



ENERGY EFFICIENCY



Windows have played an important role in home design for centuries. Historically, window development focused on the right balance between the benefits of natural light and ventilation and the disadvantages of cold drafts, water leakage, and the extensive maintenance of early window designs.

Traditionally, energy use was minimized by the design and setting of a home related to the environment it was built in. Trees were used to buffer cold winds, or to shade the heat of the summer sun. With the advent of powerful heating and cooling systems in the 1950's and 60's, and relatively inexpensive energy, home design strayed from the concerns about energy efficiency. The energy crisis of the 1970's created a new generation of manufacturing and construction methods that focused once again on a home's energy needs.

Today, a new standard of energy efficiency is required. The Renewal by Andersen® window replacement process helps meet these new standards with product technology and installation methods that will help solve our environmental and energy challenges while standing up to the test of time.*

Energy efficiency - Always compare whole window performance and not just the individual components.

Whole window performance

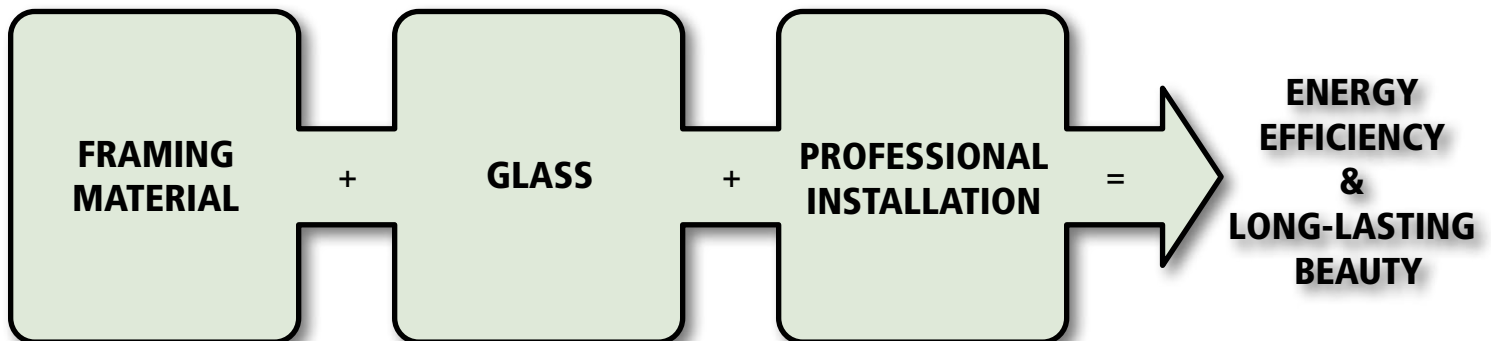
While individual components contribute to energy efficiency, it's whole window performance that's most important.

Renewal by Andersen® windows will help you save money on your energy bills. Many companies tout specific features of their window components when discussing energy efficiency. Renewal by Andersen focuses on the big picture—the whole window performance. We pay particular attention to the window frame and glass—critical components for energy efficiency. We also place enormous significance on complete, professional installation, and warrant it in writing—because a good window can only perform well if it's installed correctly.*

At Renewal by Andersen, we believe our outstanding whole-window performance is the result of:

- Framing material
- Glass
- Professional installation

When you choose Renewal by Andersen window replacement, you will enjoy many years of indoor comfort, low-maintenance and energy efficiency.



FRAMING MATERIAL

makes a difference

Andersen® products and patents have revolutionized the window and door industry for more than 100 years. We know windows and window materials.

In 1958, Renewal by Andersen’s parent company Andersen Corporation, tested and rejected aluminum as a framing material. It conducted heat and cold, plus it could pit and corrode. Also in the 1950’s, Andersen developed the first hollow vinyl window in the U.S. We liked the low maintenance feature of vinyl, but concluded that it didn’t have enough structural integrity. In 1966, Andersen created the “wood-clad” window and door category with the Perma-Shield® line of products.

In the 1970’s, Andersen began experimenting with reclaimed wood fibers. In 1991, after decades of development and testing, Andersen patented and introduced Fibrex® material, a composite of wood fibers and polymer. Fibrex material combines the strength and stability of wood with the low-maintenance benefit of vinyl. Renewal by Andersen windows made with Fibrex material also meet the strictest indoor air emission standard in the U.S.* and contain certified recycled content.**

GLASS

there’s more than meets the eye



At first glance, all window glass may look the same. But not all glass performs the same.

