

**Translucent Panel Systems
Comparison Matrix**

Subject	Major	Kalwall®	Remarks
Location	Major Industries, Inc. 7120 Stewart Ave. PO Box 306 Wausau, WI 54402-0306 Phone: 888-759-2678 Fax: 715-848-3336	Kalwall Corporation 1111 Canada Road PO Box 237 Manchester, NH 03105 Phone: 800-258-9777 Fax: 603-627-7905	
Business established	1980	1955	
Ownership	Purchased in 1993 and currently owned by Wayne Toenjes	Founded and currently owned by the Keller family	
Website	www.majorskylights.com	www.Kalwall.com	
Completed projects	Thousands	Thousands	Call for project list
Installation Available	Yes	Yes	
Warranty Material & Workmanship	1 year standard up to 10 years (as specified)	1 year standard. Extended warranty from manufacturer contingent upon proprietary spec and approval of company officer.	Always read the warranty carefully
Colorchange warranty	Up to 20 years available 10 years STANDARD	Contingent upon proprietary spec and approval of company officer.	Always read the warranty carefully
Fiberbloom warranty	Up to 25 years available 10 years STANDARD	Contingent upon proprietary spec and approval of company officer.	Always read the warranty carefully
Exterior face technology (FRP)	Uses Ultimate Series™ FRP sheet manufactured by Crane Composites.	Manufacturers their own architectural grade fiberglass sheet. The weathering surface consists of an acrylic urethane coating over a fiberglass veil	Means/methods different, but both acceptable
ICC-ES Listed	Yes: PFC-5620 for systems ER-1412 for FRP sheet	Yes: PFC-1705 for systems	Both companies have passed the requirements and are listed
Air infiltration ASTM E-283	0.0 cfm/sf @ 1.57 psf (25mph) 0.0008 cfm/sf @ 6.24 psf (50mph) 0.027 cfm/sf @ 15 psf (77mph)	0.01 cfm/sf @ 1.56 psf (25mph) 0.01 cfm/sf @ 6.24 psf (50mph)	Major performs higher
Water penetration ASTM E-331	No leakage when water is applied to the entire panel surface @ 12 psf	No leakage when water is applied to the entire panel surface @ 10 psf	Comparable
Color change after 5 years in Florida sun .070 white standard exterior sheet ASTM D2244	Delta E of 2.80 on white .070 sheet after 12 years (under accelerated testing)	Delta E of 3 on white .070 sheet after 5 years	Comparable, neither visible to naked eye, but Major performs higher
Flame Spread and Smoke Developed .045 Interior sheet ASTM E-84 (This test is also compared to UL-723)	CC1 rated - standard 20 Flame Spread 150 Smoke Developed	CC2 rated - standard 50 Flame Spread 350 Smoke Develop CC1 rated - optional 20 Flame Spread 200 Smoke Developed	CC1 rating is 25 Flame Spread or less CC1 (also called Class A or Class 1) is superior to CC2 (also called Class B or Class II)
Burn extent .045 Interior sheet ASTM D-635	Less than 1"/minute	Less than 1"/minute	Comparable
Self ignition .045 Interior sheet ASTM D-1929	Greater than 660° F	Similar	Comparable
Class "A" burning brand	Meets ASTM E-108	Meets ASTM E-108	Comparable
Class "A" roof system	Meets ASTM E-108 UL 790 listed	Meets ASTM E-108 UL 790 listed	Comparable

