



# Impact Performance



# We're for the visionaries.®

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**We're for people  
who take building  
to new levels.**



We're for people who are passionate about design, who care about the big picture and the smallest detail. We're for people who aren't satisfied with mainstream choices... who push the limits of what's possible with the options and innovations that can only be found in Kolbe windows and doors.

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**We're for quality craftsmanship.**

We're for a tradition of excellence that outlasts the latest design trend. The Kolbe story began with a family and a vision. More than 70 years after the Kolbe brothers began their commitment to producing premium quality windows and doors, products bearing their family name can be found in some of North America's most impressive homes and businesses.

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**We're for expertise.**

We're for people who dream of a personalized design experience. That's why you can't find Kolbe windows and doors in the aisles of a home center. Our products are only available through a Kolbe dealer, because they are as passionate about windows and doors as you are about bringing your vision to life. And they will work with you to make your dream a concrete reality.



**We're for possibilities.**

We're for people who won't settle for "standard." We're for limitless options and custom solutions that can only be found in Kolbe's made-to-order products. Our team members are craftspeople who focus on building one window or door at a time, to create distinctive products that fulfill your unique vision.

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**We're for innovation.**

We're for people who want to take building to new levels, with advancements in not only extraordinary sizes and shapes, but also ground-breaking products. We're for creative thinking that redefines what's possible, constantly reimagining our windows and doors to elevate style, performance and functionality.



**Let us bring  
your vision  
to life.**



## Table of Contents

Impact Performance.....	2-3	Technical Data.....	30-41
Product Lines.....	4-9	References.....	32-33
Options & Accessories.....	10-29	Performance.....	34-41



Kolbe knows that the look of your windows and doors and the ease of operation matter as much as the security they provide. That is why our impact products have the same beautiful appearance for which Kolbe windows and doors are known. No unsightly brackets or visible rods are needed to hold the sash in place, and there are no extra locks to fasten in order to attain the highest level of performance against the elements, no matter the climate or conditions.



# Impact Performance

Hurricane force winds can wreak havoc on a coastal community, bringing about massive devastation. Kolbe Windows & Doors understands the need to protect your home and personal belongings from these harsh environmental conditions. Kolbe's impact-certified products are specially designed with great strength and durability to withstand hurricane force winds and flying debris, and are tested extensively to meet or exceed the strict building codes of the coastal region.

Kolbe's impact-certified products provide:

- Enhanced performance & energy efficiency
- Zone 3, Zone 4 & HVHZ protection
- Increased security & peace of mind
- Reduced heating & cooling costs



# Ultra Series

The Ultra Series was designed for versatility, durability and performance. With an array of options, it can mimic the traditional style of wood windows and doors with a warm wood interior and exterior trim details, as well as provide hurricane impact resistance in coastal areas. The extruded aluminum exterior is strong and durable, with a palette of long-lasting, vibrant colors.



## Ultra Series

The Ultra Series offers an extruded aluminum clad exterior with a 70% PVDF fluoropolymer finish that resists chalking and fading over time in 50+ standard colors as well as custom hues. Wood interiors are available in a variety of species and 20+ standard pre-finishes, while additional options for brickmoulds, divided lite patterns, glass and hardware, promote one-of-a-kind designs.





The Ultra Series offers the following products with impact performance ratings:

- ▶ Crank-out casements (includes radius tops)
- ▶ Crank-out XL casements
- ▶ Push-out casements (includes radius tops)
- ▶ Crank-out awnings
- ▶ Sterling double hungs
- ▶ XL Sterling double hungs
- ▶ Beveled & Ogee direct sets
- ▶ Folding doors
- ▶ Sliding patio doors
- ▶ Inswing & outswing doors (includes French doors)
- ▶ Sidelites to match inswing & outswing doors
- ▶ TerraSpan® lift & slide doors

For specific product information, including configuration and maximum size tested, please visit [kolbwindows.com/performance-class-grade](https://kolbwindows.com/performance-class-grade).

# Heritage Series

Kolbe's Heritage Series windows and doors are carefully crafted with a wood interior and exterior, making it possible to create architecturally intricate and historically accurate details. With numerous divided lite profiles and patterns, aesthetic and efficient glass, hardware options and finishes, it's easy to create one-of-a-kind openings to suit every region and climate.



## Heritage Series

Heritage Series wood exteriors are finished with a latex primer, or may be coated with K-Kron II – a durable finish available in 40+ standard colors that enhances and preserves the look of wood windows and doors. A variety of wood species with 20+ standard interior pre-finishes, optional casings, custom colors and more, will help to create distinct details and a personalized touch.





The Heritage Series offers the following products with impact performance ratings:

- ▶ Crank-out casements
- ▶ Push-out casements (includes radius tops)
- ▶ Crank-out awnings
- ▶ Sterling double hungs
- ▶ Sliding patio doors
- ▶ Inswing & outswing doors (includes French doors)
- ▶ Transoms
- ▶ Sidelites to match inswing & outswing doors

For specific product information, including configuration and maximum size tested, please visit [kolbwindows.com/performance-class-grade](https://kolbwindows.com/performance-class-grade).

# Forgent Series

Forgent® Series windows and doors feature proprietary material and thoughtful design, making them simple, convenient and easy to install. Short lead times make Forgent Series a perfect choice for new construction or replacement. Forgent Series products are available with impact performance options for enhanced window and door strength without any aesthetic modifications to the product.



## Forgent Series

This high-performance product line is comprised of Glastra®, a proprietary hybrid of fiberglass and UV stable polymer, formulated for strength and resilience. Multiple chambers in an advanced ladder design promote long-term durability and enhanced energy efficiency for comfortable homes. Windows are engineered with Glastra on the exterior, and a choice of either wood or Glastra on the interior.





The Forgent Series offers the following products with impact performance ratings:

- ▶ Crank-out casements
- ▶ Crank-out awnings
- ▶ Double hungs
- ▶ Direct sets (includes radius & geometric shapes)
- ▶ Sliding windows
- ▶ Complementary sliding patio doors

NOTE: All Forgent Series impact certifications apply to both All Glastra and Glastra/Wood products.

For specific product information, including configuration and maximum size tested, please visit [kolbewindows.com/performance-class-grade](https://kolbewindows.com/performance-class-grade).





## Options & Accessories

Craftsmanship and artistry are hallmarks of Kolbe products. We build innovative windows and doors for coastal areas with a wide array of options. But, don't let the standard options limit your imagination.

At Kolbe, we welcome projects that require special wood species or glass, custom divided lite patterns, or finishes. Our windows and doors are built to order, allowing you to choose the options that best fit with the design of your home and vision for your project. We offer many customizable options and solutions that coordinate beautifully with your home's décor.



# Glass

Kolbe offers glazing options to provide optimum energy efficiency for the geographic region in which you live. The durability of the glass utilized in impact products is one of the most important elements to keep you and your home safe and secure. Low-E is a “smart” coating that reduces energy transfer through the insulating glass unit. The result is reduced heating and cooling costs throughout the year. Low-E coatings also reduce the potential for condensation, as well as provide protection against fading of furniture, fabrics and carpeting.

Available for Ultra Series, Heritage Series & Forgent Series

Kolbe offers the following Low-E insulated glass options, as well as many specialized options.

## Solar Low-E

Suitable for most climates and meets most energy zone requirements. Solar Low-E glass is designed to reflect room-side heat back into the room during winter months. In summer, visible sunlight is allowed in while blocking most of the sun’s infrared heat energy. Kolbe’s standard.

## Solar Gain Low-E

When the weather turns frigid, Solar Gain Low-E glass is the perfect cold remedy. It keeps homes warmer and more comfortable by blocking heat loss to the outside and letting the sun’s heat stream in to increase solar heat gain.

## Solar Advanced Control Low-E

A tinted glass recommended for warm climates that achieves solar control over a wide range of the spectrum, while also helping to reduce glare.

## Solar Control Low-E

Offers an ideal balance of solar control and high visibility by blocking 95% of UV rays while maintaining the interior temperature.

## ThermaPlus™ Low-E

An additional Low-E coating which helps to meet the strictest energy requirements by providing protection against heat loss and UV damage. Available with dual pane versions of Solar Low-E, Solar Control Low-E or Solar Advanced Control Low-E glass.

## Preserve® Film

A protective film that protects the glass surfaces from scratches during transit and construction, as well as reducing the time involved in job site clean-up.

## Tinted, Colored or Patterned

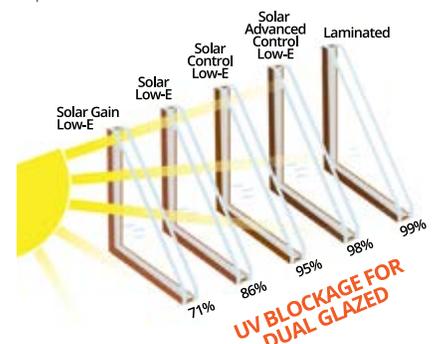
Provides shading, privacy or visual interest.

## Tempered

Standard in Kolbe doors to address safety concerns. Also available in window units to meet specific building codes.

## Neat+™

Harnesses the sun’s UV rays to break down greenhouse gases, other pollutants and loosens dirt so water can rinse it away, leaving windows virtually spotless. A special sputter-coating process makes the glass ultra smooth, so the water “sheets off” more readily than it would on uncoated glass, allowing you to spend less time cleaning.



NOTE: Tested units include argon. The laminate has 1/4" inner pane. Based on Lawrence Berkeley Lab (LBL) Window 5.2 © 2003 analysis for classical UV transmission data.



