



POLYCHEM INTERNATIONAL

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TECHNICAL DATA SHEET OF GLASS EPOXY LAMINATES GRADE LPL / G11

- GRADE : LPL / G11 / EPGC203 – 155°C (Class – F)
 SHEET SIZE : 2440mm x 1220mm / 1220mm x 1220mm
 THICKNESS RANGE : 0.0187” – 2”
 DESCRIPTION : This is a glass reinforced Epoxy resin bonded high pressure laminate for use in electrical applications where high arc resistance as well as extremely high mechanical strength (Flexural strength) at room temperature and minimum of 50% value at elevated temperature at 150 °C & Good di-electric loss and electric strength properties under both dry and humid condition, are required.

S.No	PROPERTIES	UNITS	SPECIFICATION
1.	<u>PHYSICAL PROPERTIES</u>		
a)	Specific Gravity	--	1.8 +/-1
b)	Marten's Heat distortion Temperature (For thickness \geq 10mm)	°C	240 °C (min)
c)	Water absorption (at 20 °C for 24 hours)	%	3mm – 10mm – 0.15% max. 10mm – 25mm – 0.1% max. More than 25mm – 0.1% max.
2.	<u>MECHANICAL PROPERTIES:</u>		
a)	Tensile Strength (Thickness \geq 1.5 & above)	N/mm ²	250 (min)
b)	Cross Breaking Strength (Thickness \geq 1.5 & above)		
a)	At Room Temperature	N/mm ²	350
b)	After heating at 150 °C for 1 hour and tested at 150 °C	----	Reduction shall not be more than 50 % of the value obtained at received condition
c)	Shear Strength (Thickness \geq 1.5 & above)	N/mm ²	100
d)	Compressive Strength (Thickness \geq 1.5 & above)	N/mm ²	400
e)	Impact Strength (Charpy)-Flat wise (Thickness 2.5 and above)		
	Below 10mm thickness	Kj/m ²	75 (min)
	1 0mm & above	Kj/m ²	150 (min)
f)	Splitting load, Edgewise (For sheets 10mm thick and above):	KN	2.94
g)	Punching (For sheets below 2.5mm)	---	Should have good punching properties.
h)	Machinability (For sheets 3.0mm and above)	---	Shall be capable of being sawn, milled, drilled and tapped



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3.	<u>ELECTRICAL PROPERTIES:</u>		
a)	Insulation Resistance after 24 hours immersion in water at 27 °C	MΩ	10 ⁴ (min)
b)	Electrical strength in oil at 90°C Edge wise 5mm & above Flat wise ≤ 5mm and below >5mm and above	kV kV/mm kV/mm	40 14 12
c)	Dissipation Factor (Tan delta) at 50 Hz	---	0.02 max.
d)	Comparative Tracking Index	---	250, min.
4.	<u>THERMAL PROPERTIES</u>		
a)	Temperature Index (Glass Transition Temperature TG)	---	155 °C **
b)	Insulating Class		Class F

Ref Std: NEMA Specification – LI-1-2001 (G11) / IEC 60893-3-2-2004 (EPGC 203)

****Remark:** As per Specification TG of G11 should be 155 °C, but as per TMA method our G11 we get minimum TG 170°C & above.