

PRODUCT APPROVAL EVALUATION REPORT

<p><u>Product Manufacturer:</u> Special-Lite Inc. 860 South Williams Street, P.O. Box 6 Decatur, MI 49045</p>	<p><u>Product Name/Model & Description:</u> AF220 3070 Fiberglass Door Side Hinged Single Fiberglass Door - LMI & SMI (non-HVHZ)</p>
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Scope: This product has been evaluated by the below-signed Florida Professional Engineer for compliance with the Code noted herein and is, for the purpose intended, at least equivalent to that required by the Code, in accordance with section 553.842 F.S. & chapter 61G20-3.005 F.A.C. Re-evaluation of this product shall be required following applicable Code modifications or revisions.

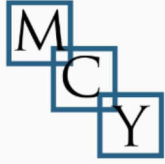
Code: 5th Edition 2014 Florida Building Code, inclusive of all Supplements effective as of this report date.

Compliance Method: 61G20-3.005 (1)(d) – Evaluation Report from a licensed Professional Engineer

Product Description: Product Approval Drawing #AD15-10, prepared by MCY Engineering, signed and sealed by Yiping Wang, P.E., is an integral part of this Evaluation Report.

Limitations & Conditions of Use:

- This product has been evaluated for use **outside of the HVHZ** (High Velocity Hurricane Zone)
- Impact Resistance: **Large Missile and Small Missile Impact**
- Refer to Product Approval Drawing noted above for:
 - Maximum allowable wind loads at related maximum allowable size(s).
 - Other load limitations applicable to the product, if any.
 - Overall dimensions and material/grade of main product components, accessories, etc.
 - Illustrated diagrams of the attachment of the product to the structure.
 - Anchor type(s), size(s), substrate(s), embedment, edge distance, and spacing/locations.



Test Reports:

Mandatory Tests (Tested in accordance with AAMA 501)

Test Lab	Report Number	Test Report Date	Test Standard & Description
Architectural Testing Inc. – North St. Paul, MN	D7868.01-201-44	06/02/14	ASTM E283-04 (air infiltration) ASTM E331-00 (static pressure water resistance) ASTM E330-02 (structural performance test) AAMA 1304-02 (forced entry test) ASTM E1886-05(13a) (large missile impact test) ASTM E1996-05(14a) (standard specification for performance for doors impacted by wind borne debris)

Engineering Analysis: The following engineering analyses and/or calculations have been performed:

- No comparative analysis has been performed for conditions other than those tested.
- No rational analysis has been performed.
- Anchor calculations are based on manufacturer’s published anchor capacity, anchor Notice of Acceptance by Miami Dade County.



May 1st, 2015

Product Information

Pultru® Isophthalic Pultrusion Resin

TYPICAL LIQUID RESIN PROPERTIES*

	Nominal
Viscosity, Brookfield RTV Spindle #3 at 50 RPM, cps	1,100
Weight Per Gallon	9.25 lb./gal./1.11 gr./cc.
Acid Number, Solids Basis	17mg./g/KOH
Styrene, %	37.5
Color Gardner	3
Stability, 120°F	20 days

TYPICAL CURING PROPERTIES* (1) see back page

SPI Gel time at 77°F/25°C, 1.0% BPO	
150-190°F/65.6-87.8°C, minutes	4.0
Gel to peak time, minutes	5.5
Peak Exotherm, °F/°C	455/235

TYPICAL CLEAR CAST MECHANICAL PROPERTIES* (2) see back page

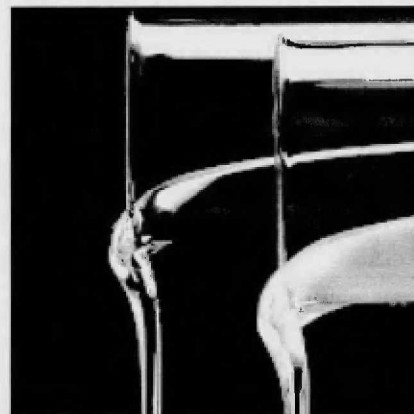
		Test Method
Tensile Strength, psi/MPa	7,000/43.3	ASTM D 638
Tensile Modulus, psi/GPa	515,000/3.6	ASTM D 638
Tensile Elongation, %	1.5	ASTM D 638
Flexural Strength, psi/MPa	15,200/104.8	ASTM D 790
Flexural Modulus, psi/GPa	620,000/4.27	ASTM D 790
Heat Distortion Temperature, °F/°C at 264 psi	256/124	ASTM D 648

*Typical properties are not to be construed as specifications.

