



# GUARDIAN 275<sup>®</sup> DATA SHEET

FOR 4 INCH SYSTEMS

WWW.MAJORSKYLIGHTS.COM

(888) 759-2678

TEST DESCRIPTION	TEST METHOD	RESULTS/COMMENTS
<b>FLAMMABILITY</b>		
<i>Flame Spread</i>	<i>Interior Sheet</i>	ASTM E-84 UL 723, ANSI/NFPA #255
<i>Smoke Development</i>	<i>Insulation</i>	ASTM E-84 UL 723, ANSI/NFPA #255
		Flame Spread: 10 Smoke Development: 300
		Flame Spread: 5 Smoke Development: 0
<a href="#">2009 INTERNATIONAL BUILDING CODE REQUIREMENTS</a>		Section 2606.4 Section 2606.4
		Flame Spread: No Requirement Smoke Development: <450
<i>Burn Extent</i>	<i>Interior Sheet</i>	ASTM D-635
	<i>Ultimate Series™ Exterior Sheet</i>	ASTM D-635
<a href="#">2009 INTERNATIONAL BUILDING CODE REQUIREMENTS</a>		Section 2606.4
		Material shall have a CC1 or CC2 classification
<i>Self-Ignition</i>	<i>Interior Sheet</i>	ASTM D-1929
	<i>Ultimate Series™ Exterior Sheet</i>	ASTM D-1929
<a href="#">2009 INTERNATIONAL BUILDING CODE REQUIREMENTS</a>		Section 2606.4
		Flash Ignition: 872°F (467°C) Spontaneous Ignition: 912°F (489°C)
		Flash Ignition: 752°F (400°C) Spontaneous Ignition: 860°F (460°C)
<a href="#">2009 INTERNATIONAL BUILDING CODE REQUIREMENTS</a>		Section 2606.4
		Material shall have a self-ignition temperature greater than 650°F
<b>ADHESIVE BOND STRENGTH</b>		
<i>Adhesive Bond Strength</i>	<i>Un-Aged</i>	ASTM D-1002 (Shear)
	<i>Aged by ASTM D-1037</i>	
	<i>Un-Aged</i>	ASTM C-297 (Tensile)
	<i>Aged by ASTM D-1037</i>	
		563 psi 1212 psi 557 psi 914 psi
<b>IMPACT &amp; LOADING</b>		
<i>Small Missile Impact Protection</i>		ASTM E-1996
		Missile A, Wind Zone 1
<i>Impact Strength</i>	<i>Ultimate Series™ Exterior Sheet</i>	UL 972
	<i>Ultimate Series™ High-Impact Exterior Sheet</i>	UL 972
<a href="#">UL 972 REQUIREMENTS</a>		Section 6.2.1 (Standard Test) Section 6.5.1 (High-Energy Test)
		No Penetration: >60 ft-lbs No Penetration: >361 ft-lbs
		The material shall withstand five 50ft-lbs impacts The material shall withstand one 200ft-lbs impact
<i>Structural Performance</i>		ASTM E-330
<a href="#">2009 INTERNATIONAL BUILDING CODE REQUIREMENTS</a>		Table 1604.3
<a href="#">AAMA/WDMA/CSA 101/I.S.2/A440-05 REQUIREMENTS</a>		Section 5.3.4.3
		Max Deflection of Structure: <L/240 @ 30psf Permanent Set: <0.10% @ 60psf Proof Load
		Exterior Walls with Flexible Finishes shall have a deflection limit no less than L/120
		There shall be no permanent deformation in excess of 0.2% for Architectural Class Products
<b>INFILTRATION</b>		
<i>Air Infiltration</i>		ASTM E-283
<a href="#">AAMA/WDMA/CSA 101/I.S.2/A440-05 REQUIREMENTS</a>		Section 5.3.2.1 & Table 6
		< 0.01 cfm/ft <sup>2</sup> @ 6.24psf
		Test specimen shall have a maximum allowable air leakage rate no greater than 0.1 cfm/ft <sup>2</sup>
<i>Water Penetration</i>		ASTM E-331
<a href="#">AAMA/WDMA/CSA 101/I.S.2/A440-05 REQUIREMENTS</a>		Section 5.3.3.2
		No Water Penetration @ 15psf
		At no time during the duration of test shall water penetrate the inner plane of the test specimen
<b>WEATHERING</b>		
<i>Color Difference</i>	<i>Ultimate Series™ Exterior Sheet</i>	ASTM D-2244
		ΔE = 2.23 after 15 yrs
**Delta E readings on uncoated white samples exposed to fifteen years full spectrum solar radiation.		
**Accelerated per ASTM G90-05 - Standard Practice for Performing Accelerated Outdoor Weathering of Nonmetallic Materials Using Concentrated Natural Sunlight		
**All FRP face sheets are specifically formulated for architectural use. The exterior face sheets are formulated with state-of-the-art ultraviolet stabilizers. An additional UV protective coating is molecularly bonded to the weathering surface of the exterior face sheet. This coating acts as an additional weather barrier to enhance the life expectancy of the product.		
<i>Taber Abrasion Test</i>	<i>Ultimate Series™ Exterior Sheet (White)</i>	ASTM D-4060
	<i>Ultimate Series™ Exterior Sheet (Crystal)</i>	ASTM D-4060
		1000 cycles @ 500 grams = 32.5 mg wt. loss 1000 cycles @ 500 grams = 32.5 mg wt. loss
**Taber Abrasion Test results are irrelevant when comparing the weathering of Fiberglass Reinforced Polymer (FRP) panels. The Taber Abrasion Test was developed to test the hardness of a material coating (i.e. paint or anodize). Neither the hardness of the FRP resin nor the hardness of any coatings applied to the FRP provide for an accurate measure of the FRP sheet's ability to withstand weathering (i.e. UV, heat, cold, and acid rain).		

