



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 FR5

Item:	NEMA FR5 Glass Epoxy Laminate			
Description:	<p>NEMA Grade FR5 materials are 7628 fiberglass reinforced laminates,bonded with high TG flame resistant epoxy resin.It has high mechanical properties under medium temperature,and stable electrical performance under high temperature .It is suitable used in mechanical,electrical and electronic as the high insulation components.It has high mechanical strength,thermal state mechanical strength,fire resistance,heat resistance and humidity resistance.</p> <p>Our FR5 has passed the test of EN45545-2:2013+A1:2015: Railway applications - Fire protection of railway vehicles-Part2:Requirement for fire behaviour of materials and components,and be approved by CRRC.</p>			
Standards:	NEMA LI-1 Grade FR5 • IEC60893:EPGC204(sheet) • GB/T 1303.2.2009			
Application:	<p>NEMA FR5 epoxy fiberglass laminate sheet is a superior material with a wide range of applications across various industries. Its exceptional electrical insulation, mechanical strength, and thermal resistance properties make it an indispensable material for the manufacturing of electrical, mechanical, and structural components, as well as for aerospace, transportation, and construction applications.</p>			
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
	48" x 96"		122cm x 244cm	
Fabricated parts:	Xinxing Insulation custom fabricates insulation materials to the exact specifications and drawings of our customers			

TYPICAL PROPERTIES OF FR5/EPGC204 SHEET

Key Characteristic	Units	IEC Requirement	Typical Values	Test Methods
PHYSICAL				
Standard color	--	--	Light green, Titanium white ¹	
Density	g/cm ³	1.8-2.0	1.8-2.0 ²	IEC60893-2:2003
Water Absorption,24 hrs 3mm	mg	22 max	17	IEC60893-2:2003
MECHANICAL				
Flexural strength perpendicular to laminations (under normal condition)	MPa	340 min	525	IEC60893-2:2003
Flexural strength perpendicular to laminations (under 150±5°C)	MPa	170 min	285	IEC60893-2:2003
Charpy impact strength parallel to laminations (Notched)	kJ/m ²	45 min	78	IEC60893-2:2003

ISO9001 Certified QMA /Third Party Test Report/ RoHS Compliant / Reach Compliant
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Tensile strength(MD)	MPa	300 min	381	IEC60893-2:2003
THERMAL				
Temperature Index	℃	155	155	-
Flammability	Class	V-0	V-0	UL-94
ELECTRICAL				
Electric strength perpendicular to laminations (at 90℃±2℃ in oil), 1mm in thickness	kV/mm	14.2 min	17.2	IEC60893-2:2003
Breakdown voltage parallel to laminations(at 90℃±2℃ in oil)	kV	50 min	78	IEC60893-2:2003
Insulation resistance(after 24h immersion in water)	MΩ	5x10 ⁴ min	4.2x10 ⁶	IEC60893-2:2003
Relative Permittivity(50Hz)	--	5.5 max	4.9	IEC60893-2:2003
Comparative tracking index	--	200 min	CTI 600 ³	IEC60893-2:2003

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.