

FIBREX® MATERIAL:

A BETTER ALTERNATIVE, A BETTER WINDOW

Reinventing the window

Innovation has been a hallmark of Andersen Corporation since its founding in 1903. From implementing “mass production” techniques in 1904 (nine years before Henry Ford), to producing the first completely assembled window unit in the industry (1926), to becoming the world’s largest specialized window frame factory in 1929, our guiding principle has always been to “make a product that is different and better.” Each step of the way we have incorporated the latest technologies, fine precision, and high standards in our quest to be better.

Introducing Fibrex® material

One of our most innovative ideas is Fibrex material. This revolutionary composite combines the strength and stability of wood with the low-maintenance features of vinyl. In fact, you might say it’s an evolutionary product—Andersen scientists developed the first hollow vinyl window in the U.S. in 1959, and engineered composite window materials in the 1960s and 1970s. In 1992, Andersen perfected composite window technology, and patented Fibrex material. Today, Fibrex material is the perfect choice for your new replacement windows.

	Fibrex® Material	Other Materials
Strength	Because Fibrex® material is strong, we can make our sash and frames narrower. Narrower frames mean more glass, more view.	Vinyl frames are known to have a higher expansion/contraction rate and can bow, breaking the glass seal.
Insulation	Fibrex material has superior thermal insulating properties. Combined with Andersen® High-Performance™ Low-E4® glass, this helps your home stay warmer in winter and cooler in summer. You can save money on your energy bills. Your home feels more comfortable.	Aluminum window frames conduct heat and cold. Heat leaks out of your house in the winter and into your house in the summer.
Low Maintenance	Fibrex material never needs scraping or painting. It won’t rot, decay or mold*.	Fiberglass frames are painted and may need regular maintenance.
Beauty	Renewal by Andersen replacement windows preserve the architectural beauty of your home. Frame and sash design reflect the shape and lines of your original windows. The unique extruded Fibrex material can be made into any kind of window—including curved specialty windows.	Most replacement windows have square profiles that may look artificial in your home. Vinyl frame material is often thicker, reducing glass area. Fiberglass can only be made into straight lineals.
Environmental Responsibility	40% of the raw material by weight used to make Fibrex material is clean, reclaimed wood fiber. Reclaimed materials in the manufacturing process can also be reground and reused. Renewal by Andersen® windows meet Green Seal’s science-based environmental certification standards as well as being ENERGY STAR® qualified for meeting strict energy efficiency criteria set by the U.S. Department of Energy.	Andersen windows are the only windows with Green Seal certification. Fiberglass is a thermoset material and cannot be reformed into new profiles.
Warranty	A window is not just glass and some framing material. It’s a precise combination of glass, frame and quality installation. We back it all with a Product and Installation Limited Warranty* that is one of the best in the business.	More than half of all remodeling firms have been in business less than four years.** Installation is rarely covered in the written warranty.

*For a copy of the Renewal by Andersen® Products and Installation Transferable Limited Warranty, contact a sales representative. **Small Business Administration Website, www.sba.gov

FRAMING MATERIAL

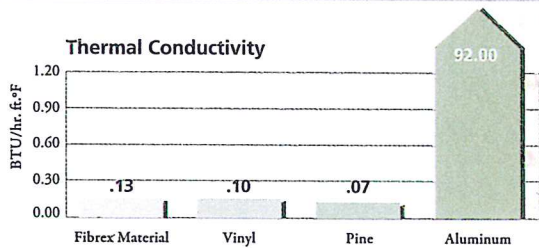
makes a difference

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.

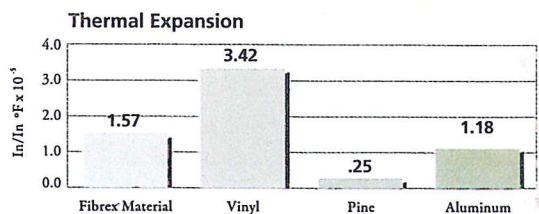
In the 1970's, Andersen began experimenting with reclaimed wood fibers. In 1991, after decades of development and testing, Andersen patented and introduced Fibrex® material, a composite of wood fibers and polymer. Fibrex material combines the strength and stability of wood with the low-maintenance benefit 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.**

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.

