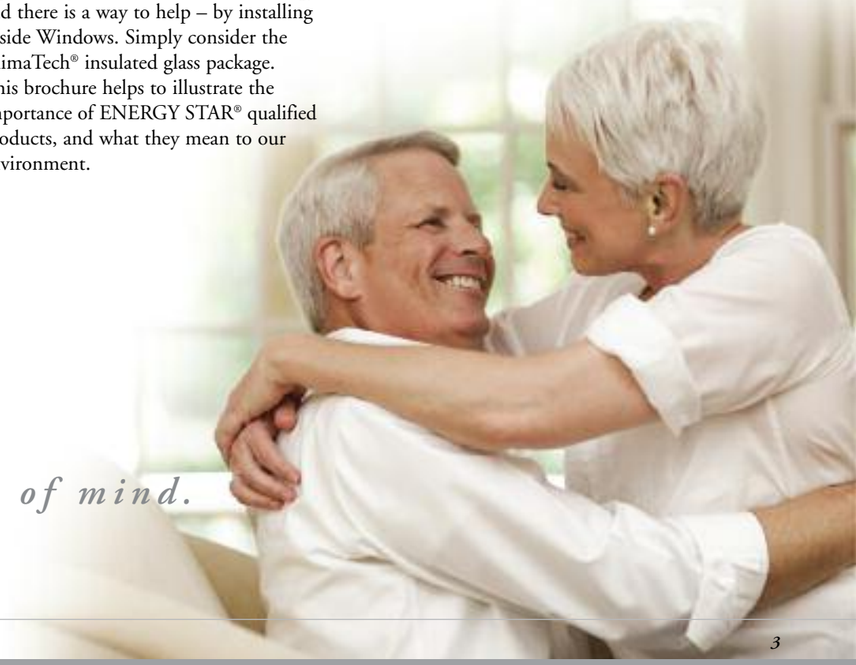
In today's world we need to look beyond just the aesthetics of our new windows. We find our environment captured by an increased focus on energy and there is a way to help – by installing Alside Windows. Simply consider the ClimaTech® insulated glass package. This brochure helps to illustrate the importance of ENERGY STAR® qualified products, and what they mean to our environment.

What's so important about Alside Windows with the ClimaTech insulated glass package?

ClimaTech improves the efficiency of windows in virtually every climate. In the winter, it lets in solar heat and holds the warm air inside. In summer, it repels heat and glare while filtering out ultraviolet rays which can fade carpet, furniture, artwork and painted or stained wood.

Argon gas is a colorless, odorless, nonflammable, nontoxic, and above all, safe inert gas that is heavier than air. When the air between two window panes is replaced with argon gas, the energy efficiency of the window increases. Additionally, it acts as a sound barrier to help make your home quieter.

By choosing Alside Windows with the ClimaTech insulated glass package, you can reduce your heating and cooling costs while at the same time making your home more comfortable.



Your solution for improved energy efficiency and peace of mind.

When purchasing new window products, homeowners should make special note of two things. The first is the window's performance ratings, and the second is if those ratings qualify the product for the ENERGY STAR program.

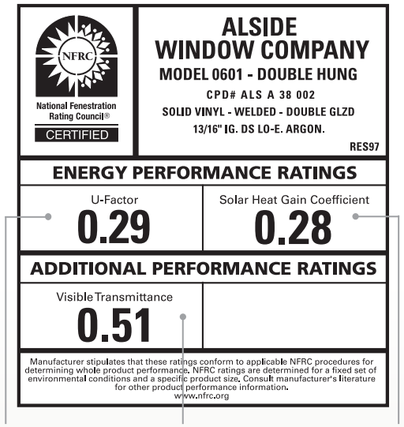
National Fenestration Rating Council.

The National Fenestration Rating Council (NFRC) has developed a window energy rating system based on whole product performance. The NFRC Performance Label provides the only reliable way to determine window energy properties and to compare products.

What is ENERGY STAR?

The U.S. Department of Energy and the Environmental Protection Agency developed an ENERGY STAR designation for products meeting certain energy performance criteria – helping us all save money and protect the environment by choosing energy-efficient products and practices.

