

2663
rev. 7
August 2005

FRCP, FSI, CGP, PSI

STRUCTOGLAS EMBOSSED AND SMOOTH CEILING PANELS CLASS A & C FIRE RATING PER ASTM E-84

Product Description:

Structoglas Class A and C fiberglass reinforced plastic (frp) ceiling panels are durable, semi-rigid, and will not mold, mildew, rot, rust, corrode, stain, dent, peel, or splinter. Panels exhibit a high strength-to-weight ratio with expansion/contraction values similar to aluminum.

Purpose:

Structoglas panels are recommended for use on interior ceilings requiring a Class A or Class C finish for agricultural, commercial and industrial buildings where sanitation, durability, aesthetics and safety are critical.

TABLE ONE: TYPICAL PHYSICAL PROPERTIES OF CEILING PANELS

Typical Values					Test Method
Property	FRCP* 0.10" (2.54 mm)	FSI 0.10" (2.54 mm)	CGP* 0.10" (2.54 mm)	PSI 0.075" (1.9 mm)	
Tensile Strength	8,300 psi (57 MPa)	8,000 psi (55 MPa)	8,800 psi (61 MPa)	8,000 psi (55 MPa)	ASTM D790
Tensile Modulus	590,000 psi (4,068 MPa)	940,000 psi (6481 MPa)	600,000 psi (4,136 MPa)	1,100,000 psi (7584 MPa)	ASTM D790
Flexural Strength	12,400 psi (85 MPa)	16,000 psi (110 MPa)	17,000 psi (117 MPa)	16,000 psi (110 MPa)	ASTM D638
Flexural Modulus	525,000 psi (3,620 MPa)	800,000 psi (5516 MPa)	640,000 psi (4,412 MPa)	900,000 psi (6205 MPa)	ASTM D638
Impact Strength (IZOD)	4.1 ft•lbs/in (0.22 J/mm)	12 ft•lbs/in (0.64 J/mm)	6.1 ft•lbs/in (0.33 J/mm)	11 ft•lb/in (0.59 J/mm)	ASTM D256
Barcol Hardness	20-40	50	35-40	50	ASTM D2583
Coefficient of Linear Thermal Expansion	2.64 x 10 ⁻⁵ in/in•°F (48µm/m•°C)	1.4 x 10 ⁻⁵ in/in•°F (25 µm/m•°C)	2.25 x 10 ⁻⁵ in/in•°F (41µm/m•°C)	1.5 x 10 ⁻⁵ in/in•°F (27 µm/m•°C)	ASTM D696
Water Absorption %	<0.19% in 24 hrs @77°F (25°C)	<0.38% in 24 hrs @77°F (25°C)	<0.75% in 24 hrs @77°F (25°C)	<0.15% in 24 hrs @77°F (25°C)	ASTM D570

* Based on limited trial runs.

TABLE TWO: DESIGN TABLE

Product Code	Nominal Thickness	Color	Finish	Fire Rating	Calculated Deflection Potential	
					2' x 4' Panel (0.3 m x 1.2 m)	2' x 2' Panel (0.3 m x 0.3 m)
FRCP	0.10" (2.54 mm)	1130 White	Embossed	Class A per ASTM E-84 ≤ 25 flame spread ≤ 450 smoke developed	≤0.41" (10.4 mm)	≤0.16" (4.1 mm)
FSI	0.10" (2.54 mm)		Smooth		≤0.30" (7.6 mm)	≤0.12" (3.1 mm)
CGP	0.10" (2.54 mm)		Embossed	Class C per ASTM E-84 ≤ 200 flame spread ≤ 450 smoke developed	≤0.50" (13.0 mm)	≤0.20" (5.1 mm)
PSI	0.075" (1.9 mm)		Smooth		≤0.35" (9.0 mm)	≤0.14" (3.6 mm)

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 pebble-like embossed or smooth finish. Color shall be uniform throughout, as specified. 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 Kemlite Company's 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 Structoglas "Installation Guide."

FABRICATING RECOMMENDATIONS:

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

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

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

Production fabrication: 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 Structoglas products should be stored indoors.

SERVICEABLE TEMPERATURE RANGE:

Panels will perform in temperatures from -40°F (-40°C) to 150°F (66°C). For use in environments beyond this range contact Kemlite Company for recommendations.

LIMITATIONS:

Near heat source - Structoglas panel products may discolor when installed behind or near any heat source which radiates temperatures exceeding 130°F (55°C), such as cookers, ovens, and deep fryers.

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 does not provide an acceptable appearance, Kemlite Company should be notified at once. Upon verification of unacceptability, that portion of material will be replaced by Kemlite Company. Kemlite Company's sole responsibility is for the replacement of defective materials but not for labor or other handling or installation expenses.

CERTIFICATION:

- A. FRCP and FSI: Flame spread ≤ 25 , smoke developed ≤ 450 (as tested per ASTM E-84)
- B. CGP and PSI: Flame spread ≤ 200 , smoke developed ≤ 450 or less (as tested per ASTM E-84)
- C. Meets USDA/FSIS requirements
- D. Frp does not support mold or mildew (as tested per ASTM D3273 and ASTM D3274)

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.

FLAME SPREAD AND SMOKE DEVELOPMENT RATINGS

The numerical flame spread and smoke development ratings are not intended to reflect hazards presented by Kemlite Company 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"). KEMLITE COMPANY 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.

