



# UniGrid™ Product Data Sheet

*Formerly Guardian 275® wall systems from Major Industries, Inc.*

## Fiberglass Reinforced Polymer Wall Systems



# Application

UniGrid™ translucent panel wall systems (formerly Guardian 275® by Major Industries, Inc.) consist of two fiberglass reinforced polymer (FRP) face sheets bonded to an aluminum grid core. Panels can be insulated and are available with thermal breaks. Panels are held in place by an aluminum framing system with EPDM gasketing and snap covers that reduce the need for visible fasteners for a clean, modern look. UniGrid™ panels are available in sizes up to 5 feet wide and 20 feet long (contact Kingspan Light + Air for details as loading requirements may vary by project location). Specialty systems including hurricane and blast protection systems, unitized systems, mixed glazed options and pre-assembled systems. Adapter panels, designed for retrofit into existing 1" glass framing, are also available.



## Features

1. 2.75" or 4" panel systems available
2. Extruded aluminum frame
3. Ultimate Series™ face sheet technology
4. Standard fastener covers
5. Snap-cap installation feature to eliminate exposed fasteners
6. EPDM gasketing
7. Guttered framing for enhanced moisture management
8. Maximum panel widths of 5 feet
9. Maximum panel lengths up to 20 feet (contact KLA for specific numbers related to your project location)
10. Anodize and paint finishes - standard and custom
11. Polyurethane glazing sealants

## Options

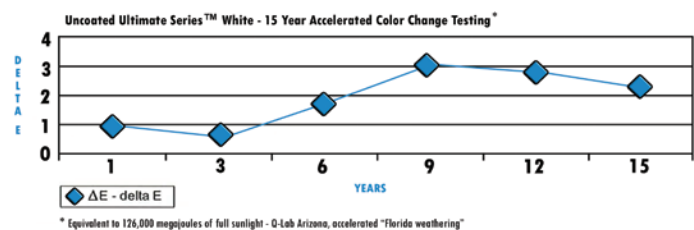
1. Thermally broken panels and framing available
2. Insulation options, including various densities and colored options
3. Mixed glazed and unitized systems available
4. Curved systems
5. Sheet color options include Desert Rose, Tan, Aqua - custom colors available - contact us for details and availability
6. Translucent adapter panel that retrofits into existing glass curtainwall framing
7. Specialty systems, including hurricane and blast protection, are also available



## Ultimate Series™ Face Sheet Technology

Ultimate Series™ exterior face sheets have been put through rigorous testing and offer exceptional weathering performance, all backed by a 25 year fiberbloom warranty and available 20 year color change warranty.

This breakthrough SunStrong™ PRS resin system and polymer coating combination is an effective long-term solution for achieving high quality, energy-efficient diffused natural daylighting.



# Testing Overview

Test Description	Test Procedure	Results & Comments
Code Compliance, IBC	ASTM D635, D1929, E84, UL 723	CC1 Rating (Interior Sheet) CC2 Rating (Exterior Sheet)
Uniform Load Structural / Spans	ASTM E330	Up to 100 psf. *Consult KLA for job specific span capabilities
High Velocity Hurricane Zone (HVHZ)	ASTM E1886 / E1996	Missile Impact Level D, Wind Zone 3, up to 65psf
Water Penetration	ASTM E331	Pass - 15 psf
Air Infiltration	ASTM E283	<0.3 CFM/ft <sup>2</sup> at 6.24 psf
Impact Strength	UL 972	Standard Exterior Sheet - five impacts at 50 ft-lbs High-Impact Exterior Sheet - 200 ft-lbs - no penetration High Impact Interior Sheet - 245 ft-lbs - no penetration Class "A" Sheet - 245 ft-lbs - no penetration
Adhesive Bond Strength	ASTM D1002 (shear) - Un-aged ASTM D1037 - Aged ASTM C297 (tensile) - Un-aged ASTM D1037 - Aged	lbf=Min 310, Avg 563, Max 837 lbf=Min 836, Avg 1212, Max 1669 Load=557.3 lbf Load=913.6 lbf
Taber Abrasion Test	ASTM D4060	Ultimate Series™ Exterior Sheet (White + Crystal) - 1000 cycles @ 500 grams = 32.5mg wt. loss
Color Difference*	ASTM D2244	$\Delta E = 2.86$ after 12 years

\*  $\Delta E$  readings on uncoated white samples exposed to 12 years full spectrum solar radiation. Accelerated per ASTM G90-05, Standard Practice for Performing Accelerated Outdoor Weathering of Nonmetallic Materials Using Concentrated Natural Sunlight.

