



RESIDENTIAL • SUNROOM • COMMERCIAL • STOREFRONT • MANUFACTURER





FiberFrame

windows, patio doors, storefront and sunrooms are manufactured by Comfort Line Limited. It was with great foresight and vision that in the 1980's Comfort Line introduced the first fiberglass window made in the U.S market. Comfort Line is a family owned business that began in 1959 in Toledo, Ohio and we've been leading in the window and door industry ever since.

Comfort Line

introduced the first fiberglass window ever made over 30 years ago. Recognizing the performance advantages of pultruded fiberglass, Comfort Line's leadership took bold and innovative steps to be the first to apply this high quality, high performance material to the residential windows, patio door and the commercial window industry.

Our FiberFrame line not only introduced the first fiberglass window frame, it also introduced the first fiberglass sliding patio door and sunroom to the residential market and storefront system to the US commercial market.



energy efficiency

environmentally friendly: **inside and out**

FiberFrame fiberglass windows and doors have less thermal conductivity than any other window material, therefore preventing heat and cold coming from outside into a building's internal environment. Our fiberglass frame, in combination with energy efficient glass, brings savings in energy bills and increased comfort to the interior of the building.

Our standard dual pane insulated glass package consists of LowE glass, argon gas, and warm edge spacers; keeping rooms cool in the summer and warm in the winter. Upgrade to our optional triple pane insulated glass package with LowE glass for the most protection from the elements.

All FiberFrame windows and doors are ENERGY STAR qualified, independently tested, and certified to perform at levels that meet or exceed strict energy efficiency criteria set by the US Department of Energy. ENERGY STAR requirements for windows and doors vary by climate zone. FiberFrame builds its windows and doors based on the ENERGY STAR required specifications for a building's geographic region.



a leader in performance

Fiberglass windows outperform wood, vinyl, and aluminum. Every time. All the time. **For a lifetime.**

Fiberglass is a durable, energy efficient, low maintenance material superior to wood, vinyl and aluminum in many ways. Fiberglass is stronger and has nearly zero thermal expansion rate in comparison to vinyl. Compared to aluminum, fiberglass is far superior in thermal performance.

Fiberglass window frames can hold a heavier load without sacrificing performance or effecting weather resistance, thus allowing for larger window openings. Not only is fiberglass longer lasting and more energy efficient, it is environmentally friendly, made from partially recycled material and the plentiful natural resource of silica sand. The manufacturing process also uses less energy than that of other window materials.



top 3 reasons fiberglass windows and doors **excel at energy efficiency:**

1 STABILITY

Fiberglass has almost zero thermal expansion, essentially the same as glass itself, which means tighter seals against weather and always a true fit.

2 DURABILITY

Fiberglass can withstand all of the outside elements and harsh weather. It will never rot, rust, corrode, warp, crack, dent, or split.

3 THERMAL SUPERIORITY

Fiberglass has low thermal conductivity, which means that it doesn't allow heat or cold from outside into a building's interior.

compared to other window materials **fiberglass is:**

STRONGER

It is 8x's stronger than vinyl. 3.5x's stronger than wood/vinyl composites and 2x's stronger than aluminum.

MORE ENERGY EFFICIENT

Less thermal conductivity than aluminum (500x's less), so it doesn't allow heat or cold from the outside into a building's interior environment.

LONGER LASTING

Almost zero thermal expansion rate (essentially the same rate as glass) means tighter seals against weather. Vinyl expands at over 7x's this rate.

LOWER MAINTENANCE

Virtually maintenance-free frames stay true to form due to strength of materials. No need for sanding, painting, or staining.



residential

Home is where everything important comes together for you and your family: hospitality, comfort, and security. FiberFrame fiberglass will last and continue to bring you peace of mind for years to come. When it comes to windows and doors, you won't find a better choice for durability, energy efficiency, and overall longevity than fiberglass. With the combination of our fiberglass frames and energy efficient glass, you'll notice the difference in the comfort of your home and in the savings in your energy bills. Now is the time to bring innovation into your home with FiberFrame fiberglass windows and doors.



picture window

Enhance your view with a classic picture window. Bring in the light and add a stunning focal point to any room with a custom picture window. Create the best look for your home or building from any window style combination: double hung, horizontal slider, casement, or awning paired with a fixed picture window. You're guaranteed a stunning window that showcases your view and your home.