DESCRIPTION

Pultru® P764-251 is an unpromoted high reactivity isophthalic polyester resin. Pultru® P764-251's polymer backbone was designed to capture a wide array of desirable properties for both the Pultruder and the end user. Balanced reactivity allows Pultru® P764-251 to perform in a variety of other closed mold processes

Balanced chemistry offers benefits in moisture resistance, stain resistance, and weathering. In addition, Pultru® P764-251's ability to team up with a wide selection of low profile additives yields exceptionally pleasing surface aesthetics.



FEATURES

- High reactivity isophthalic chemistry
- Ingredients comply with Title 21 CFR, parts 170 to 199 relative to FDA criteria
- Good stain and moisture resistance
- Excellent electrical properties are an added plus

BENEFITS

Processability

Suitable for a wide variety of pultrusion applications and other closed mold processes including SMC and BMC.

Adaptability

Balanced chemistry and unique properties to allow designers to meet a broad spectrum of applications.

Proven History

Pultru® P764-251 has demonstrated years of proven performance in appliance, electrical, construction and food service applications.

Pultru® P764-251 Polyester Resin

STORAGE STABILITY

Resins are stable for three months from date of production when stored in the original containers away from sunlight at no more than 70°F/21°C. After extended storage, some drift may occur in gel time.

During the hot summer months, no more than two months stability at 86°F/30°C should be anticipated.

SAFETY

See appropriate AOC MSDS for guidelines.

ISO 9001:2000 CERTIFIED

The Quality Management Systems at every AOC manufacturing facility have been certified as meeting ISO 9001:2000 standards. This certification recognizes that each AOC facility has an internationally accepted model in place for managing and assuring quality. We follow the practices set forth in this model to add value to the resins we make for our customers.

FOOTNOTES

(1)

The gel times shown are typical but may be affected by catalyst, promoter and inhibitor concentrations and resin, mold and shop temperature. Variations in gelling characteristics can be expected between different lots of catalysts and at extremely high humidities. Pigment and fillers can retard or accelerate gelation. It is recommended that the fabricator check the gelling characteristics of a small quantity of resin under actual operating conditions prior to use.

(2)

Based on tests at 77°F/25°C and 50% relative humidity. All tests performed on unreinforced cured resin castings. 1/8" castings were prepared using 1.0% BPO, post cured for 2 hours at 250°F/121°C using AOC's test method X-12Ab.

The information contained in this data sheet is based on laboratory data and field experience. We believe this information to be reliable, but do not guarantee its applicability to the user's process or assume any liability for occurrences arising out of its use. The user, by accepting the products described herein, agrees to be responsible for thoroughly testing each such product before committing to production.

Our recommendations should not be taken as inducements to infringe any patent or violate any law, safety code or insurance regulation.



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EXTERIOR U.V. STABILIZED SANDSTONE DOOR PANEL - STDSC

SANDSTONE CLASS C

Product

STDSC is a durable, semi-rigid material of fiberglass reinforced plastic (frp). It is tough, hard, dimensionally stable and modified for exterior use. It will not mildew, rot, or corrode. STDSC exhibits a high strength-to-weight ratio. It is easy to install and highly bondable.

Purpose

STDSC is suitable as a general all-purpose exterior panel in a variety of architectural applications, such as, doors, fascias, soffits and facades.

PHYSICAL PROPERTIES: TABLE 1

PROPERTY	TYPICAL VALUE		TEST METHOD
	0.12" THICKNESS	3.05 mm THICKNESS	
Flexural Strength	27 x 10 ³ psi	168 MPa	ASTM D790
Flexural Modulus	0.7 x 10 ⁶ psi	4826 MPa	ASTM D790
Tensile Strength	18 x 10 ³ psi	90 MPa	ASTM D638
Tensile Modulus	1.0 x 10 ⁶ psi	8963 MPa	ASTM D638
Barcol Hardness	40	55	ASTM D2583
Izod Impact Strength	7 ft -lbs/in notched	0.75 J/mm	ASTM D256
Gardner Impact Strength	30 in-lb	3.4 J/mm	ASTM D3029
Coefficient of Linear Thermal Expansion	2 x 10 ⁻⁶ in/in/°F	36 µm/m/°C	ASTM D696
Water Absorption (%)	0.20%/24 hrs @ 77°F	0.20%/24 hrs @ 25°F	ASTM D570

