



# FRANKLIN

**PLASTICS & NON-METALLICS  
FOR INDUSTRY SINCE 1921**

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## Lamitex® XX Tube Technical Data

Lamitex® XX paper phenolic convolute wrapped tubes are a mechanical grade composite with good electrical properties in moderate humidity conditions. It is frequently used in transformer designs, as winding tubes in the metal foil industries and as carrier tubes for polishing brushes.

<u>Mechanical Properties</u>	<u>Test Method:</u>			<u>Conditioning</u>	
	<u>EN 61212-2</u>	<u>Standard</u>	<u>Test Specimen</u>	<u>IEC 212</u>	<u>Values</u>
Flexural Strength	4.1	ISO 178	id>100 mm	1	120 Mpa
Compressive Strength, Axial	4.2	ISO 604		1	140 MPa
Cohesion between layers	4.3	EN 61212-2	id<100 mm	1	160 MPa
 <u>Electrical Properties</u>					
Electric Strength in oil @ 90°C:					
Perpendicular to Laminations	5.1	IEC 243-1	3 mm wall thk	2	8.3 kV/mm
Parallel to Laminations	5.1	IEC 243-1	>3 mm wall thk	2	25 kV/25 mm
Insulation resistance after immersion in water		IEC 167	id>8mm and or od>10mm		10 M ohm
Permittivity 50 Hz	5.2			4	
Dissipation Factor 50 Hz	5.3	IEC 250		3	5.0
	5.3	IEC 250		3	0.04
 <u>Physical and Thermal Properties</u>					
Thermal endurance index @ 20,000 hrs	6.0	IEC 216		-	120°C T.I.
Density	7.2	IEC 1183-A	All	1	1.15 g/cm <sup>3</sup>
Water Absorption	7.1	IEC 62-1		4	4.5 mg/cm <sup>2</sup>

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

The standard mm length(s) for inside diameters 3 - 8.4 mm is 1500, 8.5 -10 mm is 1350, IDs >10 to 100 mm is 1350, 1500, or 1650 and >100 - 1250 mm is 1220, 1350, or 1650 mm.

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

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