

# ELFOAM<sup>®</sup> P600

## POLYISOCYANURATE FOAM

September 2016

### Product Description

ELFOAM P600 is a 6.0 lb/ft<sup>3</sup> (96 kg/m<sup>3</sup>), rigid, unfaced, closed cell polyisocyanurate foam supplied as blocks, sheets and fabricated shapes for a variety of insulation, core material and carving applications. Polyisocyanurate foam (polyiso) is similar to polyurethane foam but offers greater dimensional stability over a wider service temperature range.

ELFOAM P600 is manufactured in bunstock form 16" (40cm) thick; 48" (122cm) wide; and 96" (244cm) long. Cut sheets are offered in thicknesses from 1/8" to 6" (.32cm to 16cm) in 1/32" (.08cm) increments. Custom sizes and fabricated parts up to 16" (66cm) thick, 48" (122cm) wide and 192" (488cm) in length are available for customers wanting to eliminate in-house cutting, handling, and scrap disposal. Contact the Indianapolis Sales Office for additional information.

### Design Considerations

ELFOAM P600 is designed for use in environments where temperatures range from -297 to +300°F (-183 to +149°C). However, in non-laminated applications where temperatures exceed 140°F (60°C) and/or have relative humidity above 70% as well as in processes where frequent and severe thermal cycling occurs, allowances for foam dimensional changes may need to be incorporated into engineering design. Regardless of operating conditions, a qualified design engineer should review all foam applications.

ELFOAM, like all cellular plastics, will degrade with prolonged exposure to sunlight. To prevent such degradation, foam materials should be covered. Other barriers to protect exposed foam surfaces from the elements and to meet applicable fire and safety regulations may also be required.

### Environmental Data

ELFOAM P600 is specifically formulated to provide excellent physical properties without the use of chlorofluorocarbon (CFC) or hydrochlorofluorocarbon (HCFC) blowing agents. In compliance with the Montreal Protocol and the Clean Air Act, ELFOAM P600 is manufactured with hydrocarbon blowing agents which have no ozone depletion or global warming potential.



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Manufacturer/Fabricator of ELFOAM Polyiso & Polyurethane Products

### Applications

Typical products incorporating ELFOAM P600 include:

- Laminated wall and roof panels
- Truck/Trailer bodies, shipping containers and railcars
- FRP panels, tanks and shelters
- Pultrusion and infusion processes
- Pipe, tank and vessel insulation
- Plugs, patterns and carved products

Note that application testing is often required to determine suitability of the foam for a specific application. Potential users should perform pertinent testing to determine the suitability of the product for the intended application. Final determination of fitness of the product for any particular use is the responsibility of the buyer.

### Compliances and Approvals

ELFOAM P600 meets industry standards, specifications, regulations and technical guidelines put forth by numerous commercial, federal and military entities including ASTM International, Underwriters Laboratories, and the US Departments of Transportation and Defense. Contact the Indianapolis Sales Office for additional information.

### Safety

All persons who work with ELFOAM products should follow proper handling procedures. The ELFOAM Safety Data Sheet (SDS) contains information about proper handling, storage and use of this material. A copy of this document may be downloaded at [elliottfoam.com](http://elliottfoam.com) or obtained by calling the Indianapolis Sales Office.

### Availability

All ELFOAM product support, samples, pricing and orders are coordinated by the Indianapolis Sales Office. Please call (800) 545-1213 for details. ELFOAM product data sheets may also be downloaded at [elliottfoam.com](http://elliottfoam.com).

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**Product Description**

ELFOAM P600 is a rigid, closed cell, preformed, unfaced, polyisocyanurate foam material (polyiso). This CFC and HCFC free product provides outstanding physical properties in applications having a service temperature between -297 and +300°F (-183 and +149°C). ELFOAM P600 is grey in color and is available in blocks, sheets and fabricated shapes.

