

## Touchstone CFOAM® 20 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-20-Structural-Carbon-Foam.php](http://www.lookpolymers.com/polymer_Touchstone-CFOAM-20-Structural-Carbon-Foam.php)

Physical Properties	Metric	English	Comments
Density	0.320 g/cc	0.0116 lb/in <sup>3</sup>	ASTM D1622

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	>= 2.07 MPa	>= 300 psi	ASTM C297
Tensile Modulus	0.414 GPa	60.0 ksi	ASTM C297
Compressive Strength	>= 7.58 MPa	>= 1100 psi	ASTM D365
Compressive Modulus	0.621 GPa	90.0 ksi	ASTM D365
Shear Strength	>= 1.31 MPa	>= 190 psi	Torsional Shear

Thermal Properties	Metric	English	Comments
CTE, linear	5.04 μm/m-°C	2.80 μin/in-°F	
Thermal Conductivity	0.250 W/m-K	1.74 BTU-in/hr-ft <sup>2</sup> -°F	
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	0.700 W/m-K	4.86 BTU-in/hr-ft <sup>2</sup> -°F	
	@Temperature 500 °C	@Temperature 932 °F	
	1.00 W/m-K	6.94 BTU-in/hr-ft <sup>2</sup> -°F	
	@Temperature 1000 °C	@Temperature 1830 °F	

Thermal Properties	4.00 W/m-K Metric	27.8 BTU-in/hr-ft <sup>2</sup> -F English	Comments
	@Temperature 2000 °C	@Temperature 3630 °F	
Maximum Service Temperature, Air	>= 299 °C	>= 570 °F	
Maximum Service Temperature, Inert	>= 3000 °C	>= 5430 °F	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.069 ohm-cm	0.069 ohm-cm	Standard
	0.0025 - 2.5e+6 ohm-cm	0.0025 - 2.5e+6 ohm-cm	Tailorable; ASTM D4496

Descriptive Properties	Value	Comments
Fire Resistance	ISO 1182, ASTM E1354, ASTM E119, IMO FTP Cote Pt. I & III, UL1709	Pass

## Contact Songhan Plastic Technology Co.,Ltd.

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