ClimaTech®

High-Performance Insulated Glass Package

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

Alside®

Choose Alside Window Systems with the ClimaTech® Insulat

One of the best solutions for capturing more light but keeping out the heat, cold and inclement weather is beautiful, energy-efficient Alside Windows.[1] They combine the refinements of clean lines and tasteful architectural details with the performance of superior technology and heavy-duty construction. Stylish and strong, this expertly crafted window system will enhance the appearance of your home as well as provide a more balanced and comfortable indoor environment year-round.

Increase your energy savings with ClimaTech insulated glass technology.

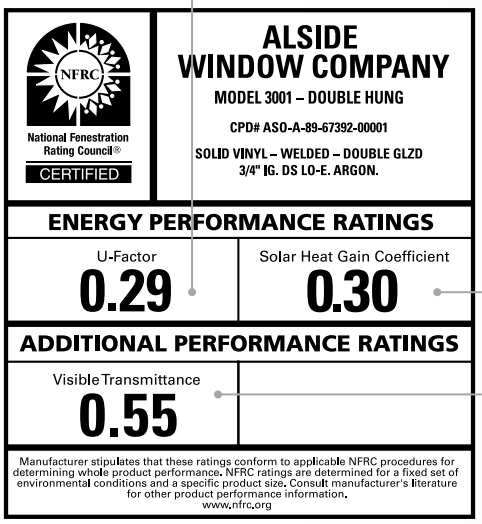
ClimaTech improves the energy efficiency of windows in virtually every climate. In the winter, it lets in solar heat and reflects the warmth back into your home. In summer, it repels heat and glare while filtering out ultraviolet rays to help reduce your air-conditioning use.

ClimaTech features multi-layer Low-E glass, argon gas[2] and the Intercept® Warm-Edge Spacer System for greater thermal performance. Argon is an odorless, colorless, nonflammable, safe inert gas that is heavier than air. Its greater density further reduces the heat exchange through the window for increased energy efficiency.

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 one of the most reliable ways to determine window energy-saving properties and to compare products.



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.

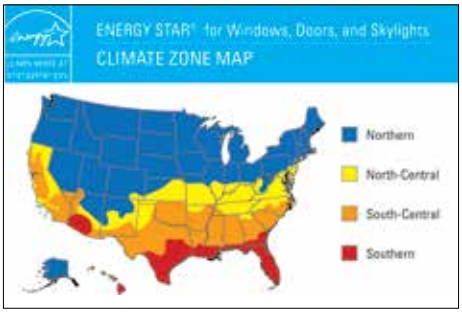
Solar Heat Gain Coefficient
Most critical during cooling seasons, a lower Solar Heat Gain Coefficient (SHGC) means that less solar radiation is being admitted through your windows. Often indicated by a number between 0 and 1, a lower SHGC can help reduce your air-conditioning needs.

Visible Transmittance
Most often displayed as a number between 0 and 1, Visible Transmittance (VT) measures the amount of light transmitted through a window. The higher the VT, the more visible daylight will brighten the interior of your home.

What is ENERGY STAR?

The U.S. Department of Energy and the Environmental Protection Agency developed the ENERGY STAR designation for products meeting stringent energy performance criteria – helping us all conserve fossil fuel consumption and protect the environment by choosing energy-efficient products.

The ENERGY STAR label certifies the products are a positive choice for energy efficiency, fuel savings and the environment, and helps consumers further save on energy costs without sacrificing performance, features and comfort.



ENERGY STAR Qualification Criteria	
Northern *(Zone 4)*	≤ 0.27 / SHGC = 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.[3]

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 strong and weathertight, Alside Windows and Patio Doors are masterfully crafted to provide energy efficiency and help conserve the consumption of fossil fuels for heating and cooling homes. They also boast a long service life and are produced with manufacturing efficiencies designed to reduce waste during production. As a recyclable material, in-plant vinyl scrap can be reused for other products, further lessening the volume and environmental impact of waste.

Help Increase Your Energy Savings

Precision-engineered for exceptional form and functionality, Alside windows with ClimaTech glass feature design innovations you'll appreciate from day one.

Energy and Cost Savings

Heating season savings.

In climates with a significant heating season, windows can represent a source of unwanted heat loss, discomfort, and condensation problems. Today's state-of-the-art windows are now proven to prevent heat loss and air infiltration and maintain warmer glass surfaces to improve comfort and reduce condensation. In cold regions, this means that even large windows with expanded glass areas can provide a strong thermal barrier against heat loss.

Cooling season savings.

In climates that mainly require cooling, windows can represent a source of unwanted heat gain. Windows with Low-E have proven to reduce solar heat gain and improve comfort while providing clear views and an infusion of natural light. In warm regions, though shading techniques remain important, high-performance windows that experience direct sunlight will still offer improved energy efficiency by reducing unwanted solar heat gain.

Lower HVAC Costs

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 benefits the homeowner because the size of the heating or cooling system may be reduced. It also helps the electrical utilities by reducing load factors during peak times in the 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

New glazing technologies in windows help reduce heating and cooling energy use, as well as create a more balanced indoor climate.

Winter thermal comfort.