Not all glass is available on all products. Please contact your Kolbe dealer for product specifics.  
Low-E insulating glass with a stainless steel spacer bar carries a 20-year warranty.  
Not all glass options listed have the same glass warranty. Please contact your dealer for details.  
Neat+ and Preserve are trademarks of Cardinal IG.



### Laminated Glass

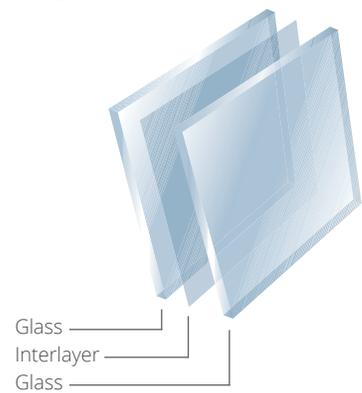
Kolbe's impact products use laminated glass that is designed to stay intact if the glass is broken. What makes it so durable is the specially designed interlayer between the glass. Each impact product utilizes glass with different interlayer levels that are unit performance specific so that each window and door will perform at the highest level possible. Impact glass meets or exceeds industry standards when it comes to laminated glass. Not only does it provide a greater level of safety and security from flying debris or intruders, but better sound transmittance levels as well.

### Glazing System

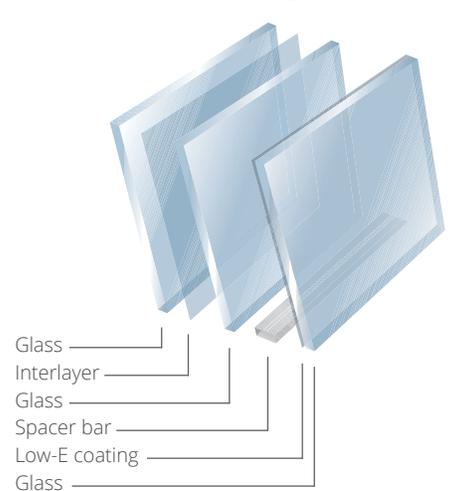
Impact products are uniquely designed with a specialized glazing retention system. This glazing system ensures that the unit will hold the glass securely in place. Ultra Series extruded clad and Heritage Series wood products with impact performance modifications are available as either single pane or double pane units. Forgent Series All Glastra and Glastra/Wood products are available as double pane units. If double pane insulating glass is chosen, the Low-E coating will help improve energy efficiency by reducing solar heat gain.

Not all glass is available on all products. Please contact your Kolbe dealer for product specifics. Low-E insulating glass with a stainless steel spacer bar carries a 20-year warranty. Not all glass options listed have the same glass warranty. Please contact your dealer for details. Neat+ and Preserve are trademarks of Cardinal IG. NOTE: All Forgent Series impact-rated products are glazed with structural silicone.

### Single Pane Unit



### Double Pane Insulating Unit



# Finish Options

Available for Ultra Series & Heritage Series



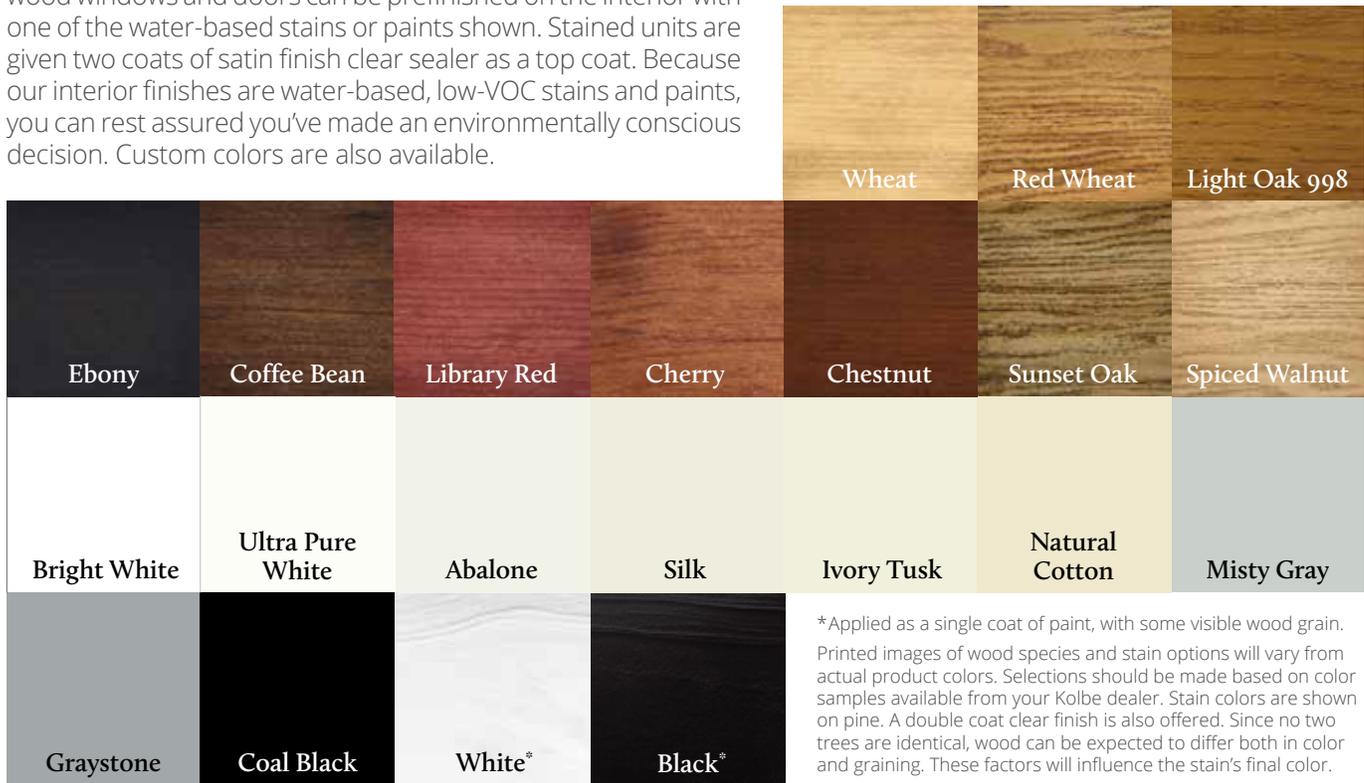
## Interior Wood Species

We craft Ultra Series and Heritage Series windows and doors from a variety of wood species, including rare and exotic. Our wood is sourced from managed forests; The Forest Stewardship Council® (FSC®)-certified wood species are also available for green building projects (FSC® license code FSC-C019541). Ask about additional available wood species.



## Interior Wood Finishes

For units that are ready to install upon delivery, most of Kolbe's wood windows and doors can be prefinished on the interior with one of the water-based stains or paints shown. Stained units are given two coats of satin finish clear sealer as a top coat. Because our interior finishes are water-based, low-VOC stains and paints, you can rest assured you've made an environmentally conscious decision. Custom colors are also available.



\*Applied as a single coat of paint, with some visible wood grain. Printed images of wood species and stain options will vary from actual product colors. Selections should be made based on color samples available from your Kolbe dealer. Stain colors are shown on pine. A double coat clear finish is also offered. Since no two trees are identical, wood can be expected to differ both in color and graining. These factors will influence the stain's final color. Color-matched interior paint is available through any Sherwin-Williams retail store in the United States and Canada.

Some options for our products may have limited color offerings or may incur a nominal charge. Check with your Kolbe dealer for further details on pricing and availability.

## Exterior Colors & Finishes

Kolbe's Heritage Series all-wood products can be coated with K-Kron II – a durable exterior finish that enhances and preserves the look of wood windows and doors. Kolbe's Ultra Series aluminum clad products are finished on the exterior with a commercial-grade 70% PVDF fluoropolymer coating that meets the highest specifications in the industry and carries up to a 30-year warranty\*. A variety of colors, mica and anodized finishes, plus custom colors are available. See your Kolbe dealer for details.

				White	Cloud	Ultra Pure White
				Abalone	Alabaster	Camel
Mudpie	Nutmeg	Khaki	Sahara	Beige	Natural Cotton	Spiced Vinegar
Gingersnap	Truffle	Bronze†	Rustic	Shadow	Shale	Smokestack
Onyx†	Coal Black†	Midnight†	Steel Gray	Slate	Castlerock	Timberwolf
Corbeau†	Sapphire	Coastal Storm	Anchor Gray	Lunar	Emerald Isle	Mediterranean
Cider	Copper Canyon	Maize	Green Tea Leaf	Basil	Hartford Green	Mystic Ivy
Papaya	Roma	Chutney	Custom Colors Available			
Galaxy Silver Mica	Silverstorm Mica	Cosmic Gray Mica	Night Sky Mica	Mica		
				Anodized	Clear Anodized	Champagne Anodized
					Black Anodized	Dark Bronze Anodized

**NOTES:**

\*Coastal applications vary from this. Please contact your Kolbe dealer for warranty specifics.

†Heritage Series products are not available in Bronze, Onyx, Coal Black, Midnight, or Corbeau.

Some options for our products may have limited color offerings or may incur a nominal charge. Check with your Kolbe dealer for further details on pricing and availability. Printed images of exterior finishes may vary slightly from actual colors. Selections should be made based on actual color samples available from your Kolbe dealer.

There is a "color range" with anodized colors. That is, there is an acceptable "light" to "dark" color range that can be experienced on any job. According to AAMA 611-98 specifications, Section 8.3, the range may be up to 5 Delta E's. We can provide from our anodized vendor color samples of this color range if requested. The color range is due to numerous variables which include (but are not limited to) the shape of the parts, alloy variations and time in the anodizing process. This could mean that a sash part may appear slightly different in color than a frame part. This is/will be acceptable. Even the samples that may be provided may vary from the final product due to the variables. You must be aware of this as this will be considered acceptable.

