

Goodfellow Carbon-Carbon Composite

Category : Polymer , Thermoset , Carbon Fiber/Thermoset Composite

Material Notes:

Carbon Fiber - Carbon Matrix Information provided by Goodfellow.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Goodfellow-Carbon-Carbon-Composite.php

Physical Properties	Metric	English	Comments
Density	1.30 - 1.80 g/cc	0.0470 - 0.0650 lb/in ³	

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	<= 10.0 MPa	<= 1450 psi	Transverse
	40.0 - 70.0 MPa	5800 - 10200 psi	Longitudinal
Tensile Modulus	20.0 - 30.0 GPa	2900 - 4350 ksi	Parallel to Plane
Flexural Strength	80.0 - 200 MPa	11600 - 29000 psi	Parallel to Plane
Flexural Modulus	10.0 - 20.0 GPa	1450 - 2900 ksi	Parallel to Plane
Compressive Strength	60.0 - 150 MPa	8700 - 21800 psi	Perpendicular to Plane
	120 - 200 MPa	17400 - 29000 psi	Parallel to Plane
Shear Strength	20.0 - 30.0 MPa	2900 - 4350 psi	in Plane

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	1.50 $\mu\text{m}/\text{m}\cdot\text{C}$	0.833 $\mu\text{in}/\text{in}\cdot\text{F}$	
	@Temperature 20.0 - 1000 $^{\circ}\text{C}$	@Temperature 68.0 - 1830 $^{\circ}\text{F}$	
CTE, linear, Transverse to Flow	6.00 $\mu\text{m}/\text{m}\cdot\text{C}$	3.33 $\mu\text{in}/\text{in}\cdot\text{F}$	
	@Temperature 20.0 - 1000 $^{\circ}\text{C}$	@Temperature 68.0 - 1830 $^{\circ}\text{F}$	
Thermal Conductivity	50.0 - 100 W/m-K	347 - 694 BTU-in/hr-ft ² - $^{\circ}\text{F}$	Perpendicular to Plane
	250 - 300 W/m-K	1740 - 2080 BTU-in/hr-ft ² - $^{\circ}\text{F}$	Parallel to Plane

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.00300 ohm-cm	0.00300 ohm-cm	

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