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# Light Transmission + Thermal Performance

## NFRC Certified Data

UniGrid™ 2.75" SYSTEM VALUES	FACE SHEET COLOR COMBINATIONS		
	Exterior Sheet Color / Interior Sheet Color (Additional color combinations available)		
	Crystal / Crystal	Crystal / White	White / White
<b>Visible Transmittance - VT (Visible Light Transmittance - VLT %)<sup>1</sup></b>			
No Insulation	.45 (45%)	.25 (25%)	.14 (14%)
Insul 24	.25 (25%)	.19 (19%)	.13 (13%)
Insul 15	.19 (19%)	.15 (15%)	.10 (10%)
IMG 125	.06 (6%)	.06 (6%)	.04 (4%)
<b>Solar Heat Gain Coefficient<sup>2</sup></b>			
No Insulation	.45	.33	.20
Insul 24	.26	.21	.15
Insul 15	.24	.20	.14
IMG 125	.11	.11	.08

System U-Factor <sup>3</sup>	(Standard   Thermally Broken)	
No Insulation	.52 - .55	.51 - .52
Insul 24	.28 - .31	.27 - .28
Insul 15	.25 - .28	.24 - .25
IMG 125	.17 - .20	.17

UniGrid™ 4" SYSTEM VALUES	FACE SHEET COLOR COMBINATIONS		
	Exterior Sheet Color / Interior Sheet Color (Additional color combinations available)		
	Crystal / Crystal	Crystal / White	White / White
<b>Visible Transmittance -VT (Visible Light Transmittance - VLT %)*</b>			
Insul 10	.16 (16%)	.12 (12%)	.08 (8%)
IMG 125	.04 (4%)	.03 (3%)	.02 (2%)
<b>Solar Heat Gain Coefficient</b>			
Insul 10	.15	.16	.13
IMG 125	.07	.07	.06

System U-Factor	(Standard   Thermally Broken)	
Insul 10	.20	.18
IMG 125	.15	.13

<sup>1</sup> NFRC Certified System Visible Transmittance values determined using NFRC 202 methods and standards

<sup>2</sup> NFRC Certified System Solar Heat Gain values determined using NFRC 201 methods and standards, SHGC is 87% of the Shading Coefficient at a given solar incidence and has replaced the Shading Coefficient as it is a more accurate method of stating glazing performance in a building envelope. (SC = 1.15 x SHGC)

<sup>3</sup> NFRC Certified System U-factor values determined using NFRC 100-2020 methods and standards, which require simulation and validation testing of both standard and thermally improved assembled skylight / wall systems measuring 2000mm x 2000mm (78-3/4" x 78-3/4") consisting of 2 translucent panels, 3 vertical rafters / mullions and perimeter head and sill. Please contact us for project-specific information as these value may vary based on loading and spanning requirements.

\* Please note that Visible Transmittance, or VT, is determined using NFRC methods and standards and is not equal to center of panel light transmission as it takes into account framing and other factors.

Certified test results for these systems can be found at [www.nfrc.org](http://www.nfrc.org) under Kingspan Light + Air Fenestration/UniGrid™

## Center of Panel U-Factor\*

Center of Panel U-Factor - 2.75" / 4"	
Insul 24	.20
Insul 15	.17
IMG 125	.08
Center of Panel U-Factor - 4"	
Insul 10	.11
IMG 125	.06

\*Center of panel values determined by computer simulation using Window 5.2. Please note that center of panel values are for glazing comparison purposes only and are not meant as a replacement for system values when calculating overall system performance.

# Why Utilize NFRC Certified Test Data?

The products that go into a building's design are crucial to its performance and longevity. The only way to ensure that they are delivering the desired performance metrics is to know that they've been certified by an unbiased third-party organization with standing and credibility.

The National Fenestration Rating Council (NFRC) is a nonprofit organization that maintains an objective, independent energy efficiency and certification program for windows, doors, and skylights. The International Energy Conservation Code (IECC), the most widely adopted energy code in the United States, recognizes NFRC as the gold standard for rating fenestration products and systems.

NFRC ratings are crucial for windows, doors, and skylights because they test for and clearly indicate exact values with regard to:

## U-Factor

How well a product can keep heat from escaping a room. The lower the number, the better a product is at keeping heat in. The IECC has defined eight U.S. climate zones that determine the minimum and maximum values allowable per region.

## Solar heat gain coefficient

How well a product can resist unwanted heat gain, important for summer cooling season. The lower the number, the less you'll spend on cooling and air conditioning costs.

## Visible transmittance

How well a product is designed to effectively light your home or commercial structure with natural daylight, saving money on artificial lighting. The higher the number, the more natural light has an impact.

## Can I Use Center of Panel Data?

The results of a Center of Panel or Center of Glass test measure the U-Factor of a window, door, or skylight pane at only the central portion of the pane. The test does not include the edge of the glass or the framing components.

There are a number of reasons why the edge of the glass and the framing components on a window, door, or skylight need to be taken into consideration. The frame can conduct heat, transfer cold, or reduce the amount of light transmitted into a space. These materials must be examined, because thermally broken metal frames and aluminum will deliver a different set of performance attributes.

In addition, if the edge of the glass or framing components used in a fenestration system allows for air leakage or enable too much heat gain or loss, the Center of Panel/Center of Glass test is essentially irrelevant.

By comparison, NFRC takes into account the performance of the entire system, because windows and skylights are installed as a system in the building – glass, framing, components, and more.

## System Values are Important

Utilizing NFRC certified system values provide you with the clearest picture of a system's performance, and provide a more accurate representation of how it will perform in real-world use.

For complete NFRC data on our systems, we encourage you to visit the NFRC website, [www.nfrc.org](http://www.nfrc.org), for a complete view of all tested systems.



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For the product offering in other markets please  
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[www.kingspan.com/us/en](http://www.kingspan.com/us/en)

For additional technical information and/or daylighting systems design  
consultation, contact Kingspan Light + Air for your specific needs. Care has  
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