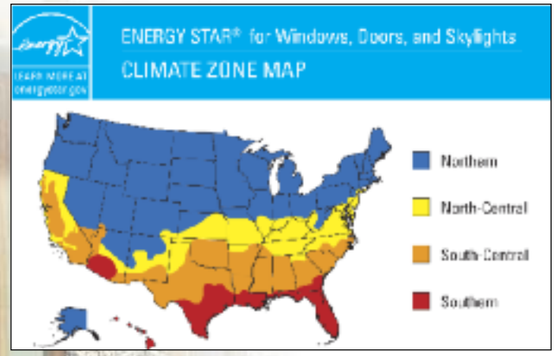
The ENERGY STAR program was established to help reduce greenhouse gas emissions and other pollutants caused by the inefficient use of energy and to make it easy for consumers to identify and purchase energy-efficient products that offer savings on energy bills without sacrificing performance, features and comfort. Products can earn the ENERGY STAR label by meeting the energy efficiency requirements set forth in ENERGY STAR product specifications.



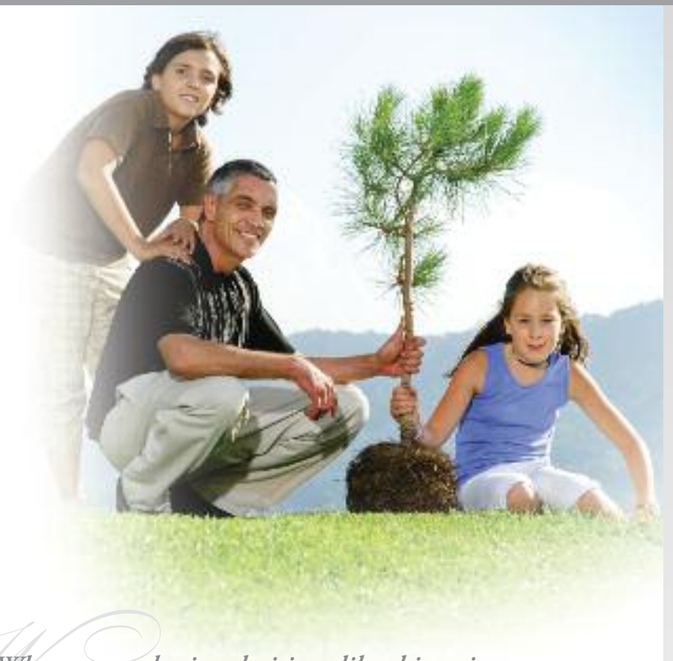
U-Factor
Most critical during heating seasons, the lower the U-Factor, the greater a window's resistance to heat flow or the greater its insulating value. U-Factor ratings usually fall between 0.20 and 1.20, with a lower U-Factor indicating that your furnace won't need to run as much, saving you money on heating costs.

Visible Transmittance
Most often displayed as a number between 0 and 1, Visible Transmittance (VT) measures the amount of light that is transmitted through a window. More specifically, VT is the portion of the electromagnetic solar spectrum that produces light that can be seen by the human eye.

Solar Heat Gain Coefficient
Most critical during cooling seasons, a lower Solar Heat Gain Coefficient (SHGC) means that less solar radiation is being admitted through your windows. Often indicated by a number between 0 and 1, a lower SHGC means that your air conditioner will not be required to operate as much.



ENERGY STAR Qualification Criteria	
Northern *(Zone 4)*	≤ 0.27 / SHCG = Any
North-Central *(Zone 3)*	≤ 0.30 / SHGC ≤ 0.40
South Central *(Zone 2)*	≤ 0.30 / SHGC ≤ 0.25
Southern *(Zone 1)*	≤ 0.40 / SHGC ≤ 0.25



Why are purchasing decisions like this so important to our environment?

If all residential windows in the U.S. were replaced with ENERGY STAR qualified products, we would save $7 billion in energy costs over the next 15 years – enough to light every home in the New York City metropolitan area.[1]

Alside Windows with the ClimaTech insulated glass package are good for the environment because they help reduce the amount of energy needed to heat and cool our homes. Most of our energy is produced by the burning of fossil fuels, which causes air pollution, smog and global warming.