sunroom

FiberFrame Sunrooms offer the only pultruded four season room on the market using all fiberglass structural components and fiberglass windows and doors. Patented corner key design simplifies assembly and provides exceptionally strong post and beam construction. All rooms come equipped with unique exterior brickmould on all windows and doors which provides appealing architectural detail.

sliding patio doors

Experience the exquisite feeling our patio doors bring to your home along with comfort, performance, and safety. Nothing opens a room to the wide expanse of the outdoors like our sliding patio doors. In combinations of two, three, or four panels and from 5ft. to 16ft. wide and up to 8ft. tall, you'll wonder how you lived without the spacious and airy addition of our glass sliding doors. Experience the exquisite feeling our patio doors bring to your home along with comfort, performance, and safety. Because our doors slide, you'll have more room layout options than a hinged door that opens into your room might otherwise provide.



double hung

If you're looking for a versatile yet classic window style, look no further than the double hung. Regardless of your home design, a classic double hung window can fit right in. Our double hung windows are designed so that both sashes move up and down and tilt-in for the maximum cleaning accessibility, and the most versatile ventilation possible. Open the top, the bottom, or both sashes to suit your needs.



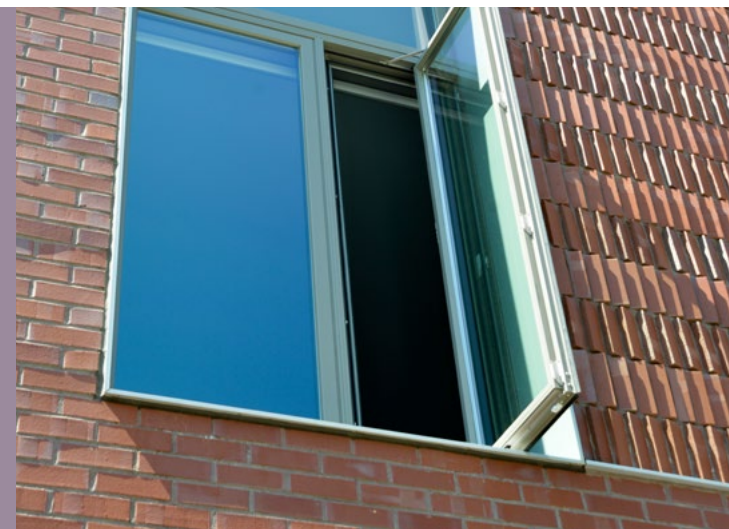
horizontal slider

For large unobstructed views of the beautiful scenery surrounding your home, you can't go wrong when you choose our horizontal slider window. The sashes of the window slide back and forth for easy opening and cleaning, while providing supreme ventilation and circulation throughout your room.



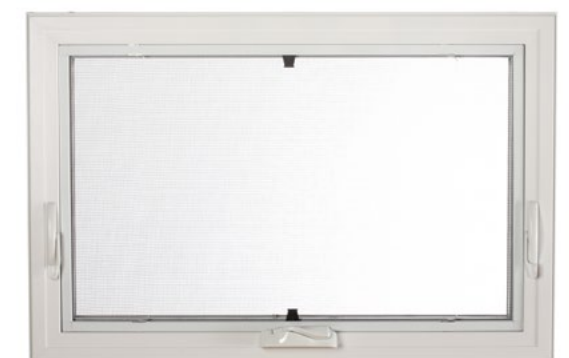
casement

Protect your home from the elements with our timeless casement windows. As one of the most energy efficient window choices you can make, casements offer optimal ventilation when open, and the tightest seal possible to prevent drafts and air infiltration when closed. You'll appreciate the unobstructed views, superior ventilation, and ease of cleaning that casement windows provide. Perfect for kitchens, or any other locations where a stretch would be required to open and close the window. Our sleek, tuck-away handles make it easy to open the window frame to just the right angle to catch that perfect breeze.



awning

Awning windows are a perfect choice for optimal air ventilation, and the only window style that lets you enjoy a breeze even when it's raining. With the sash hinged at the top, it projects out when opened protecting your home from the rain while allowing maximum airflow.





bay

Stylish yet practical – that’s what you’ll notice about our bay windows. You’ll add light, space, and even extra seating when you add one of our Bay window configurations to your room. Choose between 25-, 35-, or 45-degree Bay window angles by combining casements or double hung windows with a fixed or operating center window. Then sit back and enjoy the expansive view and the extra light that you’ll gain from our bay windows.

