



FRANKLIN

MANUFACTURERS & FABRICATORS OF
ELECTRICAL INSULATION MATERIALS
SINCE 1921

Composites for Today's Challenges

FRANKLIN FIBRE – LAMITEX CORPORATION

Phone: 302-652-3621 e-mail: info@franklinfibre.com
Fax: 302-571-9754 web: www.franklinfibre.com

MATERIAL DATA SHEET

Material: Lamitex® Grade PEP-6 Polyester Epoxy Laminate Sheet

Description: Lamitex PEP-6 is an exceptionally strong and tough polyester fabric/epoxy resin composite. It has low swelling properties in water, low water absorption values and high resistance to chemicals, including sulfur hexafluoride (SF₆) gas. PEP-6 was formulated for use in high voltage switchgear applications with SF₆ as the insulation medium.

Standards: EN 60893

EP PC 301

Availability: PEP-6 is also manufactured as fabricated custom parts.

Physical Properties	Test Method EN 60893-2	Standard	Test Specimen	Conditioning IEC 212	Typical Values
Flexural Strength	5.1	ISO 178	≥1.6 mm thick	1	18,855 psi
Flexural Strength at Elevated Temperatures	5.1	ISO 178	≥1.6 mm thick	--	--
Modulus of Elasticity	5.2	ISO 178	≥1.6 mm thick	1	0.65 x 10 ⁶ psi
Compressive Strength	5.3	ISO 604	≥5.0 mm thick	1	50,764 psi
Izod Impact Strength Parallel	5.5.3	ISO 180/2A	≥5.0 mm thick	1	28.51 ft.lb-force/in ²
Shearing Strength Parallel	5.6	EN 60893-2	≥5.0 mm thick	1	5,076 psi
Tensile Strength	5.7	ISO 527	≥1.6 mm thick	1	19,580 psi

Electrical Properties

Electric Strength in oil @ 90°C	Perpendicular to Laminations	6.1.2	IEC 243-1	3.0 mm thick	2	508 Vpm
	Parallel to Laminations	6.1.3	IEC 243-1	> 3.0 mm thick	2	71 Vpm
Permittivity:	50Hz	6.2	IEC 250	≤3.0 mm thick	3	4.0
	1MHz			≤3.0 mm thick		--
Dissipation Factor:	50Hz	6.3	IEC 250	≤3.0 mm thick	3	0.01
	1MHz			≤3.0 mm thick		--
Insulation Resistance after Immersion in Water	1MHz	6.2	IEC 167	All	4	100,000 MΩ
Comparative Tracking Index (CTI)		6.4	IEC 112	≥3.0 mm thick	1	500 V
Electrical Properties						
Temperature (Thermal Endurance) Index @ 20,000 hours		7.1	IEC 216	≥3.0 mm thick	-	130°C (266°F)
Flammability			IEC 707	5.0 mm thick	-	--
Density		8.1	IEC 1183-A	All	1	1.35 g/cm ³
Water Absorption		8.2	IEC 62-1	50x50x3 mm	4	0.20 % by wgt.

- Conditioning:
- 1: 24h @ 23°C & 50%RH
 - 2: 24h @ 23°C & 50%RH + 1hr in oil at 90°C
 - 3: 96h @ 105°C + 1hr @ 23°C & 20%RH
 - 4: 24h @ 50°C + 24hr in water at 23°C
 - 5: 96h @ 105°C + 1hr in oil at 90°C

All information and suggestions pertaining to the properties and uses of the materials described herein are based upon tests and data believed to be accurate; however, the final determination regarding the suitability of any material for such use is the sole responsibility of the user. No warranty is expressed or implied, including, without limitation, warrant of merchantability or fitness for a particular purpose. Under no circumstances shall Franklin Fibre - Lamitex Corp. be liable for incidental or consequential loss or damage.