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° SmartSun™ glass with HeatLock™ technology
- 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 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.

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

High Performance™ Glass Options Center of Glass Performance Data:

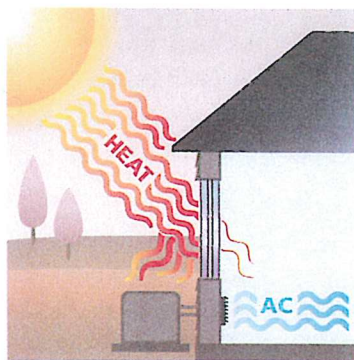
	HP Low-E4°	HP Low-E4° SmartSun™	HP Low-E4° SmartSun™ Heatlock	HP Low-E4° Sun®
U-Factor	.25	.24	.20	.26
% of solar heat passing thru the glass (SHGC)	41%	27%	27%	25%
Visible light transmittance through the glass (VT)	72%	65%	63%	40%
Ultraviolet rays blocked by the glass	84%	95%	95%	84%

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° SmartSun™ glass with HeatLock™ technology meets today's stringent energy codes and requirements with near triple-pane performance in a dual-pane window. HeatLock™ glass reflects escaping heat back into the room.

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!



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.

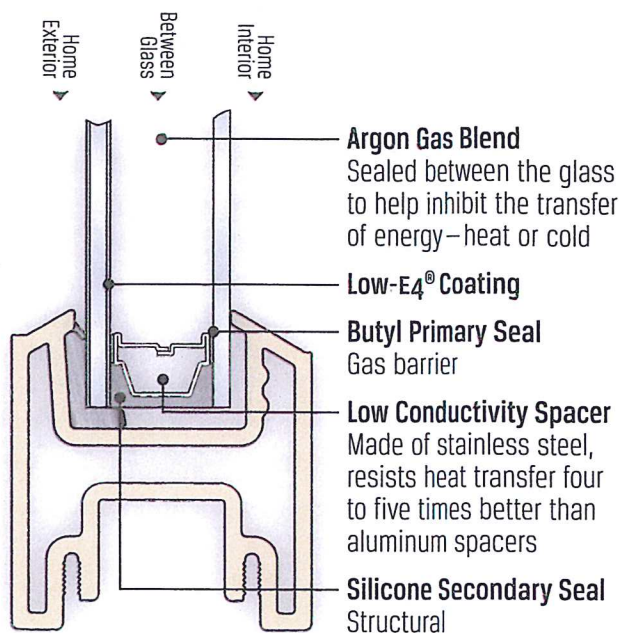
* Values are based on comparison to U-Factors and SHGCs for clear glass non-metal frame default values from the 2006 International Energy Conservation Code (IECC).

** 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.

Cross section of a Renewal by Andersen sash



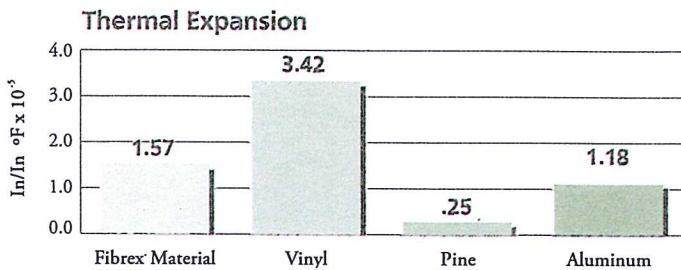
Spacer: Renewal by Andersen uses a low-conductivity spacer made of stainless steel that resists heat transfer better than aluminum spacers used by other manufacturers. Also, because stainless steel is so much stronger than aluminum, our stainless steel spacer can use less material and still keep the 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.

