



# GPO-3 (Polyply Composites)

## Electrical grade sheet laminates

General Information	Unit	ASTM/UL TEST NO.	Typical Average Values	
Polply Grade			L40	L50
NEMA Grade			GPO-2	GPO-3
Color			Red	Red
U.L. Recognized File Number			E82624	E82624
<b>Mechanical Properties</b>				
Tensile Strength	psi	D638	9,800	10,000
Flexural Strength	psi	D790	22,000	23,200
Compressive Strength	psi	D695	32,000	32,800
Flexural Modules	psi x 106	D790	1.20	1.23
Shear Strength	psi	D732	14,000	14,000
Izod Impact Strength (notched)	ft-lb/in	D256	8.0	8.2
Water Absorption	% by weight	D570	0.23	0.21
Barcol hardness		D2583	50	50
Specific Properties		D792	1.8	1.8
<b>Electric Properties</b>				
Dielectric Strength (- in oil)	volts/mil	D149	415	400
Dielectric Strength (Parallel in oil)	kV	D149	61	57
High Voltage Arc Resistance	sec	D495	200+	200+
Dielectric Constant @ 60 Hz		D150	4.6	4.8
Dielectric Constant @ M Hz		D150	4.5	4.7
Dissipation Factor @ 60 Hz		D150	.014	.013
Dissipation Factor @ M Hz		D150	.012	.011
Comparative Tracking Index	volts	D3638	500+	500+
<b>Flame Resistance Properties</b>				
U.L. Subject 94		UL94	94VO	94VO
<b>Thermal Properties</b>				
Coefficient of Thermal Expansion	in/in/C x 10 <sup>-5</sup>	D696	2.0	2.0
Thermal Conductivity	btu/hr/ft <sup>2</sup> /in/ <sup>o</sup> F	C177	1.8	1.9
U.L. Temperature Index-Electrical	<sup>o</sup> C	UL746B	130	120
U.L. Temperature Index-Mechanical	<sup>o</sup> C	UL746B	160	140

\* All properties are based on 1/8" thick sheet

Unless otherwise indicated, all properties published are based on tests performed on standard ASTM test samples and according to ASTM test methods. Values shown are for test samples made from production materials and they are believed to be typical. No warranty is expressed or implied.