Physical Properties <sup>1, 2</sup>	ASTM Method	Typical Values <sup>3</sup>	
		English	Metric
Density	D1622	6.0 lb/ft <sup>3</sup>	95.8 kg/m <sup>3</sup>
Thermal Conductivity, k-factor <sup>4</sup> Initial at 75°F (24°C) Aged 10 days at 158°F (70°C)	C518	0.180 (BTU-in)/(hr-ft <sup>2</sup> ·°F) 0.192 (BTU-in)/(hr-ft <sup>2</sup> ·°F)	0.026 W/(m·°C) 0.028 W/(m·°C)
Thermal Conductivity, R-value per inch <sup>4</sup> Initial at 75°F (24°C) Aged 10 days at 158°F (70°C)	C518	5.5 (hr-ft <sup>2</sup> ·°F)/BTU 5.2 (hr-ft <sup>2</sup> ·°F)/BTU	0.97 (m <sup>2</sup> ·°C)/W 0.92 (m <sup>2</sup> ·°C)/W
Compressive Strength / Modulus Parallel to Rise Perpendicular to Rise <sup>5</sup>	D1621	142 / 4,770 lb/in <sup>2</sup> 121 / 3,090 lb/in <sup>2</sup>	978 / 32,865 kPa 834 / 21,290 kPa
Shear Strength / Modulus Parallel to Rise Perpendicular to Rise <sup>5</sup>	C273	85 / 1,050 lb/in <sup>2</sup> 71 / 850 lb/in <sup>2</sup>	585 / 7,234 kPa 489 / 6,063 kPa
Tensile Strength / Modulus Parallel to Rise Perpendicular to Rise <sup>5</sup>	D1623	135 / 3,940 lb/in <sup>2</sup> 115 / 2,280 lb/in <sup>2</sup>	930 / 27,146 kPa 792 / 15,709 kPa
Flexural Strength / Modulus Parallel to Rise Perpendicular to Rise <sup>5</sup>	C203	241 / 5,991 lb/in <sup>2</sup> 170 / 3,896 lb/in <sup>2</sup>	1,661 / 41,298 kPa 1,171 / 26,843 kPa
Closed Cell Content (by volume)	D6226		95%
Water Absorption (by volume)	C272		0.5%
Water Vapor Transmission	E96	2.0 perms-in	2.9 ng/Pa·s·m
Dimensional Stability <sup>6</sup> (length / volume change) +158°F(70°C), 97 ± 3% relativity humidity, 14 days -40°F(-40°C), ambient relativity humidity, 14 days +212°F(100°C), ambient relative humidity, 14 days	D2126		+0.6 / +1.7% +0.1 / -0.4% -0.2 / +0.5%
Coefficient of Linear Thermal Expansion 0 to +250°F (-17 to +121°C)	E228	35 x 10 <sup>-6</sup> in/in·°F	63 x 10 <sup>-6</sup> mm/mm·°C
Hot Surface Performance at 300°F (149°C)	C411		Pass
Surface Burning Characteristics <sup>7</sup> Flame Spread, thicknesses up to 6 in (15.2 cm) Smoke Developed, thicknesses up to 6 in (15.2 cm)	E84		25 <450
Polyisocyanurate Insulation Requirements	C591		Grade 2, Type VI compliant

1 Data shown are typical values obtained from representative production samples. For specific property ranges, consult the Indianapolis Sales Office.  
 2 All properties measured at 73 ± 4°F (23 ± 2°C) unless otherwise indicated.  
 3 To be used only as a guide for design engineering purposes. Potential user is responsible for performing pertinent tests required to determine product suitability for the intended application.  
 4 k-factors and R-values vary with age and use conditions. Contact Indianapolis Sales Office for values at other mean temperatures.  
 5 Represents the lowest typical value across all axes related to Perpendicular to Rise performance. Contact the Indianapolis Sales Office for additional information.  
 6 Frequent and severe thermal cycling can produce dimensional changes significantly greater than those stated here. Special design consideration must be made in applications that cycle frequently.  
 7 Published data is not intended to reflect hazards represented by this or any other material under actual fire conditions. This material is combustible when exposed to large fire sources.  
 For more information, contact the Indianapolis Sales Office.

NOTE: Because use conditions and applicable laws may differ from one location to another and may change with time, Buyer is responsible for determining whether the product and information in this document are appropriate for Buyer's use and for ensuring that Buyer's related products, workplace and disposal practices are in compliance with applicable laws and other government enactments. Elliott Company of Indianapolis, Inc. assumes no obligation or liability for the information in this document. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

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1-800-545-1213  
 OR VISIT  
[elliottfoam.com](http://elliottfoam.com)



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9200 Zionsville Road Indianapolis, Indiana 46268  
 Phone: (317) 291-1213 • Fax: (317) 291-1219