

# K-FORCE® IMPACT PRODUCTS



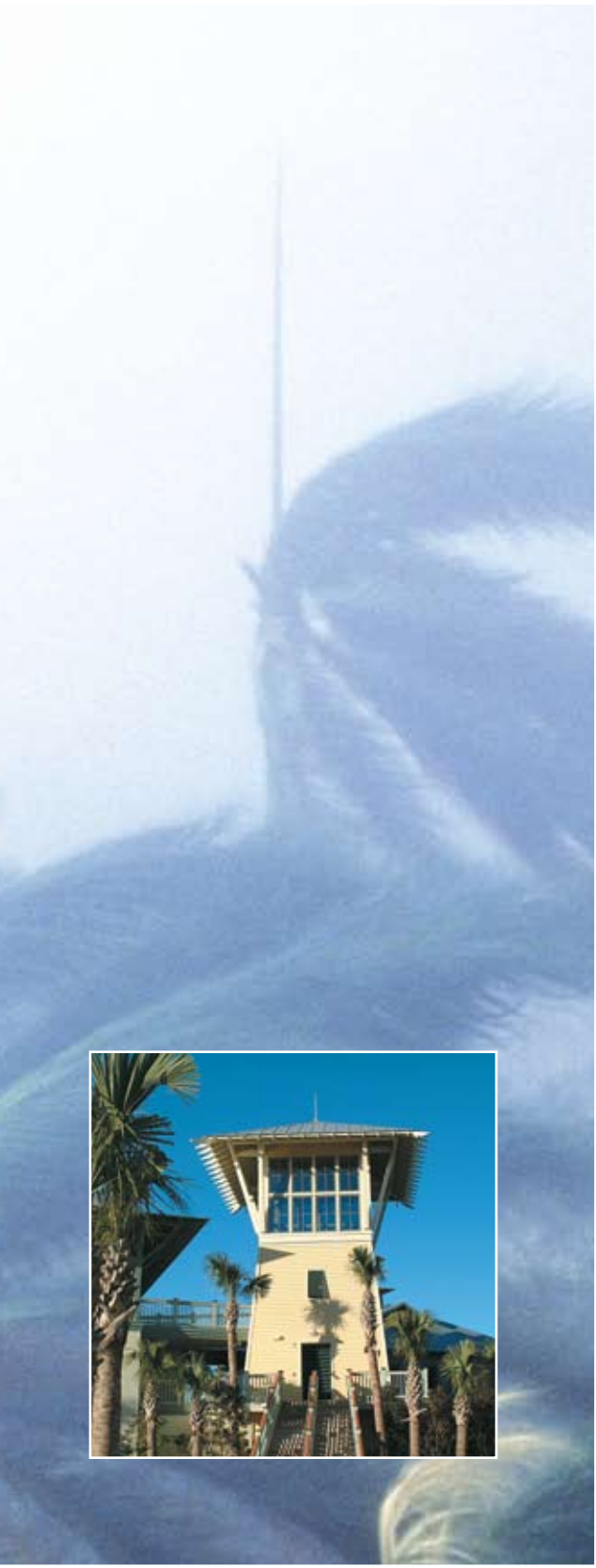
**KOLBE**  
■ WINDOWS & DOORS ■

*See the Difference Quality Makes®*

# KOLBE

K-FORCE® IMPACT PRODUCTS





## Protection and Beauty Like No Other

As we've seen, hurricane force winds can wreak havoc on a coastal community bringing about massive devastation. Kolbe® understands the need to protect your home and personal belongings from these harsh environmental conditions. K-Force® impact products are specially designed with great strength and durability to withstand hurricane force winds and flying debris. Window and door units are tested extensively to meet or exceed the strict building codes of the coastal region.

Attention to detail makes K-Force impact products stand out from the rest. We know that the look of your windows and doors and the ease of operation matter as much as the security they provide. That is why K-Force impact products have the same beautiful appearance for which Kolbe windows and doors are known. No unsightly brackets or visible rods holding the sash in place. No extra locks to fasten in order for the units to be at the highest performance against the elements. K-Force impact products are no-nonsense so you can concentrate on your own safety.