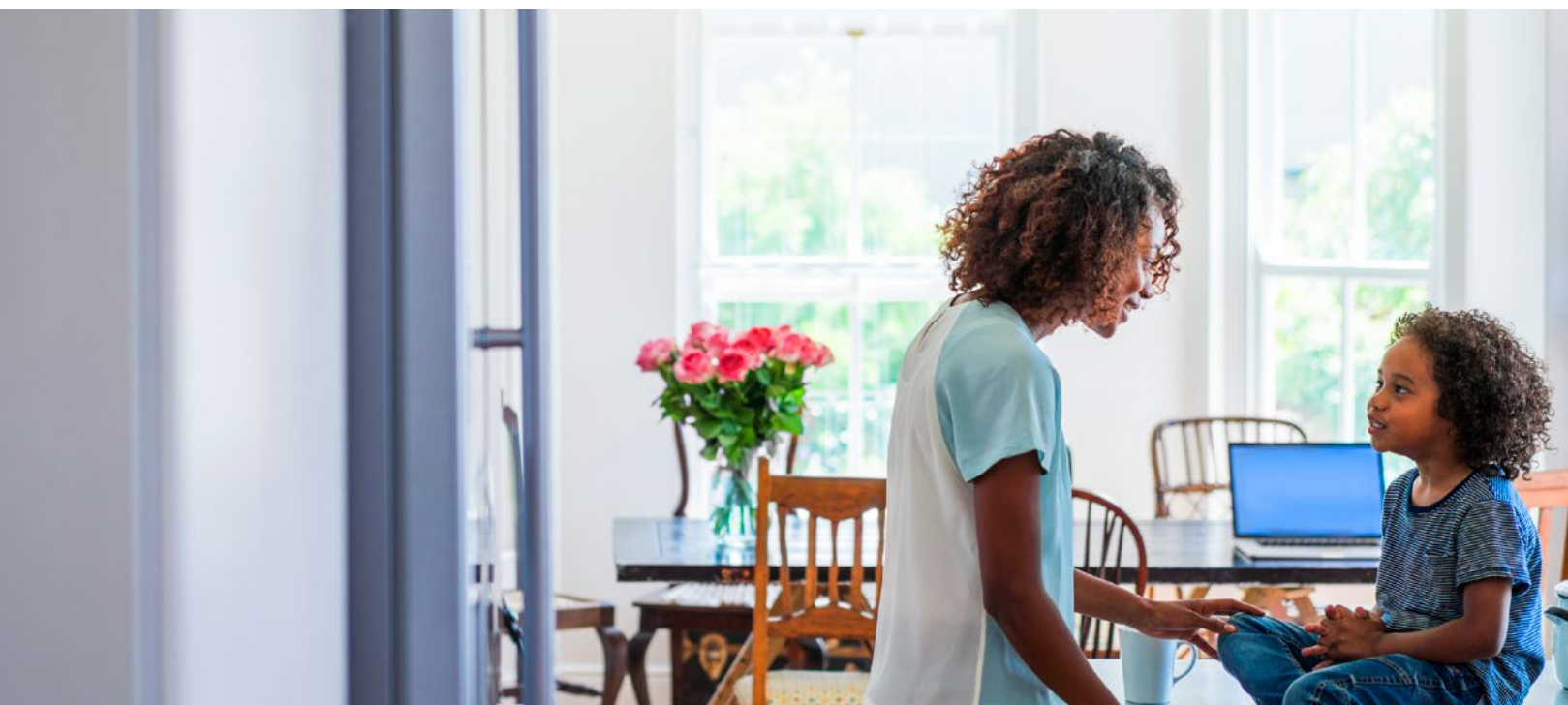


bow

Make an impressive statement by adding the elegant bow window to your home. You’ll open up your room, and impact the profile of the outside of your home with the distinctive style. Created by combining four, five, or six casement windows or picture windows in the form of a gentle curve, this window offers an expansive view of outdoors while bringing light into your room. Our energy efficient insulated seat makes a great space for a window garden or extra seating. Available in both Bay and Bow window systems.

specialty shapes

Add a fixed specialty shaped window to any window combination and bring a distinctive touch to your home. Choose from arches, angles, rounds, or half rounds. Whatever your preference, our specialty windows are made custom order to meet your design vision. Add details such as grids or grilles in the color of your choice. Every window has the same superior engineering and energy efficiency that you find in all of our fiberglass windows styles.