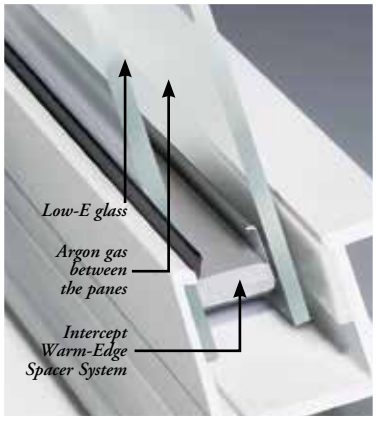
Windows with old glazing technology resulted in the interior surface of the glass being too cold. Cold glass can also create uncomfortable drafts as air next to the window is cooled and drops to the floor. This sets up an air movement pattern that feels drafty and accelerates heat loss. High-performance 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 sunlight and a clear view.

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

The Intercept Warm-Edge 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.



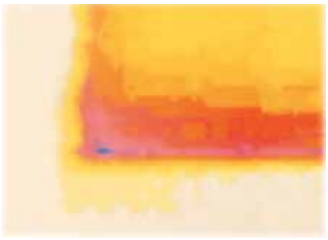
Comfortable rooms start with Intercept Spacers.

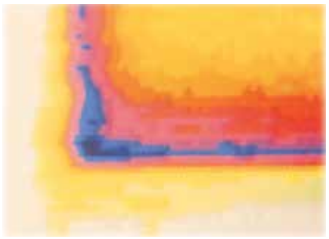
The Intercept Warm-Edge Spacer System's energy-efficient design keeps the edges of the window glass warmer, so your home feels more comfortable in the winter. As you can see below, the temperature difference between the edge of an insulating glass unit with an ordinary spacer and one with an Intercept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



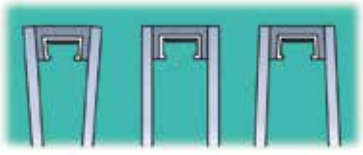


This thermograph or "heat picture" compares room side glass temperature for an I.G. unit with Intercept (left, yellow is warmer, blue is cooler), and a conventional I.G. unit (right). Since the I.G. unit with Intercept allows for significantly warmer glass temperatures, especially at the edges, your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

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

The Intercept Warm-Edge Spacer System 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 Warm-Edge Spacer System, the spacer flexes instead of the sealant, so it resists spacer movement and premature sealant failure.



The Intercept spacer in the I.G. unit provides flex during temperature changes, thereby keeping the load and movement off the sealant to help prevent seal failure.

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

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 Intercept Warm-Edge Spacer System. ClimaTech is significantly more energy efficient than single-pane 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 further 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 by slowing indoor heat from escaping.

Performance Options

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

For greater energy savings, upgrade your Alside Windows with a ClimaTech insulating glass package, featuring Low-E glass, argon gas and the Intercept Warm-Edge Spacer System. The superior thermal performance of these insulating glass units 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 and are certified for energy-saving performance.

What makes ClimaTech insulated glass so effective?

When you consider that windows are roughly 80% glass, you'll see why it's important to choose an energy-efficient glass system to seal off energy loss. Alside windows are precision-engineered for greater energy savings, keeping your home warmer in the winter and cooler in the summer with less energy use. Our combination of UV filtering Low-E glass, argon gas and the Intercept Warm-Edge Spacer System dramatically enhances energy efficiency.

Low-E (low emissivity) glass features a virtually clear, metallic coating that makes your windows more energy efficient by allowing them to transfer less heat.

- In winter months, Low-E insulating glass reduces heat loss by reflecting warmth back into your home.
- During the summer, Low-E helps block unwanted solar heat penetration to help conserve air-conditioning use.

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Alside offers a variety of ENERGY STAR qualified products. Consult your window professional for energy-efficient glass packages for your home and climate zone.

Offering You Exceptional 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 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 climates 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 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 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]

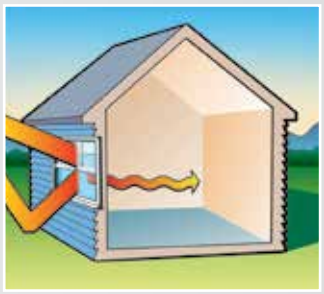
Low-E glass unit
Intercept spacer
Argon gas fill
Window U-Factor – 0.29[6]

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 – 0.30[6]

Reducing UV energy while maintaining the visible light.

Ultraviolet light (UV) rays 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 interior finishes. Visible light is simply the portion of the electromagnetic spectrum that produces light that can be seen.

Light Transmittance

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

Low-E glass unit
Intercept spacer
Argon gas fill
VT – 0.55[6]

Did You Know?†

- 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.
- 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.
- 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.

†The Vinyl Institute, www.vinylinfo.org/resources/diagrams-vinyl-resin-processing/ (accessed 1-21-21).

PROUD MEMBER FGIA Fenestration & Glazing Industry Alliance

NFRC National Fenestration Rating Council® CERTIFIED

INSULATING GLASS IGCC® CERTIFICATION COUNCIL

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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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 [1]See your Alside Sales Representative for additional information regarding any questions you might have, or any assertions herein, concerning energy efficiency or savings. Energy savings will vary. [2]Insulated glass (IG) units that require capillary tubes may experience some argon gas depletion. [3]Source: www.nfrc.org. [4]Source: www.nfrc.org. [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 a Mezzo (3001) Double-Hung Window. All specifications and designs subject to change without notice. Printed in USA 05/22 1.5M/OP 75-0371-01