Current Industrial Composites
Sheeting · Tubes · Rods · Fabricated Parts · Epoxy · Phenolic

MATERIAL DATA SHEET

Material: Grade G10 Glass Epoxy laminated Sheet

Description: G-10 laminated sheet is a woven glass fabric composite impregnated with an epoxy resin. It is primarily used for mechanical, electrical, and electronic applications where extremely high mechanical strengths are required at room and moderate temperatures. It is frequently specified for its excellent resistance to chemicals and retention of good electrical properties in dry and high humidity environments. G-10 is non-brominated and is not flame retardant and should not be confused with a similar glass epoxy grade FR-4, which is flame retardant.

Standards: NEMA LI-1 Grade G-10
MIL-I-24768 / 2 Type GEE

Physical Properties	Test Condition	ASTM	Typical Values
For Thickness			.125"
.125"		D792	1.90
1.80		D785	120
100		D229	0.75%
.15%	Condition A: Lengthwise Crosswise	D229	55,000 psi 45,000 psi
Tensile Strength	Condition A: Lengthwise Crosswise		40,000 psi 32,000 psi
Compressive Strength	Condition A: Flatwise Edgewise	D695	68,000 psi 35,000 psi
Izod Impact Strength (.500" thick)	E48/40: Lengthwise Crosswise	D229	9.5 ft-lb/in.(notch) 7.5 ft-lb/in.(notch)
Bond Strength (.500" thick)	Condition A	D229	2500 lbs

Thermal & Electrical Properties	Test Condition	ASTM	Typical Values
Temperature Index Electrical / Mechanical			130° C / 140° C
Volume resistivity			$6x10^6$ megohms-cm
Surface resistivity			$1x10^6$ megohms
Dielectric Breakdown Voltage (step x step)	Condition A / D 48/50	D229	48.0 kV / 49.0 kV
Maximum Permittivity @ 1 MHz	Condition A / D 24/23	D229	5.40

Maximum Dissipation @ 1 MHz	Condition A / D 24/23 / D48 / 50	D229	0.035
Dielectric Strength (short time)	Condition A	D229	550 Vpm
Arc Resistance	Condition A	D 495	120 seconds