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Lamitex® G11 Tube Technical Data

FR-5 convolute wrapped tubes are constructed of a self-extinguishing halogen free epoxy resin with a woven glass fabric reinforcement with excellent resistance to chemicals and retention of electrical properties in high humidity environments. FR-5 tubes are a low smoke and toxicity composite that meets Railway applications EN 45545-2;R22, R23 & R24: Classification HL3. It also meets or exceeds NEMA FR-5 and Mil-I-24768/28 specifications.

<u>Mechanical Properties</u>	<u>Standard</u>	<u>Test Specimen</u>	<u>Conditioning</u>		<u>Values</u>
			<u>IEC 212</u>		
Flexural Strength	ISO 178	id>100 mm	1		400 Mpa
Compressive Strength, Axial	ISO 604		1		250 MPa
Tensile Strength, Axial	ISO527				280 MPa
Cohesion between layers	EN 61212-2	id<100 mm	1		480 MPa
 <u>Electrical Properties</u>					
Electric Strength in oil @ 90C:					
Perpendicular to Laminations	IEC 243-1	3 mm wall thk	2		11.0 kV/mm
Parallel to Laminations	IEC 243-1	>3 mm wall thk id>8mm and or od>10mm	2		60 kV/25 mm
Insulation resistance after immersion in water	IEC 167		4		10,000 M ohm
Permittivity:	50Hz		3		4.5
	1 MHz		3		4.5
Dissipation Factor:	50Hz		3		0.01
	1 MHz		3		0.01
 <u>Physical and Thermal Properties</u>					
Thermal endurance index @ 20,000 hrs	IEC 216		-		180°C T.I.
Density	IEC 1183-A	All	1		1.9 g/cm ³
Water Absorption (maximum)	ASTM D229		4		0.15%

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

All values are average test results from extensive testing of typical production material. No warranty is implied or guaranteed and testing is recommended for each application.

Composite Tubes • Bearings • Molded Shapes • Rotary Vanes • Fabricated Parts • Vulcanized Fibre • High Temp Insulation

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