# Finish Options

Available for Forgent Series



Photo © Patrick Brickman

## Exterior Finishes

Forgent Series windows and doors have a durable and resilient Glastra exterior. Cloud and Sahara are integral to the Glastra material, while Midnight and Bronze are applied as an acrylic film.



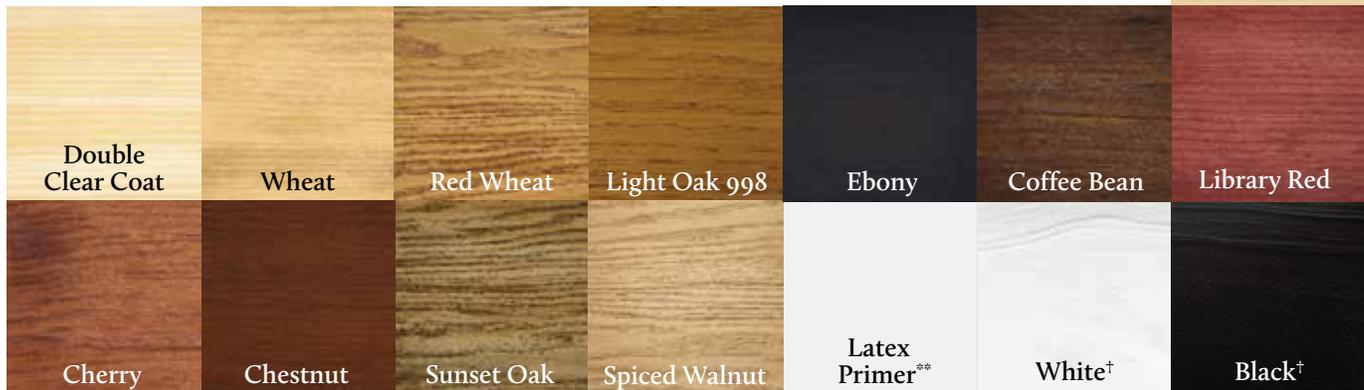
## Interior Finishes – All Glastra Units

Coordinating finishes are available for Glastra interiors; however, the Midnight or Bronze interior finish is only available on units with a Midnight or Bronze exterior, respectively.

NOTE: Midnight and Bronze are only available on All Glastra units. Ask your Kolbe dealer for details.  
 †Only available on products with Midnight exteriors.  
 ††Only available on products with Bronze exteriors.

## Interior Wood Finishes – Glastra/Wood Units

Forgent Series Glastra/Wood windows and doors are offered with a Pine interior. For units that are ready to install upon delivery, Forgent Series windows and doors can be prefinished on the interior with one of the water-based stains or paints shown. Stained units are given two coats of satin finish clear sealer. Because our interior finishes are water-based, low-VOC stains and paints, you can rest assured you've made an environmentally conscious decision.



\*All units supplied with unfinished pine interiors must be finished in the field.  
 \*\*Latex primer is not a final finish.  
 †Applied as a single coat of paint, with some visible wood grain.

Printed images of wood species and stain options will vary from actual product colors. Selections should be made based on color samples available from your Kolbe dealer. Stain colors are shown on Pine. Since no two trees are identical, wood can be expected to differ both in color and graining. These factors will influence the stain's final color. Color-matched interior paint is available through any Sherwin-Williams retail store in the United States and Canada.

# Exterior Brickmoulds & Casings

Available for Ultra Series & Heritage Series



Accentuate the beauty of your Ultra Series and Heritage Series windows and doors with Kolbe's exterior brickmoulds and casings. In addition to the casings shown below, various sill nosings can be applied to enhance the overall appearance and to create the perfect look. Custom brickmoulds and casings are available as well; talk to your local Kolbe dealer for more information.

## Ultra Series



1-15/16" profiled brickmould



3-1/2" profiled brickmould



2" flat casing



3-1/2" flat casing



3-1/2" flat casing with backband



Bull nose casing



Historic casing



Stucco casing

## Heritage Series



1-15/16" profiled brickmould



3-1/2" profiled brickmould



1-15/16" flat casing



3-1/2" flat casing



5-1/2" flat casing



2" beaded casing



3-1/2" beaded casing



Prospect casing

# Screens

Available for Ultra Series, Heritage Series & Forgent Series



## Retractable Insect Screen

For those who prefer an unobstructed view at times, a retractable insect screen kit is offered for select Kolbe Ultra Series and Heritage Series double hungs, casements and awnings. When you want to open your window and use the screen, operation is practically effortless. Simply press the pull bar down to the sill to engage the screen. A gentle push toward the exterior allows the screen to retract.

\*Not available for Forgent Series products.

The kit includes all the components necessary for field installation on either an Ultra Series or Heritage Series unit.



## Insect Screen Mesh

Kolbe windows feature various screen mesh options to keep insects out. BetterVue® fiberglass mesh is less visible than many screens in the industry, and has a tighter weave to keep smaller bugs out. It is also flame retardant, and doesn't stain, crease or dent. UltraVue® mesh offers the ultimate in visibility. Both of these options meet strict chemical emissions limits for healthier interiors. Or, choose durable Aluminum screen mesh to help guard against damage from fiberglass screen-eating insects found in certain regions.



UltraVue® Mesh



BetterVue® Mesh



Aluminum Mesh



## Water Shed Technology™

Water Shed Technology is an advanced water repellent coating that allows screens to repel water and debris. BetterVue and UltraVue mesh feature this durable coating that increases the life expectancy of the screens, by keeping them cleaner longer. Water beads up and rolls off, to preserve viewing clarity, rain or shine.

Water Shed Technology™ is a trademark of PHIFER INCORPORATED.  
BetterVue® and UltraVue® are registered trademarks of PHIFER INCORPORATED.

# Divided Lites

Available for Ultra Series, Heritage Series & Forgent Series



Expand the character of your project by adding one of our divided lite options to your impact resistant windows and doors. Kolbe offers performance divided lites for Ultra Series, Heritage Series and Forgent Series products. Choose anything from a traditional, colonial style pattern to a unique, custom design, or select grilles-in-the-air space for a similar appearance with easier cleaning. Not all profiles are available for all product series.

## Performance Divided Lites

Performance divided lites (PDL) give the appearance of true divided lites without sacrificing energy efficiency. Divided lite bars are adhered to both sides of the glass with spacer bars in between.



Beveled PDL



Ovolo PDL\*



Square PDL\*

## Glazing Beads & Muntin Bars

As standard, glazing beads have a beveled profile, but may also be ordered with an ovolo or square profile for Ultra Series and Heritage Series products. Matching muntin bars are available on units with performance divided lites (PDL). Units will have beveled muntin bars on the exterior, regardless of which profile is chosen for the interior.



Beveled



Ovolo\*



Square\*

## Grilles-in-the-Airspace

Grilles-in-the-air space are constructed with aluminum bars sealed between two panes of insulating glass, offering the look of divided panes while reducing cleaning time. For units with 7/8" insulating glass, 3/4" wide contoured bars are available in a variety of colors and two-tone wood finishes.



\*Not available for Forgent Series products.

# Hardware

Available for Ultra Series & Heritage Series



## Finish Options

To complement the style of your home, Kolbe offers hardware options that are engineered to function effectively while matching the look you've chosen. Hardware is available in a number of finishes to best suit your décor. Not all hardware styles and finishes are available for all product lines. Please contact your Kolbe dealer for product specifics.

White	Beige	Brushed Gold	Bright Brass	Antique Brass	Clay	Rustic Umber
Stainless Steel	Satin Nickel	Brushed or Polished Chrome	Smoky Gray	Antique Nickel	Oil-Rubbed* or Dark Oil-Rubbed*	Flat Black or Matte Black†
White Bronze**	Dark Bronze**	<p>* Oil-Rubbed, Dark Oil-Rubbed, White Bronze and Dark Bronze are living finishes that will change appearance with time and use.</p> <p>† White Bronze, Dark Bronze and select Matte Black finishes are recommended for coastal applications.</p> <p>Printed images of hardware finishes will vary from actual colors. Selections should be made based on color samples available from your Kolbe dealer.</p>				

## Casement & Awning Hardware

Crank-out and push-out handles offer a clean look and ease of operation. The crank-out style folds down when not in use so as to not obstruct the view. A Clay-colored nesting handle and multi-point locking levers are applied to Ultra Series and Heritage Series casements and awnings as standard.



Crank-Out Nesting Handle  
*(shown in Clay)*



Locking Lever\*  
*(shown in Antique Brass)*



Crank-Out Ashlar Handle  
*(shown in Rustic Umber)*



Push-Out Multi-Point Handle  
*(shown in Satin Nickel)*

\*Locking lever is not available on French casements.

Not all hardware finishes and handle sets are available for all product series. Please contact your Kolbe dealer for product specifics.

## Double Hung Hardware

For ease of operation, Kolbe's double hung locks allow the sash to be tilted in for easy cleaning. The Signature lock provides sleek style, while the Spoon lock offers an old world aesthetic for historical renovation projects. Sash lift hardware can be added on the bottom sash of double hungs to make operation easier and add a touch of historical charm. Handles and locks shown below are available on Ultra Series and Heritage Series double hungs.



Top: Signature Lock  
*(shown in Antique Nickel)*  
Bottom: Spoon Lock  
*(shown in Satin Nickel)*



Curved Sash Lift Handles  
*(shown in Satin Chrome)*



Traditional Sash Lift Handle  
*(shown in Rustic Umber)*



Square Sash Lift Handle  
*(shown in Antique Brass)*



## Window Opening Control Devices (WOCs)

Kolbe's Window Opening Control Devices (WOCs) restrict the size of the open window area to less than 4 inches, and feature a limit release mechanism to allow for emergency escape. These devices allow the window to latch into place at a predetermined position and automatically re-latch when closed. The WOCs meet the ASTM F2090 requirements.

