

CIP Composites 100 Series Laminated Polymer Bearing Material

Category : Polymer , Thermoset

Material Notes:

The 100 series consists of polyester fabric and one of several solid lubricants (optional) in a resin matrix. Non-metallic, high load, high impact and self lubricating laminated material. Laminated polymer material made by impregnating textile with a thermoset resin. CIP Composites™ offer design engineers an attractive, cost effective alternative to the traditional materials used for bushings, bearings, wear pads, and thrust washers, such as bronze, brass or nylon. CIP Composites™ are only 1/6 the weight of steel, easily machined, have good dimensional stability and do not contain harmful or toxic materials.

Order this product through the following link:

http://www.lookpolymers.com/polymer_CIP-Composites-100-Series-Laminated-Polymer-Bearing-Material.php

Physical Properties	Metric	English	Comments
Density	1.30 g/cc	0.0470 lb/in ³	
Moisture Absorption	<= 0.1 %	<= 0.1 %	water swell < 0.15%

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	100	100	ASTM D785
Tensile Strength	75.8 MPa	11000 psi	ASTM D638
Tensile Modulus	3.24 GPa	470 ksi	ASTM D638
Flexural Modulus	1.79 GPa	260 ksi	ASTM D790
Compressive Yield Strength	103 MPa	15000 psi	ASTM D695
Compressive Strength	93.1 MPa	13500 psi	Parallel to Laminate; ASTM D695
	345 MPa	50000 psi	ASTM D695
Compressive Modulus	3.45 GPa	500 ksi	ASTM D695
Poissons Ratio	0.231	0.231	ASTM D3039-08
Shear Strength	82.7 MPa	12000 psi	ASTM D3846
Coefficient of Friction, Dynamic	0.13 - 0.15	0.13 - 0.15	Dry, Grade CIP 151 (MoS2 + PTFE Filled)
	0.15 - 0.20	0.15 - 0.20	Dry, Grade CIP 121 (Graphite Filled)

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	32.0 μm/m-°C	17.8 μin/in-°F	
	@Temperature 20.0 -	@Temperature 68.0 -	Parallel to Laminate

Thermal Properties	93.3 °C Metric	200 °F English	Comments
CTE, linear, Transverse to Flow	63.0 $\mu\text{m}/\text{m}\cdot\text{°C}$ @Temperature 20.0 - 93.3 °C	35.0 $\mu\text{in}/\text{in}\cdot\text{°F}$ @Temperature 68.0 - 200 °F	Normal to Laminate
Maximum Service Temperature, Air	93.3 °C	200 °F	
Minimum Service Temperature, Air	-40.0 °C	-40.0 °F	

Electrical Properties	Metric	English	Comments
Volume Resistivity	4.20e+15 ohm-cm	4.20e+15 ohm-cm	ASTM D257-07
Dielectric Strength	7.87 kV/mm	200 kV/in	ASTM D149-97a

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