



# POLYCHEM INTERNATIONAL

B28, Shalimar Industrial Estate, Next to Tata Power, Matunga Labour Camp, Mumbai 400 019.  
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## TECHNICAL DATA SHEET OF GLASS POLYESTER LAMINATES

GRADE : NEMA GPO3  
 SPECIFICATION : NEMA LI-1-2001  
 COLOUR : RED / WHITE  
 THICKNESS RANGE : 0.031" - 2.0"  
 SHEET SIZE : 96" X 48" / 48" X 48"  
 Description : This grade LL-GPO3 is manufactured with un-saturated polyester resin containing glass reinforcement and suitable fillers that is cured by heat and pressure. The material has good dielectric strength and excellent Arc and Arc tracking resistance combining with fair mechanical strength. This has also flame retardant. properties This grade is perfect for Switchgear application, for example: Face barrier, Bus bar supports and spacers.

S. No	Properties	Test Method as per ASTM	Unit	Condition	Nominal Thickness for which requirement applies	Specification	Average Test Results
<b><u>PHYSICAL PROPERTIES</u></b>							
1.	Density	D229	g/cm <sup>3</sup>	A	All Thickness	1.7 – 1.95	1.85
2.	Water Absorption (max)	D229	%	D-24/23	All Thickness	0.062" -0.6% 0.125" – 0.50% 0.250" – NA 0.500" – 0.25%	0.55 0.48 0.35 0.18
3.	Rockwell Hardness	D229	M-Scale	A	All Thickness	100	M-105
<b><u>MECHANICAL PROPERTIES.</u></b>							
1.	Tensile strength L.W. C.W.	D229	PSI	A	≥ 0.063"	8,000 8,000	30,000 40,000
2.	a) Flexural Strength L.W. C.W.	D229	PSI	A	≥ 0.031"	18,000 18,000	25,000 35,000
	b) Flexural Strength at Elevated Temp. 130° L.W.	D229	PSI	E-1/130, T130	≥ 0.031"	6,000	10,000
3.	Shear strength – Flat Wise	D229	PSI	A	≥ 0.125"	14,000	16,000
4.	Impact Strength A. Izod L.W. C.W.	D229	PSI	Ft-lb/inch (Notch)	≥ 0.125	8 8	12 14
5.	Compressive strength Flat Wise	D229	PSI	A	≥ 0.500"	30,000	35,000
6.	Bonding Strength	D229	LBS	A D/48/50	≥ 0.500"	850 800	1200 950



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S. No	PROPERTIES	ASTM Test Method	Units	Condition	Nominal Thickness for which requirement applies	Specification	Average Test Results
<b><u>ELECTRICAL PROPERTIES</u></b>							
1.	Minimum Breakdown Voltage (Parallel to Lamination)	D229	kV	A D-48/50	All Thickness	40 15	>50 18
2.	Electric Strength (perpendicular to lamination)	D229	V/mill	In oil at RT	< 0.125"	300	350
3.	Insulation Resistance after (Immersion in water for 24 hours)	D229	MΩ	C-96/35/90	≤ 0.98"	NA	600
4.	Maximum Permittivity at 1 MHz	D229	---	A D24/23	All Thickness	4.20 4.40	4.23 4.35
5.	Maximum Dissipation Factor at 1Mhz	D229	---	A D-24/23	All Thickness	0.03 0.06	0.015 0.020
6.	Comparative tracking index	D 2303	---	A	All Thickness	---	>600
7.	Arc Resistance	D 229	Seconds	A	All Thickness	150	160
<b><u>THERMAL PROPERTIES</u></b>							
1.	Temperature Index	VDE 0304/2	°C	--	All Thickness	130°C	130°C/140°C
2.	Insulating class	IEC Publ.85	--	--	All Thickness	B	B
3.	Flammability	UL94	Class	A	All Thickness	V0	V0

Ref. Std. NEMA– LI-1-2001(GPO3)