**K·FORCE**  
I M P A C T P R O D U C T S

# KOLBE HIGH PERFORMANCE GLAZING

## LAMINATED GLASS

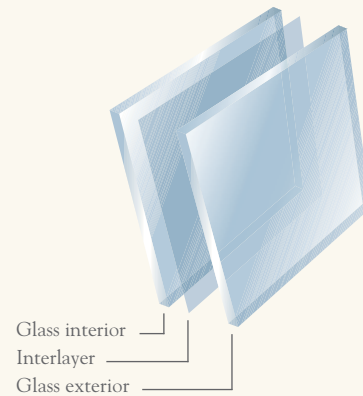
The durability of the glass utilized in impact products is one of the most important elements to keep you and your home safe and secure. K-Force impact products use impact laminated glass that is designed to stay intact if the glass is broken. What makes it so durable is the specially designed interlayer between the glass. Each K-Force 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. K-Force 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

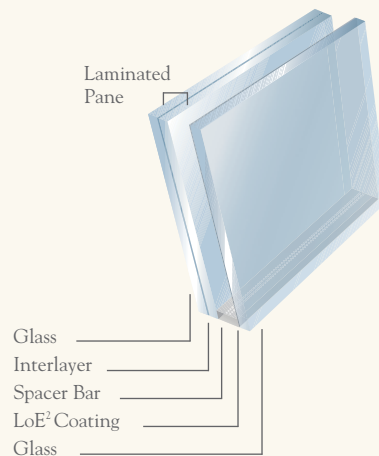
K-Force impact products are uniquely designed with a specialized glazing retention system. This glazing system ensures that the unit will hold the glass securely in place. Ultra Series extruded clad and Heritage Series wood products with K-Force impact performance modifications are available as either single pane or double pane units. If double pane insulating glass is chosen, the LoE<sup>2</sup> coating will help improve energy efficiency by reducing solar heat gain. Windquest<sup>®</sup> Series vinyl units are glazed as standard with double pane insulating laminated glass with LoE<sup>2</sup> coating.



### Single Pane Unit



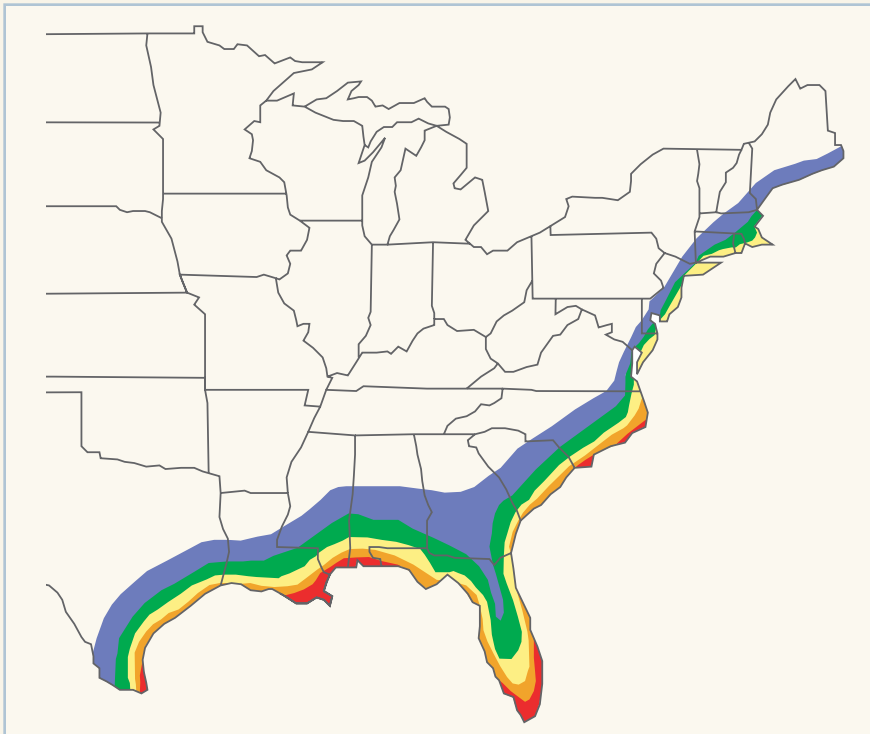
### Double Pane Insulating Unit



**NOTE:**

For more information about the energy performance of K-Force impact products, please refer to the charts on pages 6-9.