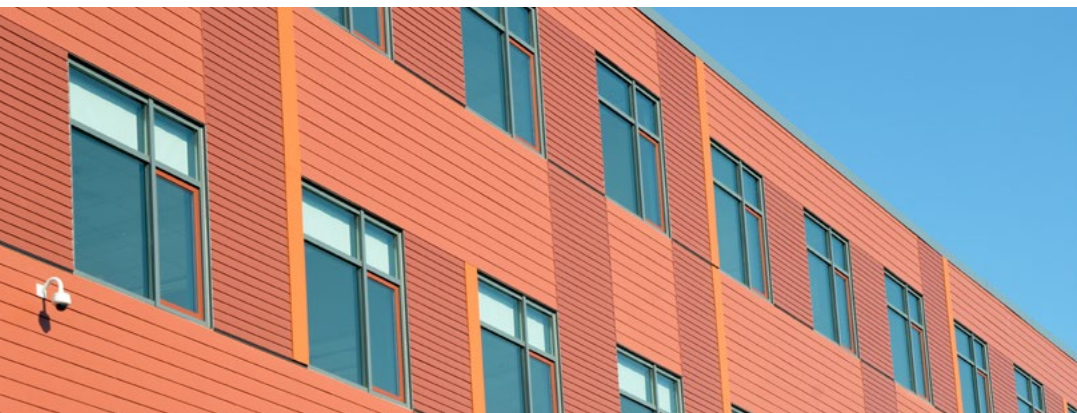


commercial



FiberFrame commercial rated fiberglass windows, with their superior design, are ideal for building owners who keep buildings in their portfolio as long term investments. FiberFrame commercial warranty is the best in the industry. FiberFrame partners with American Institute of Architects (AIA) by presenting continuing education credits with architectural firms across the country.

We continue our innovative approach to windows and doors even to this day by bringing strength, energy savings, and beauty to all of our products. Our unique partnerships with industry leaders allow us to offer you the very best energy efficiency in glass, more frame color choices than any other manufacturer, and the greatest strength of materials.



The FiberFrame Storefront system is the first of its kind in North America. The 1.25" glazing cavity offers many high performance glass packages. Ranging from double and triple glazed units with single, double, and triple coat Low-E. Adding argon boosts U-Values from .29 down to and below .22.



storefront and window wall

Comfort Line has gone above and beyond to create the best high performance low maintenance fiberglass window wall system on the market. The window wall system is designed with a recessed glass cavity to accentuate superior design and shadow lines. The 3000 Series window wall system configuration options are endless giving the designer an assortment of possibilities from floor to ceiling, multi sectional openings and ribbon configurations. Our innovative designers and engineering team designed the 3000 Series to seamlessly integrate the use of operating units, while using the highest performing glass packages available on the market with our standard 1-1/4" glazing pocket.

endless design possibilities

FiberFrame windows and doors come in thousands of color choices. Whether you desire a whole new look, or just want to upgrade your home's current style, you'll appreciate FiberFrame's sleek design options.

Die Cast Locks and Lift Handles

Come in standard colors, polished brass, brushed nickel, oil rubbed bronze, and brushed chrome.



Double Hung/Slider Hardware



Casement Awning Hardware



Patio Door Hardware



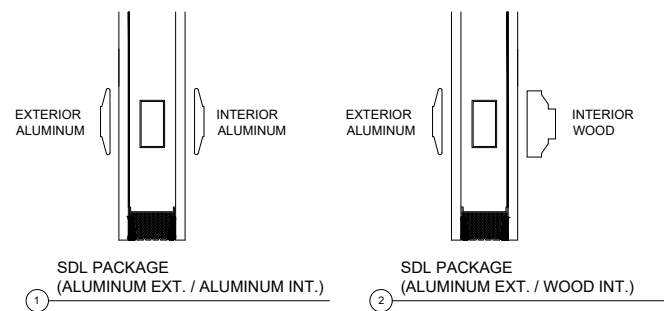
Patio Door Hardware

Grille Options

Removable interior wood in pre-finished pine of unfinished oak.

