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ELECTRICAL INSULATION MATERIALS
SINCE 1921

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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 X Paper Phenolic Laminate Sheet

Description: Lamitex® X paper/phenolic laminated sheet is primarily intended for mechanical applications. It has high relative mechanical properties but low electrical characteristics when compared to XX and XXX type materials. Special precautions must be taken to prevent cracking if the material is to be tapped or machined parallel to the laminations. Grade X laminate is frequently specified for use as mounting blocks or panels, washers and spacers.

Standards: NEMA LI-1 Grade X
MIL-I-24768 / 12 - PBM
EN 60893 PF CP 201

Availability: Grade X is also manufactured as round tubes (convolute wound), molded channel, angle, square and rectangular tubes and fabricated custom parts.

Physical Properties	Test Condition	ASTM	Typical Values
Thickness			.125"
Specific Gravity		D792	1.36
Rockwell Hardness (M Scale)		D785	110
Moisture Absorption (maximum)	D 24/23	D229	3.30 %
Flexural Strength	Condition A: Lengthwise Crosswise	D229	25,000 psi 22,000 psi
Tensile Strength	Condition A: Lengthwise Crosswise	D638	16,000 psi 13,000 psi
Compressive Strength	Condition A: Flatwise Edgewise	D695	36,000 psi 19,000 psi
Izod Impact Strength (.500" thick)	E48/50: Lengthwise Crosswise	D256	0.50 ft-lb/in.(notch) 0.40 ft-lb/in.(notch)
Bond Strength (.500" thick)	Condition A D 48/50	D229	700 lbs 400 lbs
Thermal & Electrical Properties			
Temperature Index Electrical / Mechanical			130° C / 130° C
Coefficient of Thermal Expansion			20.0 cm/cm/°C/ x 10 ⁻⁶
U.L.® 94 Flammability Rating			94-HB
Dielectric Breakdown Voltage (step x step)	Condition A / D 48/50	D229	23.0 kV / 5.0 kV
Maximum Permittivity @ 1 MHz	Condition A / D 24/23	D229	5.50 / 6.00
Maximum Dissipation @ 1 MHz	Condition A / D 24/23	D229	0.045 / 0.050
Electrical Strength (short time) perpendicular to laminations	Condition A	D229	500 Vpm
Electrical Strength (step x step) perpendicular to laminations	Condition A	D229	360 Vpm
Comparative Tracking Index (CTI)	Pt electrodes	D