Renewal by Andersen offers three different glass options:

- High-Performance™ Low-E4® glass
- High-Performance™ Low-E4® SmartSun™ glass
- High-Performance™ Low-E4® Sun glass

While it can be hard to see the differences in our glass, you will appreciate them. Each glass option provides a varying degree of four unique benefits for heating, cooling, visible light transfer and ultraviolet (UV) protection. The right glass solution for you depends on the climate you live in, the architectural design of your home, the orientation of your windows to the sun, and the “custom climate” you desire in your home. “Glass coatings” are used to create the different glass characteristics.

Glass coatings: All of our High-Performance Low-E4 glass features a specially designed glass coating system utilizing state of the art coating technology. On the glass exterior, metal oxide coatings are applied to make the surface easier to clean and reduce water spotting up to 99% when activated by sunlight. This exterior coating causes the water to sheet off the surface. On the inside surface of the exterior glass a light (inside the airspace), spectrally selective multi-layer low emissivity (Low-E) coating is applied. This coating has more layers than standard Low-E coated glass, allowing the system to let in the sun’s rays that are desirable, while reflecting those that are not. This coating maximizes the visible light that comes through, while reducing undesirable solar heat gain that can make you uncomfortable. This Low-E coating bounces the heat back where it comes from. In winter, that means your heat stays inside. In summer, heat from the sun gets bounced back outside.

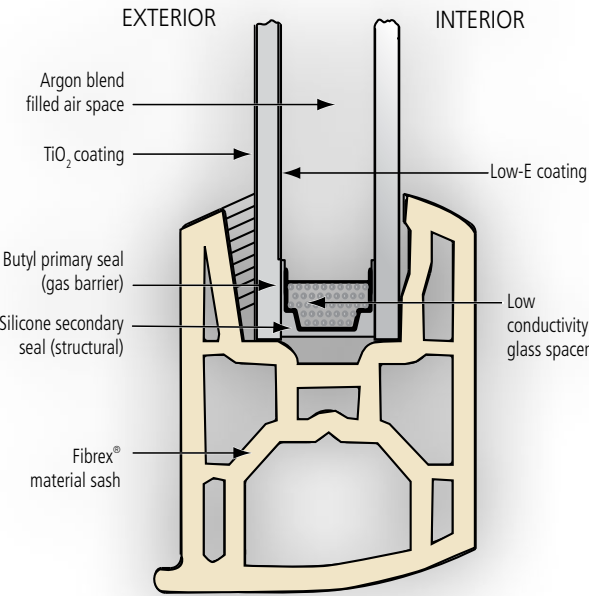
High Performance™ Glass Options Center of glass performance data:			
	HP Low-E4®	HP Low-E4® SmartSun™	HP Low-E4® Sun®
U-Factor	.25	.24	.25
% of solar heat passing thru the glass (SHGC)	42%	28%	26%
Visible light transmittance through the glass (VT).	72%	65%	40%
Ultraviolet rays blocked by the sun.	84%	95%	84%

Glass options: High-Performance™ Low-E4® glass is our standard offering. High-Performance Low-E4 glass is 45% more energy-efficient in winter and 56% more efficient in summer compared to ordinary dual pane glass.* Depending on where you live, that can cut your energy bills up to 25%**. High-Performance™ Low-E4® glass blocks 84% of harmful UV rays.

High-Performance™ Low-E4® SmartSun™ glass is the most energy-efficient glass option we have ever offered. High-Performance Low-E4 SmartSun™ glass is 47% more energy-efficient in winter and 70% more efficient in summer when compared to ordinary dual pane glass†. It has our highest efficiency rating in cool weather and is exceptional in hot climates where solar heat gain can lead to excessive air conditioning expense. SmartSun™ glass blocks the sun’s heat, while letting in almost as much natural daylight as clear glass, reducing your need for artificial lighting. What’s more, SmartSun glass blocks an amazing 95% of harmful UV rays which helps reduce fading on your carpet, drapes, artwork and furniture but has virtually no effect on the clarity or color of the light that enters your home.