# WIND ZONES



## ASCE-7 Standards

- 130 to 150 mph
- 120 to 130 mph
- 110 to 120 mph
- 100 to 110 mph
- 90 to 100 mph
- all others

## Zone 1

### Category 3 Hurricane

110 mph and up to, but not including, 120 mph and Hawaii. Design 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 ft. long 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.

## Zone 2

### Category 3 Hurricane

120 mph and up to, but not including, 130 mph and 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.

NOTE: Codes for local jurisdictions may vary.

## Zone 3

### Category 4 Hurricane

130 mph and up to 140 mph, or 120 mph and up to 140 mph and within one mile of the mean high tide line. Design pressures in this zone can approach 65 psf for negative loads. The I-codes specifically require wind-borne debris construction in this zone. Windows and doors must be designed to withstand an impact of an 8 ft. long 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.

## Zone 4

### Category 4 Hurricane

This is considered a high velocity wind zone and encompasses all areas with wind speeds in excess of 140 mph. Design pressures in this zone often exceed 65 psf and can approach 110 psf. Wind-borne debris requirements include everything from zone 3, as well as multiple impacts per test unit and mullions.

# K-FORCE<sup>®</sup> APPROVED PRODUCTS

Product Description	Size	Glazing	Performance	Perform. Grade	FL #	TDI #	HVHZ	Dade NOA #	U-Factor	SHGC	VT	CR
Ultra Series: Extruded Aluminum Clad												
Crank-out Casement	36 x 72	IG	Impact 4	DP65	9837	WIN-779	Yes	No	0.35	0.25	0.44	54
Crank-out Casement	36 x 72	IG	Impact 4	DP85	7421	In Process	No	No	0.35	0.25	0.44	54
Crank-out Casement	36 x 72	IG Temp	Impact 4	DP85	7421	In Process	No	No	0.35	0.25	0.44	54
Crank-out Casement	36 x 72	SG	Impact 4	DP85	7421	In Process	No	No	N/A	N/A	N/A	N/A
Crank-out Casement	36 x 90	IG	Impact 3	DP85	11380	WIN-779	No	No	0.35	0.25	0.44	54
Crank-out Casement Half-Circle Top	36 x 72	IG	Impact 4	DP70	7421	In Process	No	No	0.35	0.25	0.44	54
Crank-out Casement Half-Circle Top	36 x 72	SG	Impact 4	DP65	In Process	In Process	No	No	N/A	N/A	N/A	N/A
Crank-out Casement Quarter-Circle Top	36 x 72	IG	Impact 4	DP60	7421	In Process	No	No	0.35	0.25	0.44	54
Crank-out Casement Quarter-Circle Top	36 x 72	SG	Impact 4	DP60	In Process	In Process	No	No	N/A	N/A	N/A	N/A
Crank-out Casement Segment Head	36 x 72	IG	Impact 4	DP60	7421	In Process	No	No	0.35	0.25	0.44	54
Crank-out Casement Segment Head	36 x 72	SG	Impact 4	DP60	In Process	In Process	No	No	N/A	N/A	N/A	N/A
Fixed Crank-out Casement	60 x 72	IG	Impact 4	DP65	9906	In Process	Yes	No	0.32	0.29	0.52	54
Fixed Crank-out Casement	96 x 60	IG	Impact 4	DP75	7812	In Process	No	No	0.32	0.29	0.52	54
Fixed Crank-out Casement	96 x 60	SG	Impact 4	DP75	7812	In Process	No	No	N/A	N/A	N/A	N/A
Crank-out Casement w/ Fixed Casement - Vertical Mull	96.25 x 72	SG	Impact 4	DP65	9837	In Process	No	No	See separate casement & fixed info			
Push-out Casement (Multi-point)	36 x 72	IG	Impact 3	DP85	9133	WIN-1062	No	No	0.38	0.23	0.41	53