NOTE: This device meets the stringent safety requirement of ASTM F2090 if applied per recommendations. Not all windows are available with Window Opening Control Devices. Please ask your local Kolbe dealer about availability.

Not all hardware finishes and handle sets are available for all product series. Please contact your Kolbe dealer for product specifics.

## Sliding Patio Door Handle Sets

Ultra Series and Heritage Series sliding patio doors are available with a variety of handle sets and locking options. Bell and Arch escutcheons can be chosen on multi-point handles to make sure even the smallest details match your aesthetic. For contemporary projects, the Madison and Dallas handles feature a slim silhouette in several stunning finishes. Or, choose a narrow flush pull handle for unobtrusive style.



Single-Point\*  
*(shown in Matte Black)*



Multi-Point  
(Bell Escutcheon)  
*(shown in Antique Brass)*



Multi-Point  
(Arch Escutcheon)  
*(shown in Bright Brass PVD†)*



Narrow Flush Pull  
*(shown in Satin Nickel)*



Madison Handle Set with Dual-Point Lock  
*(shown in Dull Chrome)*



Dallas Handle Set with Multi-Point Lock  
*(shown in Brushed Gold)*



Square Handle  
with Single-Point\* Lock  
*(shown in Satin Nickel)*

\*Available only for doors with panel thickness of 1-3/4"

†PVD (Physical Vapor Deposition) finish is an application over the color which helps protect the finish from tarnishing, peeling, and cracking.

Not all hardware finishes and handle sets are available for all product series. Please contact your Kolbe dealer for product specifics.

Printed images of hardware finishes will vary from actual colors. Not all hardware colors are available on all hardware options.

Selections should be made based on color samples available from your Kolbe dealer.



## TerraSpan® Lift & Slide Door Handle Sets

Ultra Series TerraSpan lift & slide doors offer two removable handle sets, specifically designed for units that pocket into a wall. The LS100 includes a swing cover on the escutcheon plate for when the handle is removed. The LS300 handle set is also available. For pocketing systems, a finger pull is included on the lead panel. The 180° Inset Handle has clean lines that complement contemporary design, and is required for each panel in a door system. With optional exterior pulls and interior lock covers, it is available in Matte Black, Rustic Umber or Silver.



Recessed



Operational



LS100 Handle Set  
(shown in Rustic Umber)



LS300 Handle Set  
(shown in Satin Nickel)



Finger Pull  
(shown in Rustic Umber)

Not all hardware finishes and handle sets are available for all product series. Please contact your Kolbe dealer for product specifics. Printed images of hardware finishes will vary from actual colors. Not all hardware colors are available on all hardware options. Selections should be made based on color samples available from your Kolbe dealer.



Photo courtesy of The Alexis Agency

## Folding Door Hardware

Ultra Series and Heritage Series folding panels are available with surface-mounted flush bolts. For units with a swinging panel, choose from our selection of swinging door hardware (pgs. 25-26). In configurations where the final panel does not have a hinge handle to pull in the panel, a finger pull can be installed so that the panel can be pulled in and secured.



Flush Bolt  
*(shown in Satin Nickel)*



Hinge Handle  
*(shown in Matte Black)*



Finger Pull  
*(shown in Brushed Chrome)*

## Swinging Doors

Swinging doors are available with an array of lever handle styles, featuring multi-point locks, with optional keyed handle sets and attractive finishes to coordinate with your décor.



München  
*(shown in Antique Brass)*



Toronto  
*(shown in Smoky Gray)*



Verona  
*(shown in Rustic Umber)*



Dallas  
*(shown in Satin Nickel)*

## Baldwin® Hardware

Elegantly designed Baldwin handle sets complement swinging doors with luxurious style.



Boulder  
*(shown in Rustic Umber)*



Bristol  
*(shown in Satin Brass PVD†)*



Cody  
*(shown in Oil-Rubbed\*)*



Concord  
*(shown in Antique Brass)*



Kensington  
*(shown in Bright Brass PVD†)*



Lakeshore  
*(shown in Satin Nickel PVD†)*



Richland  
*(shown in Antique Nickel)*



Santa Monica  
*(shown in Brushed Chrome)*

\*The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.

†PVD (Physical Vapor Deposition) finish is an application over the color which helps protect the finish from tarnishing, peeling, and cracking.

NOTE: Additional Baldwin Hardware finishes not shown include Distressed Smoky Gray and Matte Black.

Not all hardware styles or finishes are available for all product series. Please contact your Kolbe dealer for product specifics.

Printed images of hardware finishes will vary from actual colors. Selections should be made based on color samples available from your Kolbe dealer.

## Ashley Norton Hardware

Kolbe's selection of Ashley Norton Hardware for swinging doors allows design flexibility, with a choice of material, backplate, lever style, and finish. Solid brass or bronze levers and backplates are offered in a variety of combinations; bronze, with finishes in Dark Bronze, White Bronze and Matte Black (not shown), is recommended for coastal applications.



Apollo Lever  
*(shown with brass City backplate  
in Polished Chrome)*



Chester Lever  
*(shown with brass Rectangular  
backplate in Dark Oil-Rubbed<sup>†</sup>)*



Bauhaus Lever  
*(shown with brass City backplate  
in Satin Nickel)*



Colonial Lever  
*(shown with brass Rectangular  
backplate in Dark Oil-Rubbed<sup>†</sup>)*



Meridian Lever  
*(shown with bronze Urban  
backplate in Dark Bronze<sup>††</sup>)*



Atlas Lever  
*(shown with bronze Urban  
backplate in Dark Bronze<sup>††</sup>)*



Churchill Lever  
*(shown with bronze Rectangular  
backplate in Dark Bronze<sup>††</sup>)*



Hampton Lever  
*(shown with bronze Rectangular  
backplate in White Bronze<sup>††</sup>)*

\* Dark Oil-Rubbed, Dark Bronze and White Bronze are living finishes that will change appearance with time and use.

† Bronze backplates and levers are recommended for coastal applications.

Not all hardware is available for all product series. Please contact your Kolbe dealer for product specifics.

Printed images of hardware finishes will vary from actual colors. Selections should be made based on color samples available from your Kolbe dealer.



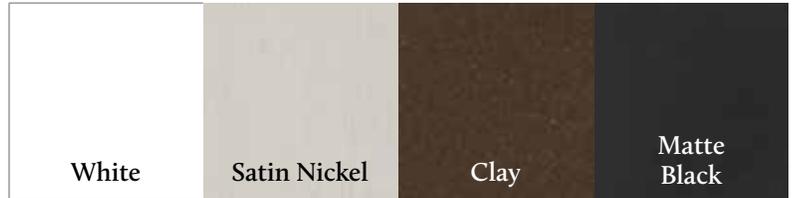
# Hardware

Available for Forgent Series



## Finish Options

Kolbe offers distinct hardware options and finishes in popular colors to best suit your décor. Not all hardware styles and finishes are available for all product lines. Please contact your Kolbe dealer for product specifics.



## Casements & Awnings

Crank-out handles offer a clean look and ease of operation, folding down when not in use so as to not obstruct the view. A Clay-colored nesting handle and multi-point locking levers are applied to Forgent Series casements and awnings as standard. Other available finishes include White, Satin Nickel and Matte Black.



Crank-Out Nesting Handle  
*(shown in Clay)*



Crank-Out Ashlar Handle  
*(shown in Matte Black)*



Locking Lever  
*(shown in Satin Nickel)*

## Double Hungs

A Clay-colored sash lock and tilt latches are applied to Forgent Series double hungs as standard. Other available finishes include White, Satin Nickel and Matte Black. White or Clay lift handles are applied to All Glastra units as standard.\*



Sash Lock  
*(shown in Clay)*



Tilt Latches  
*(shown in Clay)*



Lift Handle\* – All Glastra units  
*(shown in White)*

\*Sash lift handles are not available on Glastra/Wood replacement double hungs.

Not all hardware finishes and handle sets are available for all product series. Please contact your Kolbe dealer for product specifics.

Printed images of hardware finishes will vary from actual colors. Not all hardware colors are available on all hardware options. Selections should be made based on color samples available from your Kolbe dealer.

## Sliding Windows

A Clay-colored sash lock and tilt latches are applied to Forgent Series sliding windows as standard. Other available finishes include White, Satin Nickel and Matte Black. White or Clay pull handles are applied to All Glastra units as standard.\*

\*Pull handles are not available on Glastra/Wood replacement sliding windows.



Sash Lock  
(shown in Clay)



Tilt Latches  
(shown in Clay)



Pull Handle\* – All Glastra units  
(shown in White)

## Window Opening Control Devices (WOCDs)

Kolbe's Window Opening Control Devices (WOCDs) restrict the size of the open window area to less than 4 inches, and feature a limit release mechanism to allow for emergency escape. These devices allow the window to latch into place at a predetermined position and automatically re-latch when closed. The WOCDs meet the ASTM F2090 requirements.

NOTE: This device meets the stringent safety requirement of ASTM F2090 if applied per recommendations. Not all windows are available with Window Opening Control Devices. Please ask your local Kolbe dealer about availability.

## Sliding Patio Doors

### Complement All Glastra

A White three-point Allure handle is standard for Forgent Series complementary sliding doors to use in conjunction with All Glastra projects. Also available in Clay. The Signature handle is available with a key cylinder in Matte Black and Satin Nickel PVD†. A Square handle is available with a key cylinder in Matte Black, Satin Nickel PVD† and White.