The "material" difference

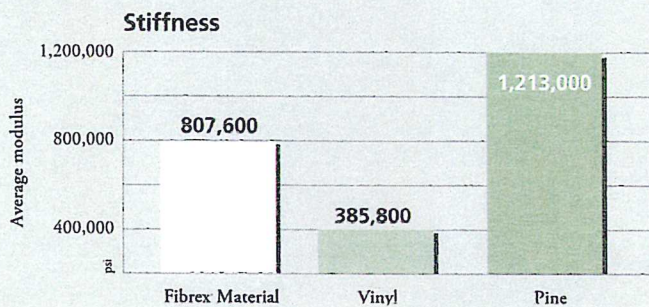
Consider all you expect windows to do for your home—Fibrex® material makes a difference in every instance. Measured across a range of conditions that affect the efficiency, maintenance and beauty of windows, Fibrex® material performs well compared to vinyl, aluminum, fiberglass, and wood. Take a look and we think you'll agree—replacement windows made of Fibrex® material are the right choice for your home.

Durable and reliable



Fibrex material, like wood, fiberglass and aluminum, expands and contracts very little. Vinyl, however, expands and contracts a lot, which can cause cracks, bowing and leakage of air and water. Fibrex material windows will perform better in every season no matter how cold the winters or how hot the summers in your area.

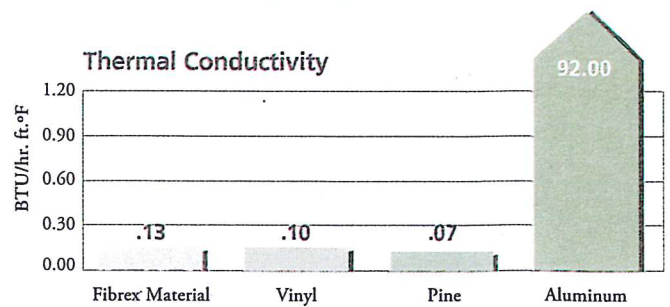
Stable and predictable



Fibrex material is twice as stable and rigid as vinyl. Wood's average stiffness is higher, but it's less predictable than Fibrex® material because of wood's natural variations like grain, knots and moisture content. Fibrex material is strong so frames can be made narrower than with other framing materials. Narrower frames mean more glass, more view. Fibrex material can be made into any style of window—including curved specialty windows—and in colors to complement every home.

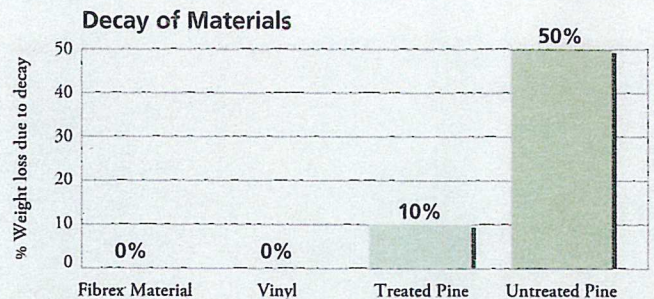
*See the limited warranty for details.

An excellent insulator



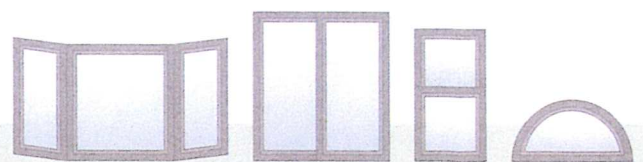
Fibrex material has excellent insulating properties on a par with wood, vinyl or fiberglass. Aluminum, on the other hand, transfers heat out of your home and allows outdoor cold temperatures to chill the window areas inside. Fibrex material insulates about 700 times better than aluminum.

Decay-resistant



With Fibrex material, a special polymer formulation surrounds and coats each wood fiber in the manufacturing process, providing exceptional resistance to rot and fungal growth. Renewal by Andersen's windows, made with Fibrex material, never need scraping or painting because they are warranted not to flake, rust, blister, peel, crack, pit or corrode.*

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

renewalbyandersen.com

Reorder RL-2001

Gliding

WINDOWS

Whether you're creating a new look or matching the original window style of your home, maximize your view with slim, easy-to-slide, contemporary gliding windows.

BEAUTIFUL

Narrow, contoured frames allow more glass viewing area.

VERSATILE

Both sashes slide, so you can open either the left side, the right side, or a portion of both.