Push-out Casement (Multi-point)	36 x 72	SG	Impact 4	DP85	9133	WIN-1062	No	No	0.77	0.47	0.53	15
Push-out Casement (Multi-point) Half-Circle Top	36 x 72	IG	Impact 3	DP60	9133	WIN-1062	No	No	0.38	0.23	0.41	53
Push-out Casement (Multi-point) Half-Circle Top	36 x 72	SG	Impact 4	DP60	9133	WIN-1062	No	No	0.77	0.47	0.53	15
Push-out Casement (Multi-point) Segment Head	36 x 72	IG	Impact 3	DP85	9133	WIN-1062	No	No	0.38	0.23	0.41	53
Push-out Casement (Multi-point) Segment Head	36 x 72	SG	Impact 4	DP85	9133	WIN-1062	No	No	0.77	0.47	0.53	15
Push-out Casement (Multi-point) Quarter-Circle Top	36 x 72	IG	Impact 3	DP70	9837	WIN-1062	No	No	0.38	0.23	0.41	53
Push-out Casement (Multi-point) Quarter-Circle Top	36 x 72	SG	Impact 4	DP70	9133	WIN-1062	No	No	0.77	0.47	0.53	15
Crank-out Awning	48 x 36	IG	Impact 4	DP85	14076	In Process	No	No	0.34	0.24	0.44	53
Crank-out Awning	48 x 36	SG	Impact 4	DP85	14076	In Process	No	No	N/A	N/A	N/A	N/A
Crank-out Awning	48 x 36	IG Temp	Impact 4	DP85	14076	In Process	No	No	0.34	0.24	0.44	53
Sterling Double Hung	45.5 x 80.44	IG	Impact 4	DP65	10398	WIN-591	No	No	0.35	0.27	0.47	51
Sterling Double Hung	45.5 x 80.44	SG	Impact 3	DP65	11310	WIN-591	No	No	0.82	0.55	0.61	15
Sterling Double Hung Studio	54 x 80.44	IG	Impact 4	DP65	9906	In Process	Yes	No	0.32	0.28	0.50	51
Sterling Double Hung Studio	65 x 80.44	SG	Impact 4	DP65	11250	In Process	No	No	0.78	0.54	0.63	16
Sterling Double Hung Direct Set Transom	107 x 72	IG	Impact 4	DP65	In Process	In Process	No	No	N/A	N/A	N/A	N/A
Sterling Double Hung Transom	91 x 29.5	IG	Impact 4	DP65	11250	In Process	No	No	0.33	0.25	0.45	54
Sterling Double Hung Transom	91 x 29.5	SG	Impact 4	DP65	11250	In Process	No	No	N/A	N/A	N/A	N/A
Sterling Double Hung Transom	76 x 60	IG	Impact 4	DP65	7812	In Process	No	No	0.33	0.25	0.45	54
Sterling Double Hung Transom	76 x 60	SG	Impact 4	DP65	13091	In Process	No	No	N/A	N/A	N/A	N/A
Sterling Double Hung w/ Transom - Horizontal Mull	35.5 x 114	IG	Impact 4	DP65	14198	In Process	No	No	See separate DH & transom info			
Sterling Double Hung w/ Transom - Horizontal Mull	35.5 x 114	IG Temp	Impact 4	DP65	14198	In Process	No	No	See separate DH & transom info			
Majesta Double Hung	56 x 96	IG	Impact 4	DP65	14301	In Process	No	No	0.31	0.24	0.44	51
Majesta Double Hung	56 x 96	IG Temp	Impact 4	DP65	14301	In Process	No	No	0.31	0.24	0.44	51
Ogee Direct Set	80 x 72	IG	Impact 4	DP85	7812	In Process	No	No	0.28	0.31	0.57	51

## NOTES:

- > K-Force impact products are tested according to ASTM E 1996 and E 1886.
- > Units smaller than the sizes listed in the chart qualify as K-Force approved products.
- > All Ultra Series and Heritage Series mulled impact units require 1/4" steel stiffeners.
- > Test data is updated every month. For the most up-to-date test results or more detailed information, visit the Kolbe website at [www.kolbe-kolbe.com](http://www.kolbe-kolbe.com).
- > For additional information on impact products visit the Florida Department of Community Affairs website at [www.floridabuilding.org](http://www.floridabuilding.org) or Texas Department of Insurance website at [www.tdi.state.tx.us](http://www.tdi.state.tx.us).