Allure Handle  
with key cylinder  
(shown in White)



Signature Handle  
with key cylinder  
(shown in Satin Nickel PVD†)



Square Handle  
with key cylinder  
(shown in Satin Nickel PVD†)

### Complement Glastra/Wood

A single-point handle set in Bright Brass PVD† with bell escutcheon is standard for Forgent Series complementary sliding doors to use in conjunction with Glastra/Wood projects. Additional finishes include Rustic Umber, Satin Nickel PVD†, and Matte Black. A single-point Allure handle is offered in Clay, Matte Black, Satin Nickel PVD† and White. A Square handle is available with a key cylinder in Matte Black, Satin Nickel PVD† and White.



Single-point Handle  
with key cylinder  
(shown in Matte Black)



Allure Handle  
with key cylinder  
(shown in White)



Square Handle  
with key cylinder  
(shown in Satin Nickel PVD†)

†PVD (Physical Vapor Deposition) finish is an application over the color which helps protect the finish from tarnishing, peeling, and cracking.

Not all hardware finishes and handle sets are available for all product series. Please contact your Kolbe dealer for product specifics.

Printed images of hardware finishes will vary from actual colors. Not all hardware colors are available on all hardware options. Selections should be made based on color samples available from your Kolbe dealer.





## Technical Data

Kolbe's impact resistant windows and doors offer not only craftsmanship and protection from the elements, but also superior performance. Our windows and doors undergo independent testing to ensure the highest quality products available. With Kolbe's participation in programs such as the ENERGY STAR® and WDMA Hallmark Certification programs, you can rest assured that our products are tested to industry standards, allowing them to meet and exceed today's stricter building codes and standards for energy efficiency.



# References | Professional Tools

Kolbe prides itself on offering the tools and resources architects, builders and other industry professionals need to complete their projects. Kolbe's Architect Library is the main resource for drawings, details and information required for specifying Kolbe windows and doors for residential and commercial building projects. From 3D models, product specifications and ratings, energy and impact performance data, to continuing education courses and webinars, Kolbe supports all of your project needs.

## Architect Library

Search our 2D drawings — including horizontal, vertical, mull and stack cross sections; elevations with rough opening dimensions; typical mull and stack configurations; common divided lite patterns; and 3D models.

## 3D Models

3D models for use in Revit® offer great design flexibility for design professionals who prefer to work in three dimensions.

## AIA/CES Courses

As a Registered AIA Continuing Education Services provider, Kolbe provides AIA Learning Units (LU) and/or Health, Safety & Welfare (HSW) credits as required per state and/or professional memberships to meet yearly requirements.

## To download Revit® Models, visit:

- ▶ [kolbewindows.com/resources/architect-library](http://kolbewindows.com/resources/architect-library)
- ▶ [bimobject.com](http://bimobject.com)
- ▶ [market.bimsmith.com](http://market.bimsmith.com)

## Also available at [kolbewindows.com](http://kolbewindows.com):

- ▶ Cross section drawings
- ▶ Available sizes
- ▶ Installation instructions
- ▶ Performance data
- ▶ Thermal performance information
- ▶ Acoustic data
- ▶ Mulling limitations
- ▶ Product and installation videos
- ▶ CSI specifications

© Brantley Photography



# Wind Zones

In an effort to make sure buildings can keep occupants safe, while withstanding local weather conditions, universal wind zones were established and must be met in regions that require it. Wind zones refer to the maximum wind speeds that can be reached in an area, measured in miles per hour (MPH), as well as the resulting force it applies to structures, measured in pounds per square foot (PSF).

Kolbe offers products that are designed to perform in a diverse range of climates and weather patterns, including high winds. Below is a guide to understanding the types of conditions our products are rated for.

## WIND ZONE 1 – Category 3 Hurricane

130 mph and up to, but not including, 140 mph and Hawaii. Pressures in this zone will exceed 40 psf for negative loads. The I-codes also specifically require wind-borne debris construction in this zone. Windows and doors must be designed to withstand an impact of a 4.5 lb 2 x 4 stud (missile C) shot out of a cannon at 40 ft. per second (27 mph) to simulate flying debris. This is followed by a total of 9,000 high wind cycles to simulate a hurricane.

## WIND ZONE 2 – Category 3 Hurricane

140 mph and up to, but not including, 150 mph at more than one mile from the mean high tide line. Pressures in this zone approach 50 psf for negative loads. Wind-borne debris requirements are identical to Zone 1.

## WIND ZONE 3 (IPD3) – Category 4 Hurricane

150 mph and up to 170 mph, or 140 mph and up to 170 mph within one mile from the coast. The I-codes specifically require wind-borne debris construction in this zone. Windows and doors must be designed to withstand an impact of a 9 lb 2 x 4 stud (missile D) shot from a cannon at 50 ft. per second (34 mph) to simulate flying debris. This is followed by a total of 9,000 high wind cycles to simulate a hurricane.

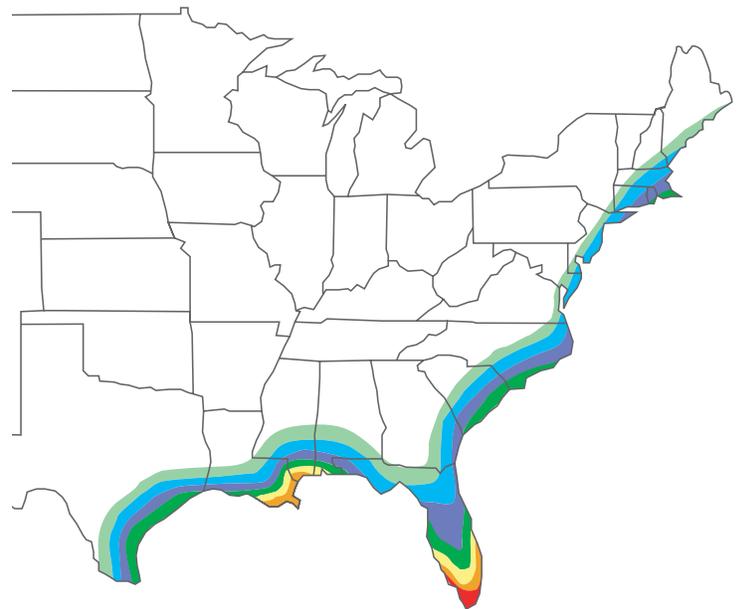
## WIND ZONE 4 (IPD4) – Category 4 Hurricane

This is considered a high velocity wind zone and encompasses all areas with wind speeds in excess of 170 mph. The I-codes specifically require wind-borne debris construction in this zone. Windows and doors must be designed to withstand an impact of a 9.5 lb 2 x 4 stud (missile D) shot from a cannon at 50 ft. per second (34 mph) twice to simulate flying debris. This is followed by a total of 9,000 high wind cycles to simulate a hurricane.

## High Velocity Hurricane Zone (HVHZ)

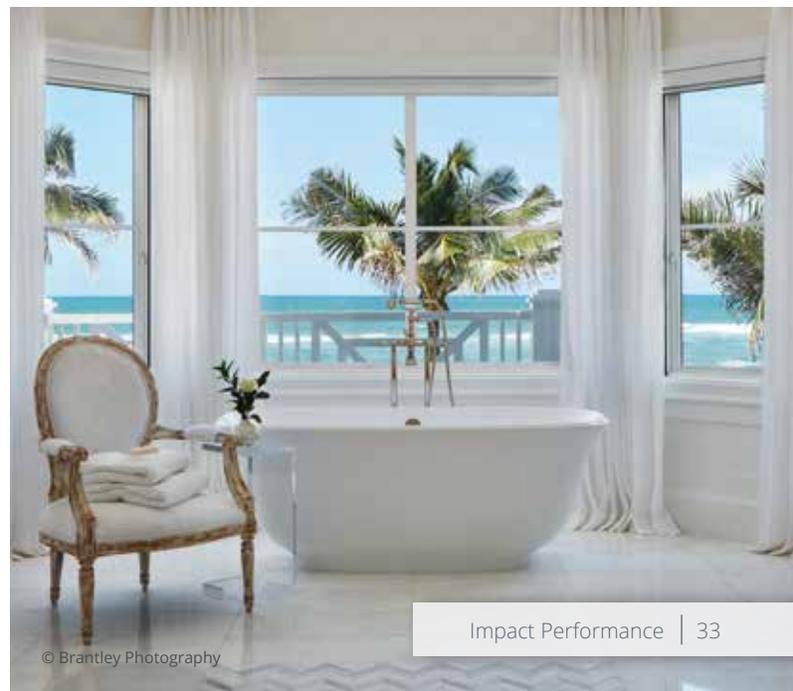
The stringent building codes, standards and product approval systems of Florida's HVHZ program apply to Miami-Dade, Broward and Coastal Palm Beach Counties. Building products specified in these counties must be tested to HVHZ's high standards of performance, undergoing laboratory-tested structural wind load resistance, as well as an ISO-based production quality assurance program audited by an approved third party.

NOTE: Codes for local jurisdictions may vary.



ASCE-7 Standards

■ ≥180 mph	■ 140 to 150 mph
■ 170 to 180 mph	■ 130 to 140 mph
■ 160 to 170 mph	■ 120 to 130 mph
■ 150 to 160 mph	□ All others less than 120 mph



# Performance | Ultra Series

To see the most current product information – including configuration, ratings, maximum size tested, Florida and Texas approval numbers – please visit [kolbewindows.com/performance-class-grade](http://kolbewindows.com/performance-class-grade).

