



Guardian 275[®] Data Sheet

for 4 inch Systems

www.majorskylights.com

(888) 759-2678

TEST DESCRIPTION	TEST METHOD	COMMENTS/RESULTS
FLAMMABILITY		
<i>Flame Spread</i> <i>Smoke Developed</i>	<i>Interior Sheet</i> ASTM E-84 UL 723, ANSI/NFPA #255	Flame Spread: 10 Smoke Developed: 300 IBC Class CC1
<i>Burn Extent</i>	<i>Interior Sheet</i> <i>Ultimate Series™ Exterior</i> ASTM D-635 ASTM D-635	HB Classification (less than 1.0 inch) HB Classification (less than 2.5 inch/min)
<i>Self-Ignition</i>	<i>Interior Sheet</i> <i>Ultimate Series™ Exterior</i> ASTM D-1929 ASTM D-1929	Flash Ignition: 872°F (467°C) Spontaneous Ignition: 912°F (489°C) Flash Ignition: 752°F (400°C) Spontaneous Ignition: 860°F (460°C)
<p>**These flame and smoke ratings far exceed the requirements of the ICBO and SBCCI (ICC). All interior FRP sheets comply with ICC evaluation report # ER-1412 All exterior FRP sheets comply with ICC evaluation report # ESR-2026</p>		
<i>Flame Spread</i> <i>Smoke Developed</i>	<i>Insulation</i> ASTM E-84 UL 723, ANSI/NFPA #255	Flame Spread: 5 Smoke Developed: 0
ADHESIVE BOND STRENGTH		
<i>Adhesive Bond Strength</i>	ASTM D-1002 (Shear) ASTM C-297 (Tensile)	563 psi 557 psi
<i>Aged Adhesive Bond Strength</i>	<i>Listed on report above</i> <i>Listed on report above</i> by ASTM D-1037 (Aging) ASTM D-1002 (Shear) ASTM C-297 (Tensile)	1212 psi 914 psi
**Bonding adhesive meets ICBO (ICC) requirements.		
IMPACT & LOADING		
<i>Impact Strength</i>	<i>Ultimate Series™ Exterior</i> <i>Ultimate Series™ Hi-Impact Exterior</i> <i>Ultimate Series™ Exterior (British Standard)</i> UL 972 UL 972 UL 972	No Penetration: >60 ft-lbs No Penetration: >361 ft-lbs No Penetration: >60 ft-lbs
<i>Small Missile Impact Protection</i>	ASTM E-1996	Passed: Missile A, Wind Zone 1
<i>Structural Performance Check</i>	ASTM E-330 @ 30 psf design pressure	Maximum Deflection of Panel = 0.468" Permanent Set = 0.094"
<p>**Test consist of panels with framing. Test is consistent with the glass skylight, window, & curtainwall industry. **Test is designed to check an entire system as opposed to other "glazing only" tests.</p>		
INFILTRATION		
<i>Air Infiltration</i>	ASTM E-283 @ 30 psf design pressure	Exceeds Requirements of: < 0.01 cfm/ft ² @ 6.24 psf
<i>Water Penetration</i>	ASTM E-331 @ 30 psf design pressure	No Water Penetration
WEATHERING		
<i>Color Difference</i>	<i>Ultimate Series™ Exterior</i> ASTM D-2244	White Sample: Delta E= 2.86
**Delta E readings on samples exposed to twelve years full spectrum solar radiation.		
<p>**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 exterior face sheet. This coating acts as an additional weather barrier to enhance the life expectancy of the product.</p>		
<i>Taber Abrasion Test</i>	<i>Ultimate Series™ Exterior (White)</i> <i>Ultimate Series™ Exterior (Crystal)</i> ASTM D-4060 ASTM D-4060	500 grams @ 1000 cycles = 32.5 mg wt. loss 500 grams @ 1000 cycles = 32.5 mg wt. loss
<p>**Taber Abrasion Test results are meaningless 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).</p>		
		Additional Information on Taber Testing

NOTE: All information is based on testing as reported by independent testing agencies.
We reserve the right to improve our products and retest, which may change results.
Please contact Major Industries Inc. with any questions.

Updated:
6/29/2010



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THERMAL PERFORMANCE		
NFRC Certified Insulating Values 80"x80" System Values based on a 12"x24" grid pattern (Other configurations available). **Validated to NFRC 2004 requirements. **NFRC requires validation testing of both <i>standard</i> and <i>thermally improved</i> assembled wall systems measuring 80"x80" consisting of 2 translucent panels and 3 vertical mullions with perimeter head and sill. (Site-built application) Tested at 90° slope and 15 mph wind.	ASTM C-518	See Table Below

Condensation Resistance Factor (CRF)	ASTM C-236 AAMA 1503.1	See Table Below
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LIGHT TRANSMISSION		
Light Transmission & Solar Heat Gain Coefficient (LT) (SHGC)	ASTM E-972	See Table Below
Shading Coefficient (SC)		SC = 1.15 x SHGC

**SHGC is approximately 87% of the shading coefficient at a given solar incidence and has replaced the shading coefficient as the property to specify because it is a more accurate method of stating glass performance in a building envelope.

GUARDIAN 275 [®] PERFORMANCE DATA 4"	FACE SHEET COLOR COMBINATIONS			
	Exterior Sheet Color / Interior Sheet Color			
	Crystal / Crystal	Crystal / White	White / Crystal	White / White
Center of Panel U-Factor				
No Insulation	0.48			
Insul 10	0.10			
IMG 125	0.06			
System U-Factor	Standard / Thermally Broken			
No Insulation	.58 / .54			
Insul 10	.19 / .17			
IMG 125	.14 / .13			
Light Transmission				
No Insulation (%)	64	40	31	24
Insul 10 (%)	19	17	14	12
IMG 125 (%)	4	3	3	3
Solar Heat Gain Coefficient				
No Insulation	0.52	0.38	0.31	0.24
Insul 10	0.18	0.15	0.12	0.11
IMG 125	0.06	0.06	0.06	0.05
CRF	88			
UV Transmittance	<0.01			
Solar Transmittal (Ts)	.08 - .14			
Reflective (Rs)	.38 - .68			

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

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