RELIABLE

Fibrex® material tracks are shaped for easier cleaning and will not pit, rust, or corrode!

UNIQUE

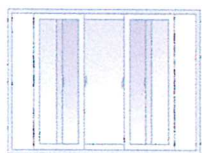
A great solution when a projecting window may interfere with walkways, patios, decks, or landscaping.



Gliding Window



Gliding Fractional Vent Window



Gliding Triple Window



Combination Window

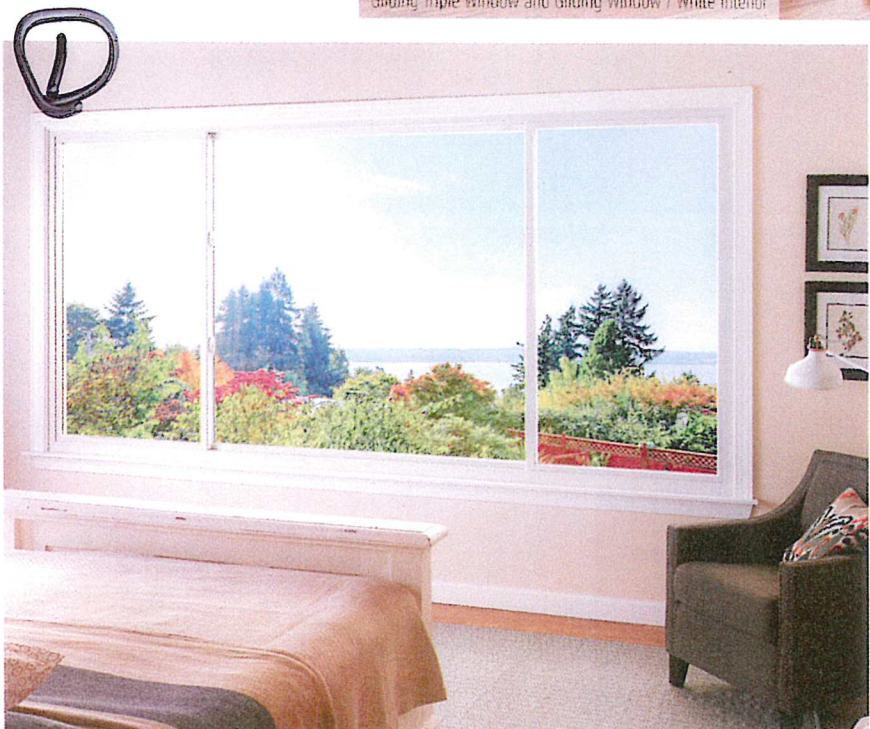
EXPRESS YOUR STYLE



Gliding Triple Window and Gliding Window / White Interior



Gliding Fractional Vent Window / Terracotta Interior





“Best investment in our home that we have made.”

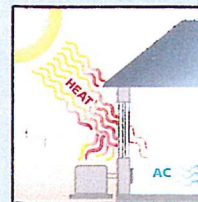
STEVEN E.



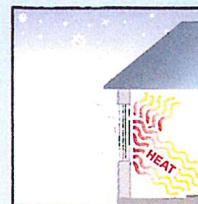
How Window Performance Is Rated

Energy Efficiency Rating

To help homeowners, in 1992 the National Fenestration Rating Council (NFRC) established an independent third-party rating, certification, and labeling program for windows, doors, and skylights (fenestration





Warm Weather Performance



Cool Weather Performance

products). Renewal by Andersen displays the NFRC label on all of its windows. This label means that the entire window unit has been rated and certified, not just the center of the glass or individual components. See our Energy Efficiency brochure for additional information.

 	
Casement Picture Window Dual-Pane Low-E4 SmartSun Glazing with Argon Product Type: Fixed	
ENERGY PERFORMANCE RATINGS	
U-Factor 0.26 (U.S./I-P)	Solar Heat Gain Coefficient 0.23 (Metric/SI)
ADDITIONAL PERFORMANCE RATINGS	
Visible Transmittance 0.53	Air Infiltration 0.00
<small>Manufacturers stipulate that 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.</small>	