NOTE: All information is based on testing as reported by independent test agencies. Major Industries, Inc. strives to create the most advanced product in the daylighting industry. As a result, products, materials and test results are subject to change without notice. Values may also vary with custom system configurations. Please contact Major Industries, Inc. with any questions.

Updated:  
5/3/2011



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<b>LIGHT TRANSMISSION</b>		
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<b>Visible Light Transmission (LT)</b> <i>UV Transmittance</i>	ASTM E-972	<i>See Table Below</i>
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\*\*Light Transmission values are based on an incident angle normal to the plane of a representative panel, and are determined using the ASTM E-972 standard.

<b>Solar Heat Gain Coefficient (SHGC)</b>	NFRC 201	<i>See Table Below</i>
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\*\*SHGC values are for comparative analysis and are determined using the NFRC 201 standard.

\*\*SHGC is 87% of the Shading Coefficient at a given solar incidence and has replaced the Shading Coefficient as the property to specify as it is a more accurate method of stating glazing performance in a building envelope. (SC = 1.15 x SHGC)

<b>THERMAL PERFORMANCE</b>		
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<b>NFRC Certified Insulating Values</b> 2000mm x 2000mm (78-3/4" x 78-3/4") System	NFRC 100	<i>See Table Below</i>
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\*\*Center of Panel U-Values determined by NFRC test methods. For glazing comparisons only.

\*\*Certified System U-Values are for comparative analysis and are determined using criteria defined by NFRC, which requires 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 two translucent panels, three vertical rafters / mullions and perimeter head and sill.

<b>Condensation Resistance Factor (CRF)</b>	AAMA 1503.1	<i>See Table Below</i>
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\*\*Values are based on testing performed on thermally broken glazing panels.

GUARDIAN 275 <sup>®</sup> PERFORMANCE DATA	FACE SHEET COLOR COMBINATIONS			
	Exterior Sheet Color / Interior Sheet Color			
	Crystal / Crystal	Crystal / White	White / Crystal	White / White
<b>Light Transmission</b>				
No Insulation (%)	64	40	31	24
Insul 10 (%)	19	17	14	12
IMG 125 (%)	4	3	3	3
<b>Solar Heat Gain Coefficient</b>				
No Insulation	0.52	0.38	0.31	0.24
Insul 10	0.15	0.13	0.12	0.10
IMG 125	0.06	0.06	0.05	0.05
<b>Center of Panel U-Factor</b>				
No Insulation	0.48			
Insul 10	0.11			
IMG 125	0.06			
<b>Certified System U-Factor</b>				
<b>Thermally Broken Wall System</b>				
No Insulation	0.55			
Insul 10	0.20			
IMG 125	0.16			
<b>CRF</b>	Vertical Wall - 88			
<b>UV Transmittance</b>	<0.01			

\*\*Additional sheet colors available. Please contact Major Industries, Inc. for related performance data.\*\*

<b>MISCELLANEOUS</b>		
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<b>NYC Material and Equip. Acceptance</b>	MEA 289-99-M	MEA Approved
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<b>ICC-ES Evaluation Report</b>	PFC-5620	ICC-ES Listed
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