Product	Kolbe Performance	Product Configuration	Air Infiltration (CFM/FT <sup>2</sup> @ 1.57 PSF)	Water Tested to PA (PSF)	Performance Class and Grade	Design Pressure PA (PSF)		Max Width		Max Height	
						Positive	Negative	Inches	(MM)	Inches	(MM)
<b>Ultra Series Windows</b>											
Ultra Series Crank-Out Awning	IPD4	Single	<0.3	470 Pa (9.82 psf)	CW-PG65 AP	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	48	1219	48	1219
Ultra Series Crank-Out Casement	IPD4	Single	<0.3	470 Pa (9.82 psf)	CW-PG65 C	+3120 Pa (65.16 psf)	-3360 Pa (70.18 psf)	36	914	90	2286
Ultra Series Crank-Out Casement Half Circle	IPD4	Single	<0.3	470 Pa (9.82 psf)	LC-PG65 C	+3120 Pa (65.16 psf)	-3360 Pa (70.18 psf)	36	914	72	1829
Ultra Series Crank-Out Casement Picture	IPD4	Single	<0.3	470 Pa (9.82 psf)	CW-PG65 FW	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	96	2438	60	1524
Ultra Series Crank-Out Casement Picture	IPD4	Single	<0.3	470 Pa (9.82 psf)	CW-PG65 FW	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	96	2438	52.88	1343
Ultra Series Crank-Out Casement Quarter Circle	IPD4	Single	<0.3	470 Pa (9.82 psf)	LC-PG65 C	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	36	914	72	1829
Ultra Series Crank-Out Casement Segment Head	IPD4	Single	<0.3	470 Pa (9.82 psf)	LC-PG65 C	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	36	914	72	1829
Ultra Series Crank-Out XL Casement	IPD4	Single	<0.3	470 Pa (9.82 psf)	CW-PG65 C	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	42	1067	96	2438
Ultra Series Beveled & Ogee Direct Set	IPD4	Single	<0.3	470 Pa (9.82 psf)	CW-PG65 FW	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	96	2438	60	1524
Ultra Series Double Hung Direct Set	IPD4	Single	<0.3	470 Pa (9.82 psf)	CW-PG65 FW	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	96	2438	60	1524
Ultra Series Push-Out Casement	IPD4	Single	<0.3	470 Pa (9.82 psf)	CW-PG65 C	+3600 Pa (75.19 psf)	-3600 Pa (75.19 psf)	36	914	90	2286
Ultra Series Push-Out Casement Segment Head	IPD4	Single	<0.3	470 Pa (9.82 psf)	CW-PG65 C	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	36	914	72	1829
Ultra Series Push-Out Casement Half Circle	IPD4	Single	<0.3	470 Pa (9.82 psf)	CW-PG65 C	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	36	914	72	1829
Ultra Series Push-Out Casement Quarter Circle	IPD4	Single	<0.3	470 Pa (9.82 psf)	LC-PG65 C	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	36	914	72	1829
Ultra Series Sterling Double Hung Transom	IPD4	Single	<0.3	470 Pa (9.82 psf)	CW-PG65 FW	+3120 Pa (65.16 psf)	-3360 Pa (70.18 psf)	90	2286	60	1524
Ultra Series Sterling Double Hung Transom	IPD4	Single	<0.3	510 Pa (10.65 psf)	CW-PG70 FW	+3360 Pa (70.18 psf)	-3600 Pa (75.19 psf)	90	2286	60	1524
Ultra Series Sterling Double Hung	IPD4	Single	<0.3	470 Pa (9.82 psf)	LC-PG65 H	+3120 Pa (65.16 psf)	-3360 Pa (70.18 psf)	45.5	1156	80.44	2043
Ultra Series Sterling Double Hung	IPD3	Single	<0.3	470 Pa (9.82 psf)	R-PG65 H	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	40.5	1029	96	2438
Ultra Series Sterling Double Hung	IPD3	Single	<0.3	470 Pa (9.82 psf)	LC-PG65 H	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	45.5	1156	96	2438
Ultra Series Sterling Double Hung Picture	IPD4	Single	<0.3	470 Pa (9.82 psf)	CW-PG65 FW	+3120 Pa (65.16 psf)	-3360 Pa (70.18 psf)	90	2286	60	1524
Ultra Series XL Sterling Double Hung	IPD4	Single	<0.3	440 Pa (9.19 psf)	CW-PG60 H	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	48	1219	120	3048

NOTE: IPD3 (Impact Performance, Missile D, Zone 3) = Wind Zone 3  
 IPD4 (Impact Performance, Missile D, Zone 4) = Wind Zone 4

NOTES: Many Kolbe products meet or exceed various performance requirements, such as AAMA/WDMA/CSA 101/I.S.2/A440-11 & 17, CSA A440 S1-09 & 17, ASTM E1886 and E1996, and TAS 201, 202, 203.

# Ultra Series

To see the most current product information – including configuration, ratings, maximum size tested, Florida and Texas approval numbers – please visit [kolbewindows.com/performance-class-grade](http://kolbewindows.com/performance-class-grade).

Product	Kolbe Performance	Product Configuration	Air Infiltration (CFM/FT <sup>2</sup> @ 1.57 PSF)	Water Tested to PA (PSF)	Performance Class and Grade	Design Pressure PA (PSF)		Max Width		Max Height	
						Positive	Negative	Inches	(MM)	Inches	(MM)
<b>Ultra Series Doors</b>											
Ultra Series Entrance Door Outswing Sidelite	IPD4	Single	<0.3	470 Pa (9.82 psf)	CW-PG65 FD	+3120 Pa (65.16 psf)	-3360 Pa (70.18 psf)	50.13	1273	98.59	2504
Ultra Series Entrance Door Outswing Transom	IPD4	Single	<0.3	470 Pa (9.82 psf)	LC-PG65 FW	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	74.88	1902	60	1524
Ultra Series Entrance Door Inswing Sidelite	IPD4	Single	<0.3	470 Pa (9.82 psf)	CW-PG65 FD	+3120 Pa (65.16 psf)	-3360 Pa (70.18 psf)	50.13	1273	98.72	2507
Ultra Series Entrance Door Outswing Sidelite 2-1/4" Panel	IPD4	Single	<0.3	470 Pa (9.82 psf)	LC-PG65 SHD	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	50.25	1276	122.63	3115
Ultra Series Entrance Door Inswing	IPD3	French	<0.3	290 Pa (6.06 psf)	LC-PG40 SHD	+1920 Pa (40.10 psf)	-2160 Pa (45.11 psf)	74.19	1884	98.72	2507
Ultra Series Entrance Door Inswing	IPD3	French	<0.3	0 Pa (0.00 psf)	LC-PG50 LW SHD	+2400 Pa (50.13 psf)	-2400 Pa (50.13 psf)	74.19	1884	98	2489
Ultra Series Entrance Door Outswing	IPD4	French	<0.3	470 Pa (9.82 psf)	LC-PG65 SHD	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	74.88	1902	98.59	2504
Ultra Series Entrance Door Outswing	IPD4	French	<0.3	0 Pa (0.00 psf)	LC-PG65 LW SHD	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	74.88	1902	98.22	2495
Ultra Series Entrance Door Outswing 2-1/4" Panel	IPD4	French	<0.3	470 Pa (9.82 psf)	LC-PG65 SHD	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	74.88	1902	122.63	3115
Ultra Series Folding Door	IPD4	Two to Eight Panels	<0.3	400 Pa (8.35 psf)	PG55 SP	+2640 Pa (55.14 psf)	-2640 Pa (55.14 psf)	319.56	8117	101.13	2569
Ultra Series Sliding Patio Door Sidelite	IPD4	Single	<0.3	510 Pa (10.65 psf)	CW-PG70 FD	+3360 Pa (70.18 psf)	-3600 Pa (75.19 psf)	50.5	1283	98.44	2500
Ultra Series Sliding Patio Door	IPD4	Two Panel	<0.3	400 Pa (8.35 psf)	LC-PG55 SD	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	96	2438	82.44	2094
Ultra Series Sliding Patio Door	IPD4	Two Panel	<0.3	400 Pa (8.35 psf)	LC-PG55 SD	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	78	1981	98.44	2500
Ultra Series Sliding Patio Door	IPD4	Two Panel	<0.3	400 Pa (8.35 psf)	LC-PG55 SD	+2640 Pa (55.14 psf)	-2880 Pa (60.15 psf)	96	2438	98.44	2500
Ultra Series Sliding Patio Door 2-1/4" Panels	IPD4	Four Panel	<0.3	470 Pa (9.82 psf)	LC-PG50 SD	+2400 Pa (50.13 psf)	-2400 Pa (50.13 psf)	190.5	4839	98.44	2500
Ultra Series TerraSpan Lift & Slide Door	IPD4	Five Panel	<0.3	330 Pa (6.89 psf)	LC-PG45 SP	+2160 Pa (45.11 psf)	-2160 Pa (45.11 psf)	220.78	5608	120.75	3067

NOTE: IPD3 (Impact Performance, Missile D, Zone 3) = Wind Zone 3  
 IPD4 (Impact Performance, Missile D, Zone 4) = Wind Zone 4

NOTES: Many Kolbe products meet or exceed various performance requirements, such as AAMA/WDMA/CSA 101/1.S.2/A440-11 & 17, CSA A440 S1-09 & 17, ASTM E1886 and E1996, and TAS 201, 202, 203.

# Performance | Ultra Series

To see the most current product information – including configuration, ratings, maximum size tested, Florida and Texas approval numbers – please visit [kolbewindows.com/performance-class-grade](http://kolbewindows.com/performance-class-grade).