Product Description	Size	Glazing	Performance	Perform. Grade	FL #	TDI #	HVHZ	Dade NOA #	U-Factor	SHGC	VT	CR
<b>Ultra Series: Extruded Aluminum Clad</b>												
Garden-Aire Sliding Patio Door Wide Stile	96 x 98.44	IG	Impact 4	DP45	13785	In Process	No	No	0.35	0.23	0.41	49
Garden-Aire Sliding Patio Door Wide Stile	96 x 98.44	SG	Impact 4	DP55	13785	In Process	No	No	0.72	0.45	0.53	16
Garden-Aire Sliding Patio Door Wide Stile	96 x 82.44	SG	Impact 4	DP65	9818	In Process	No	No	0.72	0.45	0.53	16
Garden-Aire Sliding Patio Door Sidelite Wide Stile	50.5 x 98.44	IG	Impact 4	DP65	13785	In Process	No	No	0.34	0.22	0.39	57
Garden-Aire Sliding Patio Door Sidelite Wide Stile	50.5 x 98.44	SG	Impact 4	DP65	13785	In Process	No	No	0.70	0.41	0.48	16
Garden-Aire Sliding Patio Door Transom	74.88 x 60	SG	Dade Impact 4	DP70	1648	WIN-386	No	07-0618.14	N/A	N/A	N/A	N/A
TerraSpan Lift & Slide Door (RRRRP) Flush Sill	231.34 x 98.81	IG	Impact 4	DP50	13174	In Process	No	No	0.34	0.24	0.43	50
Inswing Door French	74.19 x 98.72	IG	Impact 3	DP20	In Process	DR-458	No	No	0.33	0.22	0.39	55
Inswing Door Sidelite Narrow Stile	50.13 x 98.72	IG	Impact 4	DP65	12755	In Process	No	No	N/A	N/A	N/A	N/A
Outswing Door French	74.88 x 98.59	IG	Impact 3	DP65	10765	In Process	No	No	0.33	0.22	0.38	53
Outswing Door French	74.88 x 98.59	SG	Impact 4	DP65	10765	In Process	No	No	N/A	N/A	N/A	N/A
Outswing Door French	74.88 x 98.59	SG	Dade Impact 4	DP65	1665	No	Yes	07-0618.15	N/A	N/A	N/A	N/A
Outswing Door French Raised Panel	74.88 x 98.59	IG	Impact 3	DP65	10765	In Process	No	No	0.38	0.10	0.16	N/A
Outswing Door French Raised Panel	74.88 x 98.59	SG	Impact 4	DP65	10765	In Process	No	No	N/A	N/A	N/A	N/A
Outswing Door French w/ Transom - Horizontal Mull	74.88 x 158.84	SG	Dade Impact 4	DP65	1665	No	Yes	07-0618.15	See separate door & transom info			
Outswing Door French w/ Transom - Horizontal Mull	74.88 x 158.84	SG	Impact 4	DP65	In Process	In Process	No	No	See separate door & transom info			
Outswing Door Sidelite Narrow Stile	50.13 x 98.59	IG	Impact 3	DP60	12508	In Process	No	No	N/A	N/A	N/A	N/A
Outswing Door Sidelite Narrow Stile	50.13 x 98.59	SG	Impact 4	DP65	12755	In Process	No	No	N/A	N/A	N/A	N/A
