



GUARDIAN 275® DATA SHEET

Information for 2-3/4" Systems

TEST DESCRIPTION

TEST METHOD

RESULTS & COMMENTS

FLAMMABILITY

Flame Spread/Smoke Development

Interior Sheet	ASTM E-84 UL 723, ANSI/NFPA #255	Flame Spread: 10 Smoke Development: 300
Class "A" Exterior Sheet	UL 723 ASTM E-84, ANSI/NFPA #255	Flame Spread: 15 Smoke Development: 350
Insulation	ASTM E-84 UL 723, ANSI/NFPA #255	Flame Spread: 5 Smoke Development: 0
2015 INTERNATIONAL BLDG. CODE REQUIREMENTS	Section 2606.4 Section 2606.4	Flame Spread: No Requirement Smoke Development: <450

Burn Extent

Interior Sheet	ASTM D-635	CC1 - less than 1.0 inch
Ultimate Series™ Exterior Sheet	ASTM D-635	CC2 - less than 2.5 inch/min
2015 INTERNATIONAL BLDG. CODE REQUIREMENTS	Section 2606.4	Material shall have a CC1 or CC2 classification

Self-Ignition

Interior Sheet	ASTM D-1929	Flash Ignition: 872°F (467°C) Spontaneous Ignition: 912°F (489°C)
Class "A" Exterior Sheet	ASTM D-1929	Flash Ignition: 925°F (496°C) Spontaneous Ignition: 937°F (503°C)
Ultimate Series™ Exterior Sheet	ASTM D-1929	Flash Ignition: 752°F (400°C) Spontaneous Ignition: 860°F (460°C)
2015 INTERNATIONAL BLDG. CODE REQUIREMENTS	Section 2606.4	Self-ignition temperature greater than 650°F

Class "A" Skylight System

Class "A" Exterior Sheet	ASTM E-108	Class "A" Unlimited Slope
Ultimate Series™ Exterior Sheet	ASTM E-108	Class "A" Burning Brand Unlimited Slope

ADHESIVE BOND STRENGTH

Adhesive Bond Strength

Un-Aged	ASTM D-1002 (Shear)	563 psi
Aged	(by ASTM D-1037)	1212 psi
Un-Aged	ASTM C-297 (Tensile)	557 psi
Aged	(by ASTM D-1037)	914 psi

IMPACT & LOADING

Impact Strength

Standard Glazing	UL 972	No Penetration: >60 ft-lbs
Ultimate Series™ High-Impact Exterior Glazing	UL 972	No Penetration: >361 ft-lbs
High-Impact Interior Glazing	UL 972	No Penetration: >245 ft-lbs
Class "A" Glazing	UL 972	No Penetration: >245 ft-lbs
UL 972 REQUIREMENTS	Section 6.3 (Outdoor Impact) Section 6.4 (Indoor Impact) Section 6.5 (High Energy Impact)	Material shall withstand five 40ft-lb impacts Material shall withstand five 50ft-lb impacts Material shall withstand one 200ft-lb impact

Uniform Load Deflection - PANEL ONLY	ASTM E-72	Panel Deflection: <3.0% Permanent Set after 5 min: <0.5%
Concentrated Load Test	ASTM E-661	No Failure: 400 lbs Concentrated Load (57psi) No Failure: 150 ft-lbs Impact Load

Structural Performance	ASTM E-330	Max Deflection of Structure: <L/125 @ 20psf Permanent Set: <0.05% @ 40psf Proof Load
2015 INTERNATIONAL BLDG. CODE REQUIREMENTS	- Table 1604.3 - Exterior Walls with Flexible Finishes shall have a deflection limit no less than L/120.	
AAMA/WDMA/CSA 101/I.S.2/A440-05 REQ.	- Section 5.3.4.3 - There shall be no permanent deformation in excess of 0.2% for Architectural Class Products.	

INFILTRATION

Air Infiltration	ASTM E-283	< 0.01 cfm/ft ² @ 6.24psf
AAMA/WDMA/CSA 101/I.S.2/A440-05 REQ.	- Section 5.3.2.1 & Table 6 - Test specimen shall have a maximum allowable air leakage rate no greater than 0.1 cfm/ft ²	

Water Penetration	ASTM E-331	No Water Penetration @ 15psf
AAMA/WDMA/CSA 101/I.S.2/A440-05 REQ.	- Section 5.3.3.2 - At no time during the duration of test shall water penetrate the inner plane of the test specimen.	