Simulated Divided Lite

Combination of removable interior grille and an exterior non-removable metal grille, color matched to the window, and a metal spacer in-between the glass.



Grid Options

Choose one of our standard colors or select slim line pencil brass or pewter, or wood grain.



1000's of color choices

Choose from one of our standard colors or from any color in the Sherwin-Williams palette. You'll have thousands of designer colors to choose from to design your window and door exactly as you wish. Choose your interior and exterior color to be the same, or have a unique color on either side.



FiberFrame Standard Colors

We are pleased to announce eight standard to our color offering. These colors are a blend between the most common residential and commercial requests we've had to date. Without compromise, our paint meets AAMA 623 requirements.

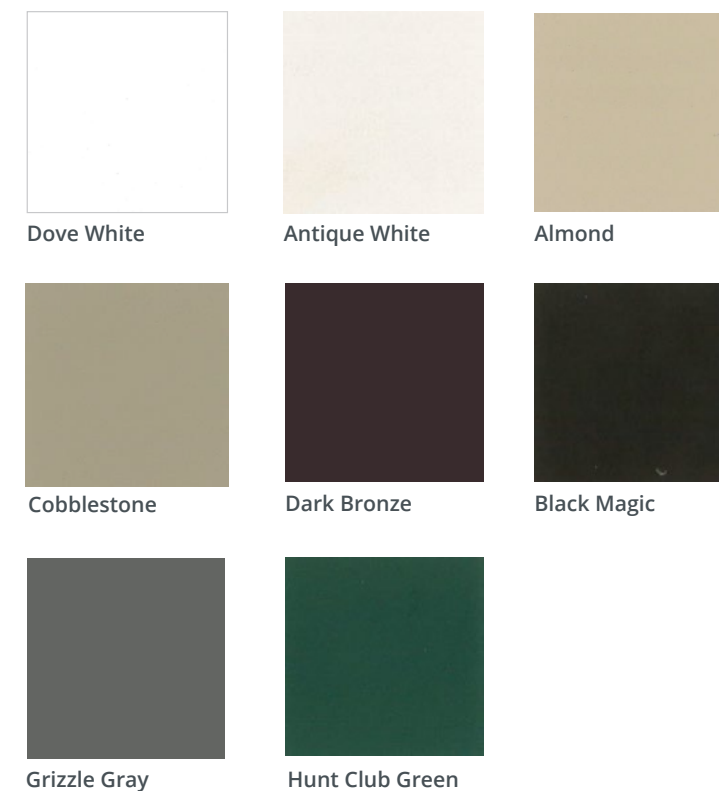


Oak Veneer Interiors

Choose stainable, real oak veneer for interior window and door frames.

Extension Jambs

Add to the interior of the window frame, in oak or poplar.



Note: Due to printing variances, actual color and sheen of the material may differ. Contact your FiberFrame representative for material samples. 1-800-588-4999

STC Testing Results

Awning	RATING		LAB
	STC	OITC	
1" IG (1/8" annealed interior & 1/8" annealed exterior)	31	24	FTL
1-1/4" IG (1/4" annealed interior & 1/4" annealed exterior)	36	29	FTL
1-1/4" IG (1/4" annealed interior & 1/4" laminate on the exterior side)	35	27	ATI
1-1/4" IG (1/4" lami interior & 1/4" annealed exterior) and 7/8" IG (1/8" annealed interior & 1/4" lami exterior)	40	30	ATI
1-1/4" IG (1/4" annealed interior & 1/4" lami exterior) and 7/8" IG (1/8" annealed interior & 3/16" annealed exterior)	43	34	FTL
Heat Mirror 1/8 glass with 2 HM88	31	23	ATI
Heat Mirror 1/8" annealed interior & 1/4" lami exterior with 2 HM88	38	29	ATI

Casement	STC		OITC
	STC	OITC	
1" IG (1/8" annealed interior & 1/8" annealed exterior)	31	25	FTL
1-1/4" IG (1/4" annealed interior & 1/4" annealed exterior)	36	30	FTL
1-1/4" IG (1/4" annealed interior & 1/4" laminate on the exterior side)	36	28	ATI
1-1/4" IG (1/4" lami interior & 1/4" annealed exterior) and 7/8" IG (1/8" annealed interior & 1/4" lami exterior)	41	31	ATI
1-1/4" IG (1/4" annealed interior & 1/4" lami exterior) and 7/8" IG (1/8" annealed interior & 3/16" annealed exterior)	44	34	FTL
Heat Mirror 1/8 glass with 2 HM88	32	24	ATI