Outswing Door Sidelite Narrow Stile w/ Raised Panels	50.13 x 98.59	IG	Impact 3	DP60	12508	In Process	No	No	N/A	N/A	N/A	N/A
Outswing Door Sidelite Narrow Stile w/ Raised Panels	50.13 x 98.59	SG	Impact 4	DP65	12755	In Process	No	No	N/A	N/A	N/A	N/A
2-1/4" Outswing Door	38.22 x 122.59	IG	Impact 4	DP65	10765	In Process	No	No	0.33	0.22	0.38	53
2-1/4" Outswing Door French	74.88 x 122.59	IG	Impact 4	DP65	10765	In Process	No	No	0.33	0.22	0.38	53
2-1/4" Outswing Door Stat/French/Stat - Vertical Mulls	151.64 x 122.56	IG	Impact 4	DP65	12755	In Process	No	No	0.33	0.22	0.38	53
<b>Heritage Series: Wood</b>												
Crank-out Casement	36 x 72	IG	Impact 3	DP65	12452	In Process	No	No	0.29	0.25	0.46	56
Crank-out Casement	36 x 72	SG	Impact 4	DP65	7421	In Process	No	No	N/A	N/A	N/A	N/A
Fixed Crank-out Casement	60 x 72	IG	Impact 4	DP65	12072	WIN-426	No	No	0.29	0.29	0.53	56
Fixed Crank-out Casement	96 x 60	IG	Impact 4	DP65	13091	WIN-426	No	No	0.29	0.29	0.53	56
Fixed Crank-out Casement	96 x 60	SG	Impact 4	DP65	7812	In Process	No	No	N/A	N/A	N/A	N/A
Push-out Casement (Multi-point)	36 x 72	IG	Impact 4	DP65	7421	In Process	No	No	0.30	0.23	0.41	58
Push-out Casement (Multi-point)	36 x 72	IG Temp	Impact 4	DP65	7421	In Process	No	No	0.30	0.23	0.41	58
Push-out Casement (Multi-point) Half-Circle Top	36 x 72	IG	Impact 3	DP60	11002	WIN-851	No	No	0.30	0.23	0.41	58
Push-out Casement (Multi-point) Half-Circle Top	36 x 72	SG	Impact 4	DP60	11002	WIN-851	No	No	N/A	N/A	N/A	N/A
Push-out Casement (Multi-point) Segment Head	36 x 72	IG	Impact 3	DP65	11002	WIN-851	No	No	0.30	0.23	0.41	58
Push-out Casement (Multi-point) Segment Head	36 x 72	SG	Impact 4	DP65	11002	WIN-851	No	No	N/A	N/A	N/A	N/A
Push-out Casement (Multi-point) Quarter-Circle Top	36 x 72	IG	Impact 3	DP45	11002	WIN-851	No	No	0.30	0.23	0.41	58
Push-out Casement (Multi-point) Quarter-Circle Top	36 x 72	SG	Impact 4	DP45	11002	WIN-851	No	No	N/A	N/A	N/A	N/A
Crank-out Awning	48 x 36	IG	Impact 4	DP65	13480	In Process	No	No	0.29	0.25	0.46	55
Crank-out Awning	48 x 36	SG	Impact 4	DP65	13480	In Process	No	No	N/A	N/A	N/A	N/A