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Structural performance Panel w/frame ASTM E-330	Maximum deflection @ 35psf 11'-2" x 12'-2" unit size mullion - 2.46" - .020 perm. set Panel - 2.781" - .089 perm. set Std. Design is L/100 for Deflection Limit.	Maximum deflection @ 40psf Unit size unknown 2.277" - .262" perm. Set Std. Design is L/60 for Deflection Limitation	Difficult to compare because Kalwalls unit size is unknown. None the less, L/100 is 60% less deflection than L/60. Greater Deflection is not recommended as it means more bending of the system.
Beam bending Panel only ASTM E-72	Ave. deflection: 2.5" @ 30psf Grid pattern: 12"x24" Panel size: 60"x123" (12' span) I-beam: standard Weight disbursement: Mid-span of panel	Ave. deflection: 1.9" @ 30psf Grid pattern: 12"x24" Panel size: 60"x123" (10' span) I-beam: heavy Weight disbursement: 30" from ends, 60" apart	Competitor uses a shorter panel and loads their panel close to the ends, therefore giving the appearance of less deflection. Also, heavy I-beam is used. These results are comparable.
Impact Resistance UL-972	64 ft/lbs standard 200 ft/lbs high-impact	71 ft/lbs standard 232 ft/lbs high-impact	UL-972 only requires 50 ft-lbs for standard impact & 200 ft-lbs for high impact.
Adhesive bond strength ASTM C-297 ASTM D-1002	Tensile (ASTM C-297): 557 psi Shear (ASTM D-1002): 563 psi	Tensile: 750 psi Shear: 500 psi	Comparable
Aged Adhesive Bond Strength ASTM D-1037 ASTM C-297 ASTM D-1002	Tensile (ASTM C-297): 914 psi Shear (ASTM D-1002): 1212 psi	Tensile: 750 psi Shear: 800 psi	Comparable
Abrasion Resistance ASTM D-4060 Taber Abrasion	32.5 mg after 1000 cycles	40 mgs after 1000 cycles	Major performs better. Less material being ground off is best. Major loses 19% less material.
NFRC 100-2004 Validated U-factors with framing and panels tested at 90 degrees	Wall Systems Air space .52 28g Insulation .24 45g Insulation .21 TB Wall Systems Air space .51 28g Insulation .23 45g Insulation .20	Tested to NFRC 1997 Not certified to 100-2004 System not validated	Comparison not possible Major is tested to NFRC 100-2004 requiring panel and framing assembly validation, where NFRC 1997 allowed testing of panel only. Values with a complete system will naturally be higher than panel only values.
NFRC 100-2004 Validated U-factors with framing and panels tested at 20 degrees	Skylight Systems Air space .53 28g Insulation .25 45g Insulation .22 TB Skylight System Air space .52 28g Insulation .24 45g Insulation .21	Tested to NFRC 1997 Not certified to 100-2004 Not tested at incline System not validated Thermally broken skylight framing not available	Comparison not possible Major is tested to NFRC 100-2004 requiring panel and framing assembly assembly must be tested at 20 degree incline
NFRC 201-2004 Validated SHGC tested at 5 degree normal to the sun	Wall Systems Air space .26 28g Insulation .15 45g Insulation .14 TB Wall Systems Air space .26 28g Insulation .17 45g Insulation .15	Tested per NFRC 1997 Not certified to 201-2004 Not tested at incline System is not validated	Comparison not possible Major is tested to NFRC 201-2004 requiring panel and framing assembly assembly must be tested at 5 degree normal to the sun
NFRC 201-2004 Validated SHGC tested at 5 degree normal to the sun	Skylight Systems Air space .24 28g Insulation .25 45g Insulation .14 TB Skylight System Air space .24 28g Insulation .15 45g Insulation .14	Tested per NFRC 1997 Not certified to 201-2004 Not tested at incline System is not validated Thermally broken skylight framing not available	Comparison not possible Major is tested to NFRC 201-2004 requiring panel and framing assembly assembly must be tested at 5 degree normal to the sun

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Blast Testing Validated analyses for DoD, GSA, UFC-010-01	System tested to 9.8 psi	System tested to 6 psi	Major is far superior.
Condensation Resistance Factor (CRF) AAMA 1503.1	CRF: 81 on thermally broken panel area (average) CRF: 50 on thermally broken frame, standard panel	CRF: 80 on grid line CRF: 90 center of cell Based on panel only - <i>they don't include any part of the frame.</i>	Comparable Major's results are an average of the entire system.
Gaskets	Extruded neoprene/ EPDM gaskets 1 1/16" wide x 1/4" thick	1/4" wide self adhesive foam tape 3/16" wide x 1/8" thick	Major performs higher Kalwall's foam tape is typically used in residential work.
Framing & Grid Core	Framing: 6063-T6, Core: 6005, T5	Similar	Comparable
Thermal Breaks	Structural poured and debridged urethane panel grid and frame for wall panel systems and skylight systems	.070" thick FRP thermal break for grid, structural poured and debridged for wall system framing, no thermal break frame for skylight system	Major performs higher on skylights Means/methods different, but performance comparable on walls
Finishes	Kynar based finishes meeting AAMA specifications 2604 and 2605. Applied by Linetec, a licensed Kynar applicator Full range of Anodized finishes also available. Applied by Linetec.	In-House "CRF" Finish, not a Kynar finish. A finish that meets the AAMA 2604 only. Will not meet the 2605 standard for High performance finishes. Anodized finishes not standard. Kynar finishes not standard	Major Industries only uses Kynar Paint finishes and does not do in house finishing. Lintec, an Apogee Company and a licensed Kynar applicator, does all of Majors finishing.
Moisture Management	ALL framing members utilize a water management system with condensate gutters and weep holes. Fully guttered - just like a glass skylight	No water management system on framing members	Major performs higher and includes SUPERIOR water management such as a fully weeped system (frame and panels), EPDM gasketing and Butyl tape sealants
Window/Wall Panel System	AP-AW70 rated window/wall system integral to a 2 3/4" translucent panel framing system	HC-60 rated window/wall system, integral to a 2 3/4" translucent panel framing system.	Major performs higher

NOTE: All information included in this comparison is based on published test reports and sales literature. Since Manufacturers change their product and retest without notice, some ratings may no longer be valid. (April 2009)



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