

Touchstone CFOAM® 25 Structural Carbon Foam

Category : Carbon , Other Engineering Material , Composite Core Material

Material Notes:

CFOAM, developed by Touchstone Research Laboratory, Ltd., is a next generation structural material which is inexpensive, lightweight, fire-resistant, impact-absorbing, and which can be thermally insulating or conducting and whose electrical conductivity can be varied over seven orders of magnitude. It can be fabricated in a variety of shapes, sizes, and densities to meet the property requirements of specific applications. These foams will not off-gas at elevated temperatures and will not support ignition. Unlike most metals and ceramics, CFOAM mechanical properties do not deteriorate with increased temperature if protected from oxidization, making carbon foams an attractive thermal protection material. Carbon foams also are tolerant to impact damage and can be repaired in-place using carbonaceous adhesives. They can be bonded easily to dissimilar materials, such as metals or PMCs, for oxidation or further impact protection, respectively. Results from ASTM E1354, ASTM E1515, MIL-STD-1623, Coast Guard IMO, and FTP Code Part I and Part III indicate that CFOAM will pass all key fire tests including radiant panel, smoke generation, toxicity, cone calorimeter, fire resistance, and room corner tests. Information provided by Touchstone Research Laboratory.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Touchstone-CFOAM-25-Structural-Carbon-Foam.php

Physical Properties	Metric	English	Comments
Density	0.400 g/cc	0.0145 lb/in ³	ASTM D1622

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	>= 3.45 MPa	>= 500 psi	ASTM C297
Tensile Modulus	0.827 GPa	120 ksi	ASTM C297
Compressive Strength	>= 13.8 MPa	>= 2000 psi	ASTM C365
Compressive Modulus	0.827 GPa	120 ksi	ASTM C365
Shear Strength	>= 2.07 MPa	>= 300 psi	Torsional Shear

Thermal Properties	Metric	English	Comments
CTE, linear	5.76 µm/m-°C	3.20 µin/in-°F	ASTM E228
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Thermal Conductivity	0.250 - 25.0 W/m-K	1.74 - 174 BTU-in/hr-ft ² -°F	Tailorable; ASTM E1225
Maximum Service Temperature, Air	600.0 °C	1112 °F	
Maximum Service Temperature, Inert	3000 °C	5430 °F	

Electrical Properties	Metric	English	Comments
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Electrical Properties	Metric $0.0100 - 1.00e+7 \text{ ohm-cm}$	English $0.0100 - 1.00e+7 \text{ ohm-cm}$	Comments ASTM D4496
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