HVHZ LMI Product	Max Size (Single Units)	Max Pressure (Single Units)
<b>Ultra Series Windows</b>		
Ultra Series Crank-Out Awning (mulled units available) <sup>1</sup>	48 x 36	+80/-80
Ultra Series Crank-Out Casement (mulled units available) <sup>1</sup>	36 x 90	+65/-65
	36 x 72	+80/-80
Ultra Series Crank-Out Casement - Radius (mulled units available) <sup>1</sup>	36 x 72	+65/-65
Ultra Series Crank-Out Casement Picture - Rectangular & Shapes (mulled units available) <sup>1</sup>	96 x 72 <sup>2</sup>	+60/-70 <sup>3</sup>
Ultra Series Push-Out Casement (mulled units available) <sup>1</sup>	36 x 72	+80/-80
Ultra Series Push-Out Casements - Radius (mulled units available) <sup>1</sup>	36 x 72	+65/-65
Ultra Series Sterling Double Hung	45-1/2 x 80-7/16	+65/-65
Ultra Series Sterling Double Hung Studio & Transom - Rectangular & Shapes	65 x 80-7/16 <sup>2</sup>	+65/-70
Ultra Series Beveled Direct Set - Rectangular & Shapes (mulled units available) <sup>1</sup>	60 x 120 <sup>2</sup>	+65/-70 <sup>3</sup>
<b>Ultra Series Doors</b>		
Ultra Series Outswing French Door - Rectangular & Radius (mulled units available) <sup>1</sup>	6-0 x 6-10	+70/-70
	6-0 x 8-0	+65/-65
Ultra Series Outswing Single Door, Operating & Fixed - Rectangular & Radius (mulled units available) <sup>1</sup>	3-0 x 6-10	+70/-70
	3-0 x 8-0	+65/-65
Ultra Series Outswing Door Transom - Rectangular & Radius (mulled units available) <sup>1</sup>	74-7/8 x 60 <sup>2</sup>	+70/-70

NOTE: HVHZ LMI = High Velocity Hurricane Zone, Large Missile Impact

<sup>1</sup> Allowable pressures shall be the lesser of the mull and that specified for the individual units.

<sup>2</sup> Additional sizes and pressures are available for fixed units.

<sup>3</sup> Pressures vary based on glass type, unit size, and/or mullion condition.

Please contact your Kolbe dealer for more information and the engineering documents.

NOTES: Many Kolbe products meet or exceed various performance requirements, such as AAMA/WDMA/CSA 101/I.S.2/A440-11 & 17, CSA A440 S1-09 & 17, ASTM E1886 and E1996, and TAS 201, 202, 203.

# Heritage Series

To see the most current product information – including configuration, ratings, maximum size tested, Florida and Texas approval numbers – please visit [kolbewindows.com/performance-class-grade](http://kolbewindows.com/performance-class-grade).

Product	Kolbe Performance	Product Configuration	Air Infiltration (CFM/FT <sup>2</sup> @ 1.57 PSF)	Water Tested to PA (PSF)	Performance Class and Grade	Design Pressure PA (PSF)		Max Width		Max Height	
						Positive	Negative	Inches	(MM)	Inches	(MM)
<b>Heritage Series Windows</b>											
Heritage Series Crank-Out Awning	IPD4	Single	<0.3	470 Pa (9.82 psf)	CW-PG65 AP	+3120 Pa (65.16 psf)	-3360 Pa (70.18 psf)	48	1219	36	914
Heritage Series Crank-Out Casement	IPD4	Single	<0.3	470 Pa (9.82 psf)	CW-PG65 C	+3120 Pa (65.16 psf)	-3360 Pa (70.18 psf)	36	914	72	1829
Heritage Series Crank-Out Casement Picture	IPD4	Single	<0.3	510 Pa (10.65 psf)	CW-PG70 FW	+3360 Pa (70.18 psf)	-3600 Pa (75.19 psf)	96	2438	60	1524
Heritage Series Push-Out Casement	IPD4	Single	<0.3	470 Pa (9.82 psf)	CW-PG65 C	+3120 Pa (65.16 psf)	-3360 Pa (70.18 psf)	36	914	72	1829
Heritage Series Push-Out Casement Half Circle	IPD4	Single	<0.3	440 Pa (9.19 psf)	LC-PG60 C	+2880 Pa (60.15 psf)	-3120 Pa (65.16 psf)	36	914	72	1829
Heritage Series Push-Out Casement Quarter Circle	IPD4	Single	<0.3	330 Pa (6.89 psf)	CW-PG45 C	+2160 Pa (45.11 psf)	-2160 Pa (45.11 psf)	36	914	72	1829
Heritage Series Push-Out Casement Segment Head	IPD4	Single	<0.3	470 Pa (9.82 psf)	CW-PG65 C	+3120 Pa (65.16 psf)	-3360 Pa (70.18 psf)	36	914	72	1829
Heritage Series Sterling Double Hung	IPD3	Single	<0.3	470 Pa (9.82 psf)	LC-PG65 H	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	45.5	1156	80.44	2043
Heritage Series Sterling Double Hung Picture	IPD4	Single	<0.3	510 Pa (10.65 psf)	CW-PG70 FW	+3360 Pa (70.18 psf)	-3600 Pa (75.19 psf)	90	2286	60	1524
Heritage Series Sterling Double Hung Picture	IPD4	Single	<0.3	510 Pa (10.65 psf)	CW-PG70 FW	+3360 Pa (70.18 psf)	-3600 Pa (75.19 psf)	60	1524	90	2286
Heritage Series Sterling Double Hung Transom	IPD4	Single	<0.3	470 Pa (9.82 psf)	CW-PG65 FW	+3120 Pa (65.16 psf)	-3360 Pa (70.18 psf)	96	2438	60	1524

Product	Kolbe Performance	Product Configuration	Air Infiltration (CFM/FT <sup>2</sup> @ 1.57 PSF)	Water Tested to PA (PSF)	Performance Class and Grade	Design Pressure PA (PSF)		Max Width		Max Height	
						Positive	Negative	Inches	(MM)	Inches	(MM)
<b>Heritage Series Doors</b>											
Heritage Series Entrance Door Transom	IPD4	Single	<0.3	510 Pa (10.65 psf)	CW-PG70 FW	+3360 Pa (70.18 psf)	-3360 Pa (70.18 psf)	96	2438	60	1524
Heritage Series Entrance Door Outswing Sidelite	IPD4	Single	<0.3	470 Pa (9.82 psf)	CW-PG65 FD	+3120 Pa (65.16 psf)	-3360 Pa (70.18 psf)	50.13	1273	98.59	2504
Heritage Series Entrance Door Inswing Sidelite	IPD4	Single	<0.3	470 Pa (9.82 psf)	CW-PG65 FD	+3120 Pa (65.16 psf)	-3360 Pa (70.18 psf)	50.13	1273	98.72	2507
Heritage Series Entrance Door Inswing	IPD3	French	<0.3	220 Pa (4.59 psf)	R-PG30 SHD	+1920 Pa (40.10 psf)	-2160 Pa (45.11 psf)	74.19	1884	98.72	2507
Heritage Series Entrance Door Outswing	IPD4	French	<0.3	470 Pa (9.82 psf)	LC-PG65 SHD	+3120 Pa (65.16 psf)	-3360 Pa (70.18 psf)	74.88	1902	98.59	2504
Heritage Series Entrance Door Outswing 2.25" panels	IPD4	French	<0.3	470 Pa (9.82 psf)	LC-PG65 SHD	+3120 Pa (65.16 psf)	-3360 Pa (70.18 psf)	74.88	1902	98.59	2504
Heritage Series Sliding Patio Door Sidelite	IPD4	Single	<0.3	470 Pa (9.82 psf)	CW-PG65 FD	+3120 Pa (65.16 psf)	-3360 Pa (70.18 psf)	50.5	1283	98.44	2500
Heritage Series Sliding Patio Door	IPD4	Two Panel	<0.3	330 Pa (6.89 psf)	LC-PG45 SD	+2160 Pa (45.11 psf)	-2400 Pa (50.13 psf)	96	2438	98.44	2500

NOTE: IPD3 (Impact Performance, Missile D, Zone 3) = Wind Zone 3  
IPD4 (Impact Performance, Missile D, Zone 4) = Wind Zone 4

NOTES: Many Kolbe products meet or exceed various performance requirements, such as AAMA/WDMA/CSA 101/1.S.2/A440-11 & 17, CSA A440 S1-09 & 17, ASTM E1886 and E1996, and TAS 201, 202, 203.

# Performance | Heritage Series

To see the most current product information – including configuration, ratings, maximum size tested, Florida and Texas approval numbers – please visit [kolbewindows.com/performance-class-grade](http://kolbewindows.com/performance-class-grade).

HVHZ LMI Product	Max Size (Single Units)	Max Pressure (Single Units)
<b>Heritage Series Doors</b>		
Heritage Series Outswing French Door - Rectangular & Radius (mullid units available) <sup>1</sup>	6-0 x 6-10	+70/-70
	6-0 x 8-0	+65/-65
Heritage Series Outswing Single Door, Operating & Fixed - Rectangular & Radius (mullid units available) <sup>1</sup>	3-0 x 6-10	+70/-70
	3-0 x 8-0	+65/-65
Heritage Series Outswing Door Transom - Rectangular & Radius (mullid units available) <sup>1</sup>	74-7/8 x 60 <sup>2</sup>	+70/-70

NOTE: HVHZ LMI = High Velocity Hurricane Zone, Large Missile Impact

<sup>1</sup> Allowable pressures shall be the lesser of the mull and that specified for the individual units.

<sup>2</sup> Additional sizes and pressures are available for fixed units.

Please contact your Kolbe dealer for more information and the engineering documents.

NOTES: Many Kolbe products meet or exceed various performance requirements, such as AAMA/WDMA/CSA 101/I.S.2/A440-11 & 17, CSA A440 S1-09 & 17, ASTM E1886 and E1996, and TAS 201, 202, 203.



