



Leading Manufacturer of
ELECTRICAL INSULATION MATERIALS

九江鑫星绝缘材料有限公司
JIUJIANG XINXING INSULATION MATERIAL CO.,LTD

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3240 ,G-10,G-11,FR-4,FR-5,EPGC308,ESD G10/FR4,EPGM SERIES,UPGM SERIES

TECHNICAL DATA SHEET NEMA FR4

Item:	NEMA FR-4 Glass Epoxy Laminate		
Description:	NEMA Grade FR4 materials are 7628 fiberglass reinforced laminates,bonded with flame resistance epoxy resin.The material has the ability to maintain excellent mechanical,electrical and physical properties at elevated temperature to 130°C. FR4 from Jiujiang Xinxing Insulation is with very good quality and CTI600.		
Standards:	NEMA LI-1 Grade FR4 • IEC60893:EPGC202(sheet) • GB/T 1303.2.2009		
Application:	This product is mainly used as the structure parts for Motor and electrical equipment,including all kinds of switch、 electric equipment、 FPC reinforcement plate、 carbon film printed circuit boards、 computer drilling pad、 mould and smelting equipment(PCB test flame) ;and also suitable under wet environment and transformer oil.		
Availability:	Laminate Sheets:	Thickness	English Units(in) 0.008"-4.0" SI unites(mm/cm) 0.2-101.6(mm)
		Sheet Size	40" x 48" 102cm x 122cm
			48" x 80" 122cm x 204cm
	Fabricated parts:	Xinxing Insulation custom fabricates insulation materials to the exact specifications and drawings of our customers	

TYPICAL PROPERTIES OF FR4/EPGC202 SHEET

Key Characteristic	Units	IEC Requirement	Typical Values	Test Methods
PHYSICAL				
Standard color	--	--	Natural color,Light green,Black ¹	
Density	g/cm ³	1.8-2.0	1.8-2.0 ²	IEC60893-3-2
Water Absorption,24 hrs 3mm	mg	22 max	17	IEC60893-3-2
MECHANICAL				
Flexural strength perpendicular to laminations (MD)	MPa	340 min	549	IEC60893-3-2
Charpy impact strength parallel to laminations (Notched)	kJ/m ²	42 min	63.3	IEC60893-3-2
Tensile strength(MD)	MPa	300 min	399	IEC60893-3-2
Compressive strength	MPa	350 min	550	IEC60893-3-2
THERMAL				
Temperature Index	°C	130	130	-
Flammability	Class	V-0	V-0	UL-94



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ELECTRICAL

Electric strength perpendicular to laminations (at 90°C ±2°C in oil), 1mm in thickness	kV/mm	14.2 min	20	IEC60893-3-2
Breakdown voltage parallel to laminations(at 90°C ±2°C in oil)	kV	45 min	90	IEC60893-3-2
Insulation resistance(after 24h immersion in water)	MΩ	5x10 ⁴ min	5.9x10 ⁸	IEC60893-3-2
Relative Permittivity(50Hz)	--	5.5 max	4.84	IEC60893-3-2
Dielectric dissipation(50Hz)	--	0.04 max	0.035	IEC60893-3-2
Comparative tracking index	--	200 min	CTI 600 ³	IEC60893-3-2

¹Custom colors available upon request

²The density of our pure epoxy fiberglass laminate sheet is about 1.9g/cm³,Custom formula available upon request

³The higher the CTI value, the better the electrical insulation performance of the material and the stronger the ability to resist electrical corrosion. That means the material is less likely to catch fire when it encounters an electric spark. Because electric appliances in the operation process, the circuit control system is easy to encounter electrical sparks, if the use of high CTI material, you can effectively avoid the fire caused by electrical sparks. In the design and manufacture of electrical equipment, the CTI value is an important indicator that can be used to evaluate the safety and reliability of materials to ensure that the equipment will not present electrical faults or hazards when used.

The above values are for reference only and are taken from the average test results, and do not represent complete consistency with the actual performance of the material.