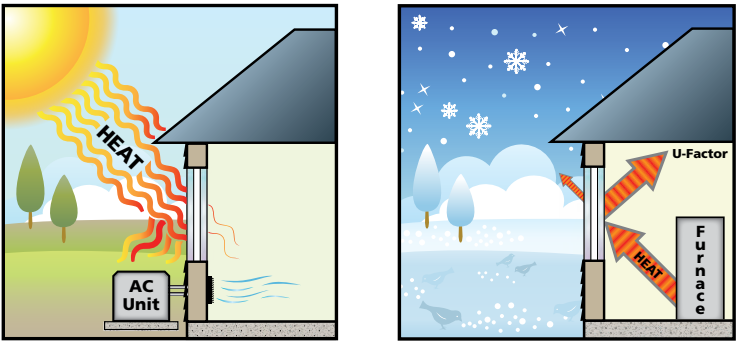
High-Performance™ Low-E4® Sun™ glass offers our highest rating against solar heat gain coming through your glass, helping keep your home cooler in warm weather. Our Sun glass has a tint coating applied,*** reducing the amount of visible light and sunshine streaming in from too bright to just right!

Cross section of a Renewal by Andersen sash



Spacer: Renewal by Andersen uses a low-conductivity spacer made of stainless steel that resists heat transfer better than aluminum spacers used by other manufacturers. Also, because stainless steel is so much stronger than aluminum, our stainless steel spacer can use less material and still keep the glass stable. A thinner spacer wall conducts less energy. An inferior spacer may move, causing seals to break. Some window manufacturers even use plastic for their spacers. Plastic can deteriorate over time, causing seal failure. Plastic spacers may also emit a gas when heated by the sun, which can cause a chemical fog between the two panes of glass and affect visibility.

Argon gas blend: Manufacturers first started using double glazing back in the 1950’s. At first, manufacturers used only air between the panes, and many still do. In the 1970’s, some manufacturers used carbon dioxide and Freon. These gases improved insulation value, but proved sensitive to seal failure and could easily discolor. In the 1980’s, argon and krypton proved to be more efficient for fill. Krypton is much more expensive and only marginally better at insulating than argon. Manufacturers of better double-pane glass products fill the space with an inert argon gas blend which can improve the thermal performance of the overall product, but on a much smaller scale compared to the benefit of the Low-E coating.



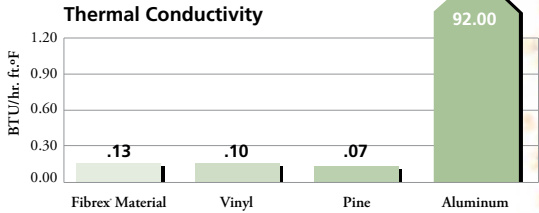
Warm Weather Performance

Cool Weather Performance

Double glazing: Two panes are better than one pane. Optimizing the width of the air space between the two panes of glass is important. When there is not enough space between the two panes of glass, the benefit of the air space diminishes and reduces the energy efficiency. If the two panes of glass are too far apart, convection can occur within the space, which provides a means of increasing heat loss instead of reducing it. Renewal by Andersen optimizes the space between the two glass panes for the best thermal performance.

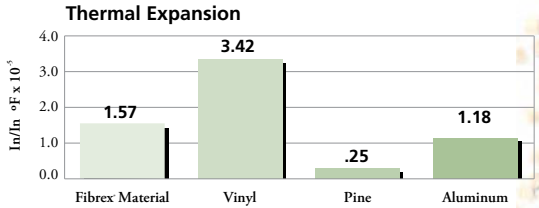
* Values are based on comparison to U-Factors and SHGCs for clear glass non-metal frame default values from the 2006 International Energy Conservation Code (IECC).
** A study of identical homes comparing Low-E to ordinary dual-pane glass showed a 25% savings on cooling bills, 10% on heating. Savings may vary geographically.
*** Exterior tint may vary from unit to unit.
† Values are based on comparison of Renewal by Andersen® double-hung insert window SHGC to the SHGC for clear glass non-metal frame default values from the 2006 International Energy Conservation Code.

Fibrex® material performance comparison



An excellent insulator

Fibrex® material has excellent insulating properties on par with wood, vinyl or fiberglass. Aluminum, on the other hand, transfers heat out of your home and allows outdoor cold temperatures to chill the window areas inside. Fibrex material insulates about 700 times better than aluminum.



Durable and reliable

Fibrex material, like wood, fiberglass and aluminum, expands and contracts very little. Vinyl, however, can expand and contract a lot, which if not designed properly may cause cracks, bowing and leakage of air and water. Windows made of Fibrex material will perform better in winter and summer than windows made of vinyl.

