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## RCS XX Tubes

RCS XX paper phenolic convolute wrapped tubes are a mechanical grade composite with good electrical properties in moderate humidity conditions. It is frequently used in rocket motor liners and other applications.

<u>Mechanical Properties</u>	<u>Standard</u>	<u>Test Specimen</u>	<u>Values</u>	
Flexural Strength	ISO 178	id>100 mm	130 MPa / 18,850 psi	*1
Compressive Strength, Axial	ISO 604		140 MPa / 20,300 psi	*1
Cohesion between layers	EN 61212-2 5.3	id<100 mm	160 MPa / 23,200 psi	*1
 <u>Electrical Properties</u>				
Electric Strength in oil @ 90°C:				
Perpendicular to Laminations	IEC 243-1	3 mm wall thk	8.3 kV/mm - 210 Vpm	*2
Parallel to Laminations	IEC 243-1	≥3 mm wall thk	25 kV/25 mm - 25.4 kV/in	*2
Insulation resistance after immersion in water	IEC 167	id>8mm and or od>10mm	10 MΩ	*4
Permittivity 50 Hz	IEC 250		5.0	*3
Dissipation Factor 50 Hz	IEC 250		0.040	*3
 <u>Physical and Thermal Properties</u>				
Temperature index @ 20,000 hrs (T.I)	IEC 20621	≥3 mm	120°C	
Density	IEC 1183-A	All	1.25 g/cm <sup>3</sup>	*1
Water Absorption	IEC 62-1		4.5 mg/cm <sup>2</sup>	*4

Standards: NEMA LI-1                      Grade XX  
Mil-I-24768                                  / 11 Type PBG  
EN 61212-3-1:                                PF CP 23  
Din 7735                                        Hgw 2065

Conditioning IEC 212:  
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 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 RCS Rocket Motor Components, Inc. be liable for incidental or consequential loss or damage.*