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.

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WEATHERING

Color Difference

Ultimate Series™ Exterior Sheet	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.		

Taber Abrasion Test

Ultimate Series™ Exterior Sheet (White)	ASTM D-4060	1000 cycles @ 500 grams = 32.5 mg wt. loss
Ultimate Series™ Exterior Sheet (Crystal)	ASTM D-4060	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 test was developed to measure the hardness of a material coating (i.e. paint / anodize), and the hardness of FRP resin or coatings applied to the FRP do not provide an accurate measure of the sheet's ability to withstand weathering (i.e. UV, heat, cold, and acid rain).		

HURRICANE SYSTEM

Air Infiltration

Wall System	ASTM E-283	< 0.01 cfm/ft ² @ 6.24 psf
Skylight System	ASTM E-283	< 0.05 cfm/ft ² @ 6.24 psf
AAMA/WDMA/CSA 101/I.S.2/A440-05 REQ. - Section 5.3.2.1 & Table 6 - Test specimen shall have a maximum allowable air leakage rate no greater than 0.1 cfm/ft ² .		

Water Penetration

Wall System	ASTM E-331	No Water Penetration @ 15 psf
Skylight System	ASTM E-331	No Water Penetration @ 15 psf
AAMA/WDMA/CSA 101/I.S.2/A440-05 REQ. - Section 5.3.3.2 - At no time during the duration of test shall water penetrate the inner plane of the test specimen.		

Structural Performance

Wall System	ASTM E-330	Max Deflection of Structure: <L/120 @ 65psf Permanent Set: <0.1% @ 135psf Proof Load
Skylight System	ASTM E-330	Max Deflection of Structure: <L/180 @ 65psf Permanent Set: <0.2% @ 195psf Proof Load
2014 FLORIDA BLDG. CODE REQ. - Table 1604.3 - Exterior Walls with Flexible Finishes shall have a Deflection limit no less than L/120. Non-supporting ceilings shall have a deflection limit no less than L/180.		
AAMA/WDMA/CSA 101/I.S.2/A440-05 REQ. - Section 5.3.4.3 - There shall be no permanent deformation in excess of 0.2% for Architectural Class Products.		

Windborne Debris Impact Protection

Wall Syst. w/ Ultimate Series™ High-Impact Ext. Sheet	ASTM E-1996	Passed: Missile D, Wind Zone 3
Skylight Syst. w/ Ultimate Series™ High-Impact Ext. Sheet	ASTM E-1996	Passed: Missile D, Wind Zone 3
Small Missile Impact Protection	ASTM E-1996	Missile A, Wind Zone 1

Cyclic Load Testing

Wall Syst. w/ Ultimate Series™ High-Impact Ext. Sheet	ASTM E-1886	Passed: ±65psf
Skylight Syst. w/ Ultimate Series™ High-Impact Ext. Sheet	ASTM E-1886	Passed: ±65psf

MISCELLANEOUS

Blast Testing

GSA Standard Test Method for Glazing	GSA - TS01-2003	5-6 psi @ 40-69 psi-msec Impulses
Standard Test for Airblast Loading	ASTM F 1642	10 psi @ 90 psi-msec Impulse
Blast Hazard Mitigation	AAMA 510	Condition "1" Hazard "None" / "Safe" Level of Protection
DoD Anti-terrorism Standards	UFC 4-010-01	"Medium" Level of Protection

Haze

Haze Value	ASTM D1003	>90% when tested according to ASTM D 1003
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Field Tests

Air Infiltration	ASTM E-783	Passed: < 0.01 cfm/ft ² @ 6.24 psf
Water Penetration (Motorola Building)	ASTM E-1105	Passed: No Leakage
Water Leakage (Motorola Building)	AAMA 501.2	Passed: No Leakage
Deflection (DeAnza College)	2001 CBC	No Failure @ 80 psf

Building Codes and Standards

Florida - Wall System	FL#13504-R2	Approved - Windzone 3 Missile Level D
Florida - Skylight	FL#13456-R2	Approved - Windzone 3 Missile Level D
Texas Department of Insurance	RWA - 01	TDI Approved
ICC-ES Report	ESR-2855	ICC-ES Listed
CAL-FIRE (Skylight)	430-2189:0100	CAL-FIRE Listed
Los Angeles Research Report (Wall and Skylight)	LARR RR 26004	City of Los Angeles Listed

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