# Forgent Series

To see the most current product information – including configuration, ratings, maximum size tested, Florida and Texas approval numbers – please visit [kolbewindows.com/performance-class-grade](http://kolbewindows.com/performance-class-grade).

All Forgent Series certifications apply to both All Glastra and Glastra/Wood products.

Product	Kolbe Performance	Product Configuration	Air Infiltration (CFM/FT <sup>2</sup> @ 1.57 PSF)	Water Tested to PA (PSF)	Performance Class and Grade	Design Pressure PA (PSF)		Max Width		Max Height	
						Positive	Negative	Inches	(MM)	Inches	(MM)
<b>Forgent Series Windows &amp; Complementary Doors</b>											
Forgent Series Crank-Out Awning	IPD4	Single	<0.3	440 Pa (9.19 psf)	LC-PG60 AP	+2880 Pa (60.15 psf)	-2880 Pa (60.15 psf)	47.5	1206	47.5	1206
Forgent Series Crank-Out Casement	IPD4	Single	<0.3	470 Pa (9.82 psf)	LC-PG65 C	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	35.5	902	71.5	1816
Forgent Series Casement Direct Set	IPD4	Single	<0.3	470 Pa (9.82 psf)	LC-PG65 FW	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	28.5	724	71.5	1816
Forgent Series Casement Direct Set	IPD4	Single	<0.3	400 Pa (8.35 psf)	LC-PG55 FW	+2640 Pa (55.14 psf)	-2640 Pa (55.14 psf)	35.5	902	71.5	1816
Forgent Series Casement Direct Set	IPD4	Single	<0.3	470 Pa (9.82 psf)	LC-PG65 FW	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	55.5	1410	85.5	2172
Forgent Series New Construction Double Hung Direct Set	IPD4	Single	<0.3	470 Pa (9.82 psf)	LC-PG65 FW	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	28.5	724	71.5	1816
Forgent Series New Construction Double Hung Direct Set	IPD4	Single	<0.3	470 Pa (9.82 psf)	LC-PG65 FW	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	59.5	1511	85.5	2172
Forgent Series Casement Picture Sash Set	IPD4	Single	<0.3	470 Pa (9.82 psf)	LC-PG65 FW	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	71.5	1816	71.5	1816
Forgent Series New Construction Double Hung	IPD4	Single	<0.3	400 Pa (8.35 psf)	LC-PG55 H	+2640 Pa (55.14 psf)	-2640 Pa (55.14 psf)	44	1118	75	1905
Forgent Series New Construction Double Hung Picture	IPD4	Single	<0.3	470 Pa (9.82 psf)	LC-PG65 FW	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	60	1524	80	2032
Forgent Series New Construction Sliding Window	IPD4	Single	<0.3	360 Pa (7.52 psf)	LC-PG50 HS	+2400 Pa (50.13 psf)	-2400 Pa (50.13 psf)	71.5	1816	59.5	1511
Forgent Series Replacement Double Hung Direct Set	IPD4	Single	<0.3	470 Pa (9.82 psf)	LC-PG65 FW	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	28.5	724	71.5	1816
Forgent Series Replacement Double Hung Direct Set	IPD4	Single	<0.3	470 Pa (9.82 psf)	LC-PG65 FW	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	59.5	1511	85.5	2172
Forgent Series Replacement Double Hung	IPD4	Single	<0.3	400 Pa (8.35 psf)	LC-PG55 H	+2640 Pa (55.14 psf)	-2640 Pa (55.14 psf)	44	1118	75	1905
Forgent Series Replacement Double Hung Picture	IPD4	Single	<0.3	470 Pa (9.82 psf)	LC-PG65 FW	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	60	1524	80	2032
Forgent Series Replacement Sliding Window	IPD4	Single	<0.3	360 Pa (7.52 psf)	LC-PG50 HS	+2400 Pa (50.13 psf)	-2400 Pa (50.13 psf)	71.5	1816	59.5	1511
Forgent Complementary Sliding Patio Door	IPD4	Two Panel	<0.3	360 Pa (7.52 psf)	LC-PG50 SD	+2400 Pa (50.13 psf)	-2400 Pa (50.13 psf)	96	2438	96	2438
Forgent Complementary Sliding Patio Door	IPD4	Four Panel	<0.3	290 Pa (6.06 psf)	LC-PG40 SD	+1920 Pa (40.10 psf)	-2160 Pa (45.11 psf)	168	4267	96	2438

NOTE: IPD3 (Impact Performance, Missile D, Zone 3) = Wind Zone 3

IPD4 (Impact Performance, Missile D, Zone 4) = Wind Zone 4

\* Allowable mulled assembly pressure shall be the lesser of the pressure based on mullion span and load width, and that specified for the individual window units.

NOTES: Many Kolbe products meet or exceed various performance requirements, such as AAMA/WDMA/CSA 101/1.5.2/A440-11 & 17, CSA A440 S1-09 & 17, ASTM E1886 and E1996, and TAS 201, 202, 203.

# Performance | Terminology



## Energy Performance Terminology

- ▶ U-Factor refers to a measure of heat transfer through the window or door unit. A lower U-factor means less heat escapes during winter weather, thus reducing heating costs in cold climates.
- ▶ R-Value refers to resistance to heat flow. A high R-value indicates that a window or door has good heat insulating properties.
- ▶ Solar Heat Gain Coefficient (SHGC) is a measure of how much solar energy passes through a unit's glass. The lower a window or door unit's SHGC, the less solar heat is transmitted into a room, thus allowing for lower cooling bills in hot climates.
- ▶ Visible Transmittance (VT) is a measure of the portion of visible light that passes through a window or door. The higher a window or door unit's VT total, the more visible light is transmitted into a room. This value is influenced by both the glass selection and by the ratio of glazing to frame area.

Energy performance data and air, water, and structural data is updated on a continuous basis. For the most current information, contact your local Kolbe dealer.

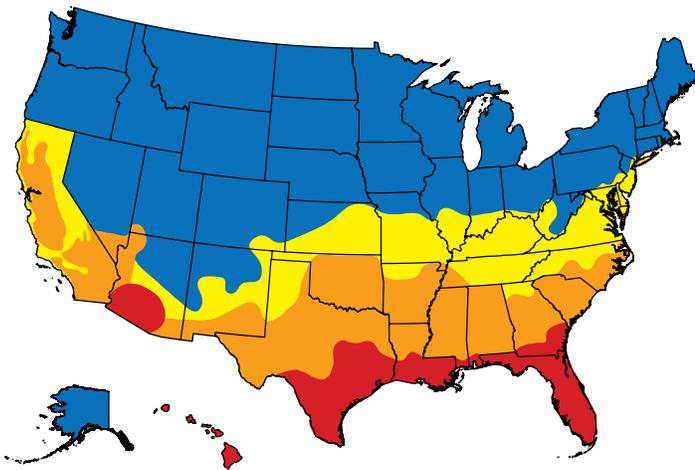
## ENERGY STAR® – United States



ENERGY STAR is a government-regulated program that was created by the Environmental Protection Agency (EPA), and the U.S. Department of Energy (DOE), to help consumers quickly and easily identify energy saving products. The ENERGY STAR program uses energy values obtained by window and door manufacturers through the National Fenestration Rating Council (NFRC) program. NFRC ratings are based on the energy performance of the total window or door – both glass and frame.

The ENERGY STAR program for the United States divides the nation into four separate climate zones – Northern, North-Central, South-Central, and Southern.

The performance criteria that needs to be met in order to be ENERGY STAR compliant in a specific climate zone (effective January 1, 2015) is shown in the charts provided.



- **Northern**  
Mostly Heating
- **South-Central**  
Heating & Cooling
- **North-Central**  
Heating & Cooling
- **Southern**  
Mostly Cooling

### 2016 ENERGY STAR Qualification Criteria for Windows

Climate Zones - U.S.		U-Factor	SHGC
	Northern**	≤ 0.27	Any
	Northern**	= 0.28	≥ 0.32
	Northern**	= 0.29	≥ 0.37
	Northern**	= 0.30	≥ 0.42
	North-Central	≤ 0.30	≤ 0.40
	South-Central	≤ 0.30	≤ 0.25
	Southern	≤ 0.40	≤ 0.25

\*\*Northern zone windows can meet prescriptive (1st row) or alternative energy performance (2nd, 3rd, and 4th rows) criteria to qualify for ENERGY STAR.

### 2015 ENERGY STAR Qualification Criteria for Doors

Glazing	U-Factor	SHGC	
Opaque	≤ 0.17	No rating	
≤ 1/2-Lite	≤ 0.25	≤ 0.25	
> 1/2-Lite	≤ 0.30	Northern North-Central	≤ 0.40
		Southern South-Central	≤ 0.25

## California's Title 24

Many of Kolbe's windows and doors can meet the strict California Title 24 Building Energy Efficiency Standards. Talk to your dealer about products with glass options that help meet these stringent energy efficiency requirements, yet have a variety of options for customization.

**For energy performance data, visit:**

▶ [www.kolbewindows.com/energy-data](http://www.kolbewindows.com/energy-data)

Kolbe demonstrates a commitment to providing accurate energy data by having products independently simulated, tested, inspected and listed in the NFRC certification program, and making that data available at [kolbewindows.com](http://kolbewindows.com) and on window labels.

Energy performance data and air, water, structural data is updated on a continuous basis. For the most current information, contact your local Kolbe dealer.



# KOLBE

WINDOWS & DOORS

We're for the visionaries.®

1323 S. 11th Avenue | Wausau, WI 54401-5998  
715.842.5666

[www.kolbewindows.com](http://www.kolbewindows.com)

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