



SmithLamina™

Fr4

SmithLamina® FR4 glass epoxy laminates are continuous filament woven fiberglass sheets bonded with flame resistant epoxy resin. The material has the ability to maintain excellent mechanical, electrical, and physical properties at elevated temperature to 130°C.

FR-4 epoxy resin systems typically employ bromine, a halogen or halogen free, to facilitate flame-resistant properties in FR-4 glass epoxy laminates.

FR-4 glass epoxy is a popular and versatile high-pressure thermoset plastic laminate grade with good strength to weight ratios. With near zero water absorption, FR-4 is most commonly used as an electrical insulator possessing considerable mechanical strength. The material is known to retain its high mechanical values and electrical insulating qualities in both dry and humid conditions. These attributes, along with good fabrication characteristics, lend utility to this grade for a wide variety of electrical and

Key Characteristics:

Grade: NEMA LI-1 Grade FR4 / IEC 60893 EPGC 202 / Hgw 2372.1 / EP-4

Standard Colour: Green/Yellow

Specific Density: 1.80 - 2.00 Gm/cm³

Thickness :

Standard Sizes:

TECHNICAL DATA

Key Characteristics	Units	Typical Values
Breakdown Voltage	kV	65
IZOD Impact Strength	Ft. - lb/in	13
Flexural Strength (0.062")	ksi	80
Moisture Absorption (3mm)	%	0.10
Charpy Impact Strength	KJ/m ²	560
Perpendicular Electric Strength (90oC in Oil, 1.5mm)	KV/mm	25
Parallel Breakdown Voltage	KV	>45
Insulation Resistance	M?	>107
Tensile Strength (0.125") LW	ksi(MPa)	62 (430)
Compressive Strength, Flatwise (0.500")	ksi(MPa)	66 (455)
High Current Arc Ignition (3 mm)	Arc	120
Arc Resistance (3 mm)	Sec	140
Comparative Tracking Index (3 mm)	V	230
Dielectric Strength Condition A	V/mil	635

All values are attributes of the used raw materials.

The physical data contained in this table are typical values. They are obtained on test specimens under specific conditions and represent average values of a large number of tests. The results obtained on these tests specimens cannot be applied to finished parts without reservations, as behaviour is influenced by processing and shaping.

SMITH THERM PVT. LTD. Argha Ghat Road, Giridih - 815301, Jharkhand(INDIA)

T +91 6532 225458 F +91 6532 222429 E info@smiththerm.com W www.smiththerm.com