Go Green

Exceptionally energy-smart and weathertight, Alside Windows not only reduce fuel consumption needed to heat and cool homes, they also boast a long service life and achieve optimal material use and minimal waste in production. Virtually all in-plant vinyl scrap is recycled into other useful products, further reducing the environmental impact of waste. Vinyl windows also are eco-friendly because vinyl resin is derived largely from common salt – a sustainable and abundant natural resource![2]

[2]*Source: A Clear View – Vinyl Windows and the Environment. American Architectural Manufacturers Association (AAMA) & The Vinyl Institute (VI).*

Did You Know?

Alside Vinyl Windows and Patio Doors . . .

- Are so durable that the vast majority of them installed over the past 25 years are still in use. At the end of their long, useful life – like all vinyl – they can be recycled.[2]
- Reduce electricity usage. A study conducted by Franklin Associates found that using vinyl over alternative framing options saves the U.S. nearly two trillion BTUs of energy per year – enough to meet the yearly electrical needs of 20,000 single-family homes.
- Vinyl can be reprocessed and recycled repeatedly. Scrap is routinely recycled into other vinyl products. In fact, 99% of the vinyl used by processors goes into a finished product.[2]
- More than eight million pounds of window profile waste is diverted from landfills annually thanks to successful buy-back programs initiated by window manufacturers like Alside.[2]

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Help Increase Your Energy Savings

Energy & Cost Savings[3]

Heating Season Savings

In climates with a significant heating season, windows can represent a source of unwanted heat loss, discomfort, and condensation problems. Recent years show that windows have undergone a technological revolution. Windows are now proven to lower heat loss, reduce air infiltration and have warmer glass surfaces that improve comfort and minimize condensation. In cold regions, this means that windows are no longer lacking energy-efficient capabilities – increasing glazing area with high-performance windows can have minimal or no affect on total energy use.

Cooling Season Savings

In climates that mainly require cooling, windows can represent a source of unwanted heat gain. Lately, windows with Low-E have proven to significantly reduce solar heat gain and improve comfort while providing clear views and daylight. In warm regions, though shading techniques remain important, high performance windows that experience direct sunlight will still offer optimal performance without increasing energy use.

Lower HVAC Costs[3]

High-performance windows not only help to reduce annual heating and cooling bills, they also reduce the peak heating and cooling loads. This reduction in peak load has benefits for the homeowner in that the size of the heating or cooling system may be reduced. But it also benefits the electrical utilities in that load factors are reduced during the peak times in summer.

The peak load for a building is the maximum load required for heating or cooling at one time. These loads determine the size of the furnace, heat pump, air conditioner and fans that must be utilized. The consumer can benefit directly from peak load reduction because heating and cooling systems can be sized smaller, often resulting in initial equipment cost savings.

Improved Comfort[3]

High-performance windows with new glazing technologies not only reduce energy costs but also help to make homes more comfortable.

Winter Thermal Comfort

An older window with a lower glass temperature feels colder because more heat is radiated from a person's body to the window. Cold glass can also create uncomfortable drafts as air next to the window is cooled and drops to the floor. This sets up an air movement pattern that feels drafty and accelerates heat loss. High-performance windows with lower U-Factors will result in a higher interior window temperature in winter and thus greater comfort. Proper installation along with weatherstripping designed to seal tightly (for operable windows) will also improve comfort by reducing cold air leakage.

Summer Thermal Comfort

In summer, strong direct sunlight strikes people and interior surfaces, creating overheating and discomfort. Windows with low solar heat gain coefficients will reduce the solar radiation coming through the glass and associated discomfort. Low solar heat gain Low-E glass (spectrally selective) reduces heat gain while still providing sufficient light and view.

[3]*Source: www.efficientwindows.org*

Low-E Glass – Making the Difference

ClimaTech… your solution for increased window performance.

Our optional ClimaTech insulated glass package combines multi-layered low-emissivity (Low-E) glass, argon gas* and the PPG Intercept Warm-Edge Spacer System. ClimaTech is up to 40% more energy-efficient than single or clear insulated glass systems.

Alside Windows with ClimaTech can exceed the performance requirements set forth by the U.S. Department of Energy in conjunction with the National Fenestration Rating Council (NFRC) test criteria.

One of the most critical NFRC tests measures the rate of heat loss through a window or door (U-Factor). The lower the U-Factor, the better the product is at resisting heat flow, resulting in a product with a greater insulating value.

Another critical NFRC test is for Solar Heat Gain Coefficient (SHGC). This procedure measures how well a product blocks heat caused by sunlight. Again, the lower the number, the less solar heat the window transmits into the home.