DESIGN DATA: TABLE 2

PART NUMBER IDENTIFIER	AVAILABLE COLORS	SIZE		FINISH	NOMINAL THICKNESS
		WIDTHS	LENGTHS		
STDSC	616 gray 836 bronze	38" to 48" (0.9m to 1.2m)	5' to 12' (1.5m to 152.4m)	sandstone texture	0.12" (3.05 mm)

Minimum manufacture run per color is 12,000 square feet. Orders for less than minimum may be batch combined with other customer orders to reach minimum manufacturing quantity.

SPECIFICATIONS

These panels are manufactured by a continuous laminating process in lengths as required.

COMPOSITION

1. **Reinforcement:** Random chopped fiberglass roving.
2. **Resin mix:** Modified polyester copolymer and inorganic fillers and pigments.

FINISHED PANEL QUALITY

1. Panels shall have a wear side with a sandstone like finish. Color shall be uniform throughout, as specified. Other colors can be manufactured. The backside shall be smooth. Backside imperfections which do not affect functional properties are not cause for rejection.
2. Physical properties shall be as set forth in Table 1.
3. Product quality standards and tolerances for panel weight and thickness shall be as set forth in Crane Composites' Quality Control Procedures/Standards which are available on request.
4. Dimensions shall be as specified on purchase order, subject to the following tolerances:
Width: $\pm 1/8"$ (3.2 mm)
Length: $\pm 1/8"$ (3.2 mm) up to 12' (3.7 m)
Squareness: not more than $1/8"$ (3.2 mm) out of square.
5. Panels shall be installed in accordance with manufacturer's guidelines as set forth in the Glasbord "Installation Guide."

CERTIFICATION

- A. Meets USDA/FSIS requirements.
- B. Meets minimum requirements of the major model building codes for Class C (III) interior wall and ceiling finishes. Flame spread less than 200, smoke developed less than 450 per ASTM E-84.
- C. Frp does not support mold or mildew (per ASTM D3273 and ASTM D3274).

FABRICATING RECOMMENDATIONS

Note: Protect your eyes with goggles; cover your nose and mouth with a filter mask when cutting Glasbord panels.

Hand fabricating: Drilling—High speed drill bit (60° cutting angle, with 12°-15° clearance) or hole saw.

Stapling: Standard pneumatic stapler.

Cutting: Sheet metal shears or circular saw with reinforced carborundum or carbide-tipped blade.

Production fabricating: Use carbide-tipped tools. Straight cuts can be sheared (90° cutting edge with 0.002" [0.05 mm] clearance) or sawed. For irregular cuts, use die punch or band saw.

STORAGE

All Crane Composites products should be stored indoors.

SERVICEABLE TEMPERATURE RANGE

Panels will perform in temperatures from -40°F (-40°C) to 130°F (54°C). For use in environments beyond this range, contact Crane Composites for recommendations.

PRODUCT LIMITATIONS

Near heat source: STDSC panel products may discolor when installed near a heat source which radiates temperatures exceeding 130°F (54°C) such as cookers, ovens, and deep fryers.

Uneven surface: Installation over uneven concrete block walls may result in areas of delamination and bulging.

KEMLITE TESTING

Stain resistance test: Prolonged direct contact to concentrated ammonia-based cleaner exhibited no color change per MacBeth Computer Colorimeter.

NOTICE

Panels will provide a clean, aesthetically-pleasing finished installation. However, by nature, fiberglass reinforced plastic paneling may occasionally have small areas that are aesthetically unacceptable for use. Panels should be inspected on-site prior to installation. If any portion of material will not provide an acceptable appearance, Crane Composites should be notified at once. Upon verification of unacceptability, that portion of material will be replaced by Crane Composites. Crane Composites' sole responsibility is for the replacement of defective material but not for labor or other handling or installation expenses.

