

## G-3 Fiberglass Phenolic Laminate Sheet

Category : Polymer , Thermoset , Filled/Reinforced Thermoset , Phenolic , Phenolic/Glass Fiber SMC

### Material Notes:

This material is made from woven glass cloth and high-temperature phenolic resin. It has excellent flexural, compressive and impact strengths. Physical strength, resiliency, ease and versatility of fabrication, and excellent electrical properties make phenolic laminates useful as support components in a wide range of mechanical and electrical applications. Phenolic laminates are strong, stiff, and have high impact and compressive strengths. They do not soften upon re-heating, so they are easy to saw, drill, tap, and machine with ordinary tools. Glass-based grades have the highest dimensional stability and mechanical strength, as well as low moisture absorption. However, they are not as easily machined as paper or cotton fabric laminates. Information provide by Boedeker Plastics.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_G-3-Fiberglass-Phenolic-Laminate-Sheet.php](http://www.lookpolymers.com/polymer_G-3-Fiberglass-Phenolic-Laminate-Sheet.php)

Physical Properties	Metric	English	Comments
Density	1.80 g/cc	0.0650 lb/in <sup>3</sup>	ASTM D792
Water Absorption	2.65 %	2.65 %	24 hrs.; ASTM D570

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	110	110	ASTM D785
Tensile Strength at Break	234 MPa	34000 psi	Crosswise; ASTM D638
	290 MPa	42000 psi	Lengthwise; ASTM D638
Flexural Strength	234 MPa	34000 psi	Crosswise; ASTM D790
	279 MPa	40500 psi	Lengthwise; ASTM D790
Flexural Modulus	9.65 GPa	1400 ksi	Crosswise; ASTM D790
	12.4 GPa	1800 ksi	Lengthwise; ASTM D790
Compressive Strength	379 MPa	55000 psi	ASTM D695
Izod Impact, Notched	5.87 J/cm	11.0 ft-lb/in	Crosswise; ASTM D256
	6.41 J/cm	12.0 ft-lb/in	Lengthwise; ASTM D256

Thermal Properties	Metric	English	Comments
CTE, linear	14.9 $\mu\text{m}/\text{m}\cdot\text{°C}$	8.30 $\mu\text{in}/\text{in}\cdot\text{°F}$	Lengthwise; ASTM D696
	@Temperature 20.0 °C	@Temperature 68.0 °F	
CTE, linear, Transverse to Flow	18.0 $\mu\text{m}/\text{m}\cdot\text{°C}$	10.0 $\mu\text{in}/\text{in}\cdot\text{°F}$	Crosswise; ASTM D696
	@Temperature 20.0 °C	@Temperature 68.0 °F	

Thermal Properties	Metric	English	Comments
Maximum Service Temperature, Air	170 °C	338 °F	
Flammability, UL94	HB	HB	

Electrical Properties	Metric	English	Comments
Dielectric Constant	7.3 @Frequency 1e+6 Hz	7.3 @Frequency 1e+6 Hz	ASTM D150
Dielectric Strength	18.1 kV/mm	460 kV/in	Short Time; 1/8 inch; ASTM D149
Dissipation Factor	0.023 @Frequency 1e+6 Hz	0.023 @Frequency 1e+6 Hz	ASTM D150
Arc Resistance	180 sec	180 sec	ASTM D495

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