* Renewal by Andersen and its parent company, Andersen Corporation, are the only window companies to receive Scientific Certification Systems (SCS) Indoor Advantage Gold™ certification for indoor air quality. This level of certification conforms to the criteria of a number of North America’s indoor air emission standards, including the California 01350 standard, recognized as among the strictest in the U.S.
** Renewal by Andersen windows have certified recycled content values range from 19%–23% and vary by product line.

INSTALLATION completes the picture

Dual Seal: Renewal by Andersen secures the two panes of glass with two sealants: a compressed butyl and a specially formulated silicone. We also remove the Low-E coating around the embedded glass edge to make sure the sealant has a clean surface to adhere to. Other manufacturers leave the coating around the edge which contributes to seal failure. Our precise sealing process helps provide a longer life for the windows, preventing moisture from leaking in between the double glazing and providing a more robust seal. As a result, the seals in the glass of Renewal by Andersen products are much more durable than that of others in the industry. In fact, our glass is in a class of its own. That's real value!

Long term glass performance.

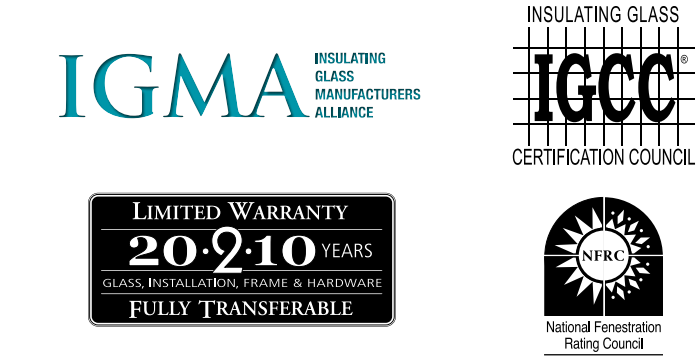
Renewal by Andersen uses only glass constructions certified for durability by the world's leading organizations on the engineering and manufacturing of insulating glass. Our experience and research allows us to stand behind our glass with a non-prorated 20 year warranty* – one of the strongest warranties you will ever find. We make our warranty freely available on our website, in our showrooms and for the asking from our sales representatives. As you read our warranty, you will find that it is not riddled with the fine print and exceptions you often see from other window companies. The Renewal by Andersen warranty is real and matches our confidence in the long term performance you can expect from an industry leader in window replacement.



A window must fit well in the opening to provide long-term performance and energy efficiency. Renewal by Andersen® replacement windows are custom made to precisely fit each window opening in your home, and they are installed by professional Renewal by Andersen installers.

Improper installation can easily occur if an installer cuts flashing incorrectly, uses the wrong sealant or does not insulate between the window and rough opening. Rough handling during transportation or installation can compromise the seal of the glass to the frame. Any of these things and more can keep your window from performing to the product's fullest performance level.

We consider installation so important to a window's performance that we back it in a written limited warranty. For a copy of the Renewal by Andersen 20/2/10 Year Limited Warranty, ask your sales consultant or visit www.renewalbyandersen.com.



Our window manufacturing process labels each customer's window with its own identification number and our toll-free number. If service is ever needed, call our toll-free number or your local Renewal by Andersen showroom.

* For a copy of the Renewal by Andersen 20/2/10 Year Limited Warranty, contact a sales representative.

NFRC–Rating energy efficiency



SAMPLE

To help homeowners, in 1992 the National Fenestration Rating Council (NFRC) established an independent 3rd party rating, certification and labeling program for windows, doors and skylights (fenestration products). Renewal by Andersen displays the NFRC label on all its windows. The NFRC label shows the whole window U-Factor, Solar Heat Gain Coefficient (SHGC) and Visible Transmittance. This label means that the entire window unit has been rated and certified, not just the center of the glass or individual components.

U-Factors, Solar Heat Gain Coefficients, Visible Light Transmittance and R-Values

U-Factor measures heat loss. The lower the number, the less heat loss through the window or door. When comparing window and door products, look for NFRC certified U-Factors to indicate the total unit product performance (glass, sash and frame). When comparing windows, a lower U-Factor means better insulating quality. U-Factors generally fall in the range from 0.20 (most energy efficient) to 1.20 (least energy efficient).