Picture	STC		OITC
	STC	OITC	
1" IG (1/8" annealed interior & 1/8" annealed exterior)	29	25	FTL
1-1/4" IG (1/4" annealed interior & 1/4" annealed exterior)	34	26	ATI
1-1/4" IG (1/4" annealed interior & 1/4" laminate on the exterior side)	36	28	ATI
1-1/4" IG (1/4" lami interior & 5/32" annealed exterior)	36	29	ATI
1-1/4" IG (1/4" annealed interior & 1/4" lami exterior) and 7/8" IG (1/8" annealed interior & 3/16" annealed exterior)	40	31	FTL
1-1/4" IG (1/4" lami interior & 1/4" annealed exterior) and 7/8" IG (1/8" annealed interior & 1/4" lami exterior)	42	32	ATI
Heat Mirror 1/8 glass with 2 HM88	32	24	ATI
Heat Mirror 1/8" annealed interior & 1/4" lami exterior with 2 HM88	36	28	ATI

Picture	STC		OITC
	STC	OITC	
(1" IG Unit made up of 6.0mm Laminate (.030 pvb) – spacer – 6.0mm Laminate (.030 pvb))	37	31	ATI

Double Hung	STC		OITC
	STC	OITC	
5/32" annealed interior and 5/32" annealed exterior	30	25	ATI
1/4" laminate (.030 PVB) interior and 1/4" annealed exterior	34	28	ATI
1/4" laminate (.030 PVB) interior and 1/4" laminate (.030 PVB) exterior	34	29	ATI

Patio Door	STC		OITC
	STC	OITC	
1/8-1/8 Temp	27	22	ATI
5/16 Lam. - 1/8 Temp	29	26	ATI
1/8-1/8 Temp	28	21	ATI
5/16 Lam. - 1/8 Temp	30	27	ATI

STC - Sound Transmission Class per ASTM E413
OITC - Outdoor-Indoor Transmission Class per ASTM E1332

frame materials

Fiberglass is an ideal material for many products and especially for windows and doors.

For all the reasons you are considering replacing your existing windows and doors, FiberFrame designs provide you with lasting solutions – strength, durability, air and water tightness, ease of operation, resistance to heat and cold, low maintenance – the list goes on and on.



air, water, and structural performance

All FiberFrame windows and doors are tested and certified to standards and specifications developed by the American Architectural Manufacturers Association. Comfort Line takes the additional step of participating in NAMI's certified products labeling system. This label provides you with assurance that the FiberFrame product you select will perform the first time, and for a lifetime.

structural properties

Strength and Durability – Fiberglass window and door frames are the strongest of all common alternative materials: aluminum, wood, and vinyl. This allows for longer lasting performance, elimination of reinforcement, more glass area with larger window openings and slimmer profile's.

thermal performance

All of FiberFrame's line of products meet or exceed thermal performance standards set by the US Environmental Protection Agency's Energy Star Program. Additionally, FiberFrame designs are rated and labeled through the National Fenestration Rating Council, the only uniform, independent rating and labeling system for the energy performance of windows and doors.

thermal properties

Thermal Expansion and Contraction – Fiberglass window and door frames are comparable to glass, and have the lowest rate of expansion and contraction compared to alternative materials. The result is superior weather – seal performance over a wide range of seasonal temperature changes, smooth opening and closing operation, and consistent alignment of the sash to frame.

insulating performance

Fiberglass is an excellent insulator. Windows and doors made with fiberglass frames use one of the best thermal performing materials available, especially compared to vinyl that often is reinforced with aluminum or steel.



nfr testing thermal performance data

Glass Type All values based on 3.0mm (1/8") glass.	U-Value	R-Value	CR	Solar Heat Gain	Visible Light Transmittance
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2100 Series Casement

Cardinal Clear Air (Clear / Clear) 1" IG	.41	2.44	45.00	.52	.54
Cardinal LowE 272 Argon (LowE 272 / Clear) 1" IG	.27	3.70	59.00	.28	.48
Cardinal LowE 366 Argon (LowE 366 / Clear) 1" IG	.26	3.85	60.00	.19	.43
Cardinal LowE 272 with LowE180 Triple Glazed Argon (LowE 272 / Clear / LowE180) 1" IG	.22	4.55	65.00	.25	.42