For the glazing column, the thermal values represent:  
IG (insulating glazing) = LoE<sup>2</sup>-270 w/ argon, no PDL  
SG (single glazing) = clear, no PDL  
FL = State of Florida Product Approval number  
TDI = Texas Department of Insurance evaluation number  
HVHZ = High Velocity Hurricane Zone approved  
Miami-Dade NOA = Miami-Dade County Notice of Acceptance

Product Description	Size	Glazing	Performance	Perform. Grade	FL #	TDI #	HVHZ	Dade NOA #	U-Factor	SHGC	VT	CR
Heritage Series: Wood												
Sterling Double Hung	45.5 x 80.44	IG	Impact 3	DP60	12955	In Process	No	No	0.32	0.27	0.47	53
Sterling Double Hung Studio	57.5 x 80.44	IG	Impact 3	DP65	12072	WIN-554	No	No	0.30	0.27	0.50	55
Sterling Double Hung Studio	65 x 80.44	SG	Impact 4	DP65	12072	WIN-554	No	No	0.76	0.54	0.63	17
Sterling Double Hung Transom	91 x 29.5	IG	Impact 3	DP65	12072	WIN-567	No	No	0.27	0.28	0.53	58
Sterling Double Hung Transom	91 x 29.5	SG	Impact 4	DP65	12072	WIN-567	No	No	0.79	0.58	0.66	16
Sterling Double Hung Transom	76 x 60	IG	Impact 4	DP65	13091	WIN-567	No	No	0.27	0.28	0.53	58
Sterling Double Hung Transom	76 x 60	SG	Impact 4	DP65	13091	WIN-567	No	No	0.79	0.58	0.66	16
Garden-Aire Sliding Patio Door Wide Stile	96 x 98.44	IG	Impact 4	DP45	13785	In Process	No	No	0.32	0.23	0.41	53
Garden-Aire Sliding Patio Door Wide Stile	96 x 98.44	SG	Impact 4	DP50	13785	In Process	No	No	0.70	0.45	0.53	17
Garden-Aire Sliding Patio Door Sidelite Wide Stile	50.5 x 98.44	IG	Impact 4	DP65	13785	In Process	No	No	0.33	0.16	0.28	57
Garden-Aire Sliding Patio Door Sidelite Wide Stile	50.5 x 98.44	SG	Impact 4	DP65	13785	In Process	No	No	0.58	0.30	0.35	17
Inswing Door French	74.19 x 98.72	IG	Impact 3	DP25	12755	DR-457	No	No	0.31	0.22	0.39	58
Inswing Door Sidelite Narrow Stile	50.13 x 98.72	IG	Impact 4	DP65	In Process	In Process	No	No	N/A	N/A	N/A	N/A
Outswing Door French	74.88 x 98.59	IG	Impact 3	DP65	12755	DR-153	No	No	0.33	0.22	0.38	56
Outswing Door French	74.88 x 82.59	SG	Dade Impact 4	DP70	1665	No	Yes	07-0618.12	0.68	0.41	0.48	17
Outswing Door French Half-Circle Top	74.88 x 98.59	SG	Dade Impact 4	DP65	1665	No	Yes	07-0618.12	0.68	0.41	0.48	17
Outswing Door French Segment Head	74.88 x 98.59	SG	Dade Impact 4	DP65	1665	No	Yes	07-0618.12	0.68	0.41	0.48	17
Outswing Door French w/ Transom - Horizontal Mull	74.88 x 158.84	SG	Dade Impact 4	DP65	1665	No	Yes	07-0618.12	See separate door & transom info			
Outswing Door Stat/Act w/ Transom - Horizontal Mull	74.88 x 158.84	SG	Dade Impact 4	DP65	1665	No	Yes	07-0618.12	See separate door & transom info			
Outswing Door Act/French/Stat - Vertical Mulls	151.72 x 98.59	SG	Dade Impact 4	DP65	1665	No	Yes	07-0618.12	0.68	0.41	0.48	17
Outswing Door Sidelite Narrow Stile	50.13 x 98.59	IG	Impact 3	DP65	12755	DR-156	No	No	0.32	0.21	0.38	56
Outswing Door Sidelite Narrow Stile	50.13 x 98.59	SG	Impact 4	DP65	12755	DR-156	No	No	0.68	0.43	0.48	15
Outswing Door Transom	84 x 48	IG	Impact 4	DP65	7812	In Process	No	No	0.29	0.24	0.44	59
Outswing Door Transom	96 x 60	SG	Impact 4	DP65	7812	In Process	No	No	0.74	0.45	0.53	17
Outswing Door Transom	120 x 30.5	SG	Impact 4	DP65	13091	In Process	No	No	0.74	0.45	0.53	17
Outswing Door Transom Half-Circle Top with Legs	74.88 x 60	SG	Dade Impact 4	DP70	1648	No	Yes	07-0618.13	0.74	0.45	0.53	17
Outswing Door Transom Half-Circle Top	74.88 x 37.44	SG	Dade Impact 4	DP70	1648	No	Yes	07-0618.13	0.74	0.45	0.53	17

## ENERGY PERFORMANCE DATA GLOSSARY

**U-Factor Total** – The term “U-factor” refers to a measure of heat transfer through the window or door unit. The U Total values are for the entire window or door. A lower U-factor means less heat escapes during winter weather, thus reducing heating costs in cold climates.