Solar Heat Gain Coefficients (SHGC) measures how well a product reduces heat gain. Ranging from 0 (no heat gain) to 1 (maximum heat gain), the lower the SHGC, the less heat gain is transmitted through the total unit. Low SHGC products can reduce air conditioning load in the summer and make you more comfortable.

Visible Transmittance measures the percentage of light that is transmitted through the total unit. Ranging from 0 (no light) to 1 (maximum light), the higher the number, the more visible light from the sun is let through the product. As the width of the frame of a window or door affects the light transmittance through the opening, it is important to look at the NFRC certified visible transmittance rating.

R-Value primarily measures resistance to heat loss. R-Value is most often used to measure the resistance to heat loss of homogenous (the material is the same throughout) materials. While R-Value has been used to describe the energy performance of a window or door it is really more applicable to materials such as insulation.

Compare windows to windows. NFRC-certified U-Factors are the only measure of whole window thermal performance. That's why the NFRC label is so important, and why it's important for you to compare the NFRC labels from one window to another. The NFRC label—and an ENERGY STAR® qualification—helps you know which windows perform better in your area of the country.

ENERGY STAR®

ENERGY STAR is a government-backed program that helps consumers identify energy efficient products. Every ENERGY STAR® qualified window and door must meet or exceed energy efficiency criteria set by the U.S. Department of Energy.

To be ENERGY STAR qualified, a window or door or must have these things:



- It must be NFRC certified and labeled.
- It must meet the U-Factor and Solar Heat Gain Coefficient requirements that vary by climate zone across the country.

Most Renewal by Andersen® windows using High-Performance™ Low-E4, High-Performance Low-E4 Sun and High-Performance Low-E4 SmartSun™ glass are ENERGY STAR® qualified for all climate zones of the United States. When you compare windows, make sure they are rated for your region of the country. For more information, visit www.energystar.gov.

"ENERGY STAR" is a registered trademark of the U.S. Environmental Protection Agency.

Green Seal Certified

Founded in 1989, Green Seal is a national nonprofit organization that is devoted to environmental standard setting, product certification and public education. Green Seal helps consumers choose environmentally responsible products by setting science-based environmental certification standards.



Green Seal, through its programs:

- identifies products that are designed and manufactured in an environmentally responsible manner;
- offers scientific analysis to help consumers make educated purchasing decisions regarding environmental impacts;
- ensures consumers that any product bearing the Green Seal Certification Mark has earned the right to use it; and
- encourages manufacturers to develop new products that are significantly less damaging to the environment than their predecessors.

Renewal by Andersen® windows meet Green Seal's environmental standards for:

- Energy efficiency requirements verified by NFRC certification and labeling.
- No use of heavy metals in the frame or sash materials.
- Packaging with at least 25% post-consumer material.

Andersen works continuously to improve its material use and reuse, waste management, emissions, recycling and was also the first window, door and skylight manufacturer to earn the Green Seal certification.

"Green Seal" is a trademark of Green Seal, Inc.



You'll *love* your new windows!™

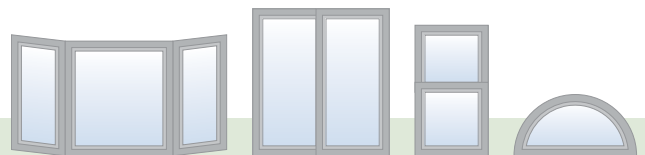
Compare our check list to your own. We think you'll agree, Renewal by Andersen whole window performance offers a complete solution for your window replacement needs.

- ✓ Windows and doors that are NFRC certified and labeled
- ✓ Products that meet or exceed energy efficiency requirements determined by ENERGY STAR® and Green Seal
- ✓ Quality, durable framing material
- ✓ Energy efficient glass options
- ✓ Professional installation
- ✓ Reputable, responsive company
- ✓ Written limited warranty on window and installation*



*For a copy of the Renewal by Andersen 20/2/10 year limited warranty, contact a sales representative or visit www.renewalbyandersen.com.

"Renewal by Andersen" and the Renewal by Andersen logo are trademarks of Andersen Corporation. All other marks where denoted are trademarks of Andersen Corporation. © 2012 Andersen Corporation. All rights reserved. Rev. 07/12



For additional information on Renewal by Andersen® products and services, please visit our Website at

renewalbyandersen.com

Reorder RL-2007