2100 Series Awning

Cardinal Clear Air (Clear / Clear) 1" IG	.41	2.44	45.00	.52	.54
Cardinal LowE 272 Argon (LowE 272 / Clear) 1" IG	.27	3.70	59.00	.28	.48
Cardinal LowE 366 Argon (LowE 366 / Clear) 1" IG	.27	3.70	57.00	.19	.43
Cardinal LowE 272 with LowE180 Triple Glazed Argon (LowE 272 / Clear / LowE180) 1" IG	.22	4.55	65.00	.25	.42

2100 Series Picture

Cardinal Clear Air (Clear / Clear) 1" IG	.43	2.33	45.00	.61	.64
Cardinal LowE 272 Argon (LowE 272 / Clear) 1" IG	.26	3.85	58.00	.32	.56
Cardinal LowE 366 Argon (LowE 366 / Clear) 1" IG	.25	4.00	58.00	.22	.51
Cardinal LowE 272 with LowE180 Triple Glazed Argon (LowE 272 / Clear / LowE180) 1" IG	.21	4.76	65.00	.29	.49

2100 Series Round Top

Cardinal Clear Air (Clear / Clear) 1" IG	.46	2.17	45.00	.68	.72
Cardinal LowE 272 Argon (LowE 272 / Clear) 1" IG	.28	3.57	58.00	.36	.63
Cardinal LowE 366 Argon (LowE 366 / Clear) 1" IG	.27	3.70	58.00	.24	.57
Cardinal LowE 272 with LowE180 Triple Glazed Argon (LowE 272 / Clear / LowE180) 1" IG	.22	4.55	65.00	.33	.55

Glass Type All values based on 3.0mm (1/8") glass.	U-Value	R-Value	CR	Solar Heat Gain	Visible Light Transmittance
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5000 Series Patio Door

Cardinal Clear Air (Clear / Clear) 1" IG	.46	2.17	44.00	.60	.63
Cardinal LowE 272 Argon (LowE 272 / Clear) 1" IG	.30	3.33	58.00	.32	.55
Cardinal LowE 366 Argon (LowE 366 / Clear) 1" IG	.30	3.33	58.00	.21	.50
Cardinal LowE 272 with LowE180 Triple Glazed Argon (LowE 272 / Clear / LowE180) 1" IG	.25	4.00	62.00	.28	.48

6500 Series Picture

Cardinal Clear Air (Clear / Clear) 7/8" IG	.48	2.08	43.00	.77	.71
Cardinal LowE 272 Argon (LowE 272 / Clear) 7/8" IG	.30	3.33	57.00	.36	.62
Cardinal LowE 366 Argon (LowE 366 / Clear) 7/8" IG	.29	3.45	58.00	.24	.55
Cardinal LowE 272 with LowE180 Triple Glazed Argon (LowE 272 / Clear / LowE180) 1-1/4" IG	.20	5.00	68.00	.32	.54

8000 Series Double Hung

Cardinal Clear Air (Clear / Clear) 7/8" IG	.45	2.22	44.00	.57	.60
Cardinal LowE 272 Argon (LowE 272 / Clear) 7/8" IG	.30	3.33	56.00	.31	.53
Cardinal LowE 366 Argon (LowE 366 / Clear) 7/8" IG	.29	3.45	56.00	.20	.47
Cardinal LowE 272 with LowE180 Triple Glazed Argon (LowE 272 / Clear / LowE180) 7/8" IG	.28	3.57	60.00	.28	.46

8020 Series Slider

Cardinal Clear Air (Clear / Clear) 7/8" IG	.46	2.17	44.00	.57	.60
Cardinal LowE 272 Argon (LowE 272 / Clear) 7/8" IG	.30	3.33	45.00	.30	.52
Cardinal LowE 366 Argon (LowE 366 / Clear) 7/8" IG	.30	3.33	60.00	.20	.47
Cardinal LowE 272 with LowE180 Triple Glazed Argon (LowE 272 / Clear / LowE180) 7/8" IG	.28	3.57	61.00	.27	.45

**not all products shown, glass manufacturer subject to change



FiberFrame™
Comfort Line®

FIBERGLASS WINDOWS, PATIO DOORS, SUNROOMS & STOREFRONT

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