The performance of Alside Windows can be enhanced with the addition of various ClimaTech insulated glass packages.

Low-E glass filters long-wave radiation from the sun. This reduces solar heat gain from the summer sun, helping to keep your home cooler.

Low-E glass takes on a new duty in winter months. It lets warm solar rays into your home, while preventing indoor heat from escaping.

Performance Options

Make your home an energy miser. It's easy!

For maximum energy savings, upgrade your Alside Windows with a ClimaTech insulating glass package, featuring Low-E glass, argon gas and the PPG Intercept Warm-Edge Spacer System. The superior thermal performance of this insulating glass unit can help lower your energy costs while further reducing the consumption of fossil fuels. Many ClimaTech insulating glass packages meet the latest ENERGY STAR requirements. Consult your window professional for the optimal glass package required for your home and climate zone.

What makes the ClimaTech insulated glass package so effective?

Since 80% of a window is glass, substantial heating and cooling savings come from improved glass performance.

- Our combination of UV-filtering Low-E glass, argon gas and the Intercept Warm-Edge Spacer System dramatically enhances energy efficiency. Together they can cut the damaging effects of the sun, which can lead to the fading of carpets, curtains and furniture by an additional 76% over clear insulated glass units.
- In winter, a warmer glass temperature is maintained, increasing the R-Value by up to an additional 95%.[4]
- In summer, up to a 49% reduction in solar heat gain helps reduce air-conditioning usage.[4]

ENERGY STAR PARTNER

Alside offers a variety of ENERGY STAR qualified products. Consult your window professional for the optimal glass package required for your home and climate zone.

Offering You the Ultimate in Energy Efficiency

Out of the many different styles of homes we see every day, each one of them will have different heating and cooling requirements to enable the homeowner to achieve the utmost in year-round comfort. Just as the ENERGY STAR label depicts different heating and cooling requirements for northern and southern climates, a window also must prove to be versatile enough to be efficient in many different climate or seasonal situations.

That is why the ClimaTech insulated glass package relies on the many energy performance characteristics of Low-E glass. Shown below are three of the most critical performance requirements that should be considered when choosing an optionally enhanced glass unit for your new windows.

Improving a Window's Winter U-Factor Performance.

The U-Factor (also referred to as U-Value) is a number that represents the rate of heat flow through a glazing system. The lower the U-Factor, the greater a window's resistance to heat flow and the better its insulating value. This performance is critical to those homeowners who may experience increased heating conditions not only during the winter months but also in the fall and early spring.

Winter Furnace Heat

Standard clear unit
Conventional aluminum spacer
Air fill
Window U-Factor – 0.56-0.70[5]

Low-E glass unit
Intercept spacer
Argon Gas fill
Window U-Factor – 0.29[6]

A Solution for Solving the Solar Heat Gain Coefficient Dilemma.

The solar heat gain coefficient (SHGC) is a number that represents the fraction of solar radiation admitted through a window, both transmitted and absorbed, and subsequently released inward. The lower a window's SHGC, the less solar heat it transmits, which leads to greater shading ability. Climates that rely heavily on air-conditioning will benefit from a window product that displays a low SHGC.

Summer Solar Heat

Standard clear unit
Conventional aluminum spacer
Air fill
SHGC – >0.60[5]

Low-E glass unit
Intercept spacer
Argon Gas fill
SHGC – 0.28[6]

Reducing UV Energy While Maintaining the Visible Light.

Ultraviolet light (UV) are the invisible rays of the spectrum and are found in everyday sunlight. These rays of light are responsible for the fading of carpets, fabrics and even paint finishes. Visible light is simply the portion of the electromagnetic spectrum that produces light that can be seen.

Transmittances

Standard clear unit
Conventional aluminum spacer
Air fill
VT – >0.60[5]

Low-E glass unit
Intercept spacer
Argon Gas fill
VT – 0.51[6]

[5] *Source: www.efficientwindows.org. The thermal performance properties of specific glazings and frames can vary depending on product design and materials. The results presented here are averages. Consult specific manufacturers for NFRC rated U-Factors and SHGC for products of interest.*

[6] *Performance based on whole window values of an UltraMaxx (0601) Double-Hung Window.*