**SHGC Total** – The Solar Heat Gain Coefficient is a measure of how much solar energy is passing through the 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.

**VT Total** – Visible Transmittance 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 and frame area.

**CR Total** – Condensation Resistance measures the ability to resist the formation of condensation on the interior surface of that product. The higher the CR rating, the better that product is at resisting condensation formation. While this rating cannot predict condensation, it can provide a credible method of comparing the potential of various products for condensation formation.



Product Description	Size	Glazing	Performance	Perform. Grade	FL #	TDI #	HVHZ	Dade NOA #	U-Factor	SHGC	VT	CR
Windquest® Series: Vinyl												
Crank-out Casement	36 x 72	IG	Dade Impact 4	DP70	In Process	In Process	Yes	08-0324.16	0.27	0.28	0.44	60
Crank-out Awning	53 x 32	IG	Dade Impact 4	DP60	In Process	In Process	Yes	08-0324.19	0.27	0.28	0.44	58
Studio	53 x 77	IG	Dade Impact 4	DP70	8127	WIN-974	Yes	08-0324.18	0.26	0.34	0.53	61
Double Hung	52 x 75	IG	Dade Impact 4	DP70	13755	In Process	Yes	10-0603.01	0.31	0.32	0.50	58
Single Hung	52 x 75	IG	Dade Impact 4	DP70	In Process	WIN-977	Yes	08-0324.15	0.30	0.33	0.52	56
Single Slider	74 x 60	IG	Dade Impact 4	DP50	In Process	WIN-975	Yes	08-0324.14	0.30	0.33	0.51	57
Sliding Door	71.25 x 96	IG	Dade Impact 4	DP50	9044	DR-337	Yes	08-0324.17	0.29	0.28	0.43	56
Sliding Door	95.25 x 95.25	IG	Dade Impact 4	DP50	In Process	In Process	Yes	In Process	0.29	0.28	0.43	56
Sliding Door Sidelite	51 x 96	IG	Dade Impact 4	DP50	In Process	In Process	Yes	In Process	In Process			
Single Horizontal or Vertical Mull	107 x 77	N/A	Dade Impact 4	DP70	8999	MU-14	Yes	09-0203.08	N/A	N/A	N/A	N/A
T-Mull or Plus-Mull	89 x 96	N/A	Dade Impact 4	DP70	8997	MU-14	Yes	09-0203.08	N/A	N/A	N/A	N/A

For the glazing column, the thermal values represent:

IG (insulating glazing) = LoE<sup>2</sup>-270 w/ argon, no PDL

FL = State of Florida Product Approval number

TDI = Texas Department of Insurance evaluation number

HVHZ = High Velocity Hurricane Zone approved

Miami-Dade NOA = Miami-Dade County Notice of Acceptance

NOTES:

- > Windquest Series impact products are tested according to ASTM E 1996 and E 1886.
- > Windquest Series impact products are tested according to Miami-Dade County HVHZ protocol.
- > Units smaller than the sizes listed in the chart above qualify as K-Force impact approved products.
- > Windquest impact units require field mulling with aluminum tube mulls.
- > Impact laminated glass with LoE<sup>2</sup>-270 with argon gas is the standard glass for Windquest K-Force impact certified products.
- > Test data is updated every month. For the most up-to-date test results or more detailed information, visit the Kolbe website at [www.kolbe-kolbe.com](http://www.kolbe-kolbe.com).
- > For additional information on impact products visit the Florida Department of Community Affairs website at [www.floridabuilding.org](http://www.floridabuilding.org) or Texas Department of Insurance website at [www.tdi.state.tx.us](http://www.tdi.state.tx.us).





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

715.842.5666

[www.kolbe-kolbe.com](http://www.kolbe-kolbe.com)