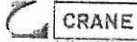
FLAME SPREAD AND SMOKE DEVELOPMENT RATINGS

The numerical flame spread and smoke development ratings are not intended to reflect hazards presented by Crane Composites products or any other material under actual fire conditions. These ratings are determined by small-scale tests conducted by Underwriters Laboratories and other independent testing facilities using the American Society for Testing and Materials E-84 test standard (commonly referred to as the "Tunnel Test"). CRANE COMPOSITES PROVIDES THESE RATINGS FOR MATERIAL COMPARISON PURPOSES ONLY. Like other organic building materials (e.g. wood), panels made of fiberglass reinforced plastic resins will burn. When ignited, frp may produce dense smoke very rapidly. All smoke is toxic. Fire safety requires proper design of facilities and fire suppression systems, as well as precautions during construction and occupancy. Local codes, insurance requirements and any special needs of the product user will determine the correct fire-rated interior finish and fire suppression system necessary for a specific installation.

We believe all information given is accurate. It is offered in good faith, but without guarantee. Since conditions of use are beyond our control, all risks are assumed by the user. Nothing herein shall be construed as a recommendation for uses which infringe on valid patents or as extending a license under valid patents.

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 **CRANE** Composites
Form 7031 Rev. 00 (4081)

Air-Comb

Technical Data

Air-Comb PP8-80 is a polypropylene honeycomb material that combines lightweight, strength and resilience. It is suitable for a wide variety of sandwich core applications in marine, road/rail transportation, and industry. Air-Comb also possesses excellent sound damping properties.

It is available in plain, contoured, and double contoured finishes and comes standard with a non-woven veil and barrier film. Air-Comb is also available without the veil and barrier film by special order.

Air-Comb - Mechanical Properties

Property	Units	PP8-80
Density	lb/ft ³	5
	kg/m ³	80
Cell Diameter	mm	8
	in.	0.3
Compressive Strength	psi	232
	MPa	1.6
Shear Strength	psi	73
	MPa	0.5
Temperature Range	F°	-22 to +176
	C°	-30 to +80

Sheet Length	in. ±0.16	96
	mm ±4	2,440
Sheet Width	in. ±0.16	48
	mm ±4	1,220
Thickness (stock items)	in.	¼ - 1
	mm	6.3 - 25.4

The information and data presented herein are subject to revision. Polyumac USA, LLC reserves the right to release replacement data. The data presented is derived from in house and independent testing. Calculations should be verified with physical testing. The data is provided without liability to Polyumac USA, LLC. or its agents and does not constitute warranty or representation in respect to the material or its use.

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ADVANCED CORE MATERIALS



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Email: info@trimlok.com • Website: www.trimlok.com

Engineering Specifications for Trim-lok Rubber Seal

Description;	Rubber Seals come in a variety of specially designed shapes made from custom formulated EPDM sponge rubber compound.
Resistance to;	Ozone – Excellent Water Absorption - Excellent Sunlight Aging - Excellent Low Temperature – Excellent Compression Set - Good
General Temperature Rating;	-20 Degrees to +158 Degrees
Compression Rating and Density	Recommended 25% compression for the maximum performance. It has density of 21 to 23 lbs./pcf
Flammability & Code Compliance;	FMVSS 302 - Horizontal Burn UL50

Adhesive Options;

“BT” Pressure Sensitive Adhesive This 3M Acrylic Automotive grade tape creates the ultimate bond to the rubber and the ultimate bond to the substrate. Creates a moisture barrier and airtight seal between rubber and substrate. Highest peel and shear resistance can be used under high loads of stress and force. Has low initial tack for easy re-positioning during installation and needs 72 hours of cure time to come to full bond strength. Good heat performance -20F to +158F.

“HT” Pressure Sensitive Adhesive This acrylic based adhesive is best used to hold the rubber seal in place while installing it in a static application or compressed between two stationary objects. May be used in some light duty dynamic applications against a variety of substrates. Good heat performance -20F to +158F. Please note during application ambient temperature must be above +60F.

Trim-Lok®, Inc. warrants all products to be free from defects in material and workmanship for a period of ninety (90) days from date of purchase. This warranty does not include damage to products resulting from accident, misuse, improper installation or storage, and unauthorized alterations.

Trim-Lok’s warranty obligation shall be limited to furnishing substitute products for original products, which in Trim-Lok’s sole judgement, have proven defective in material or workmanship within the ninety (90) day warranty period.

Any implied warranties of merchantability or propriety for any particular purpose, shall be strictly limited in duration to that of the express warranty set forth above. In no event shall Trim-Lok be liable for any special, incidental or consequential damages resulting from the manufacture, sale, or use of these products under any legal theory. Said damages shall include, but not be limited to, lost profits, damage to property, or damages for personal injury. Trim-Lok’s liability shall in no case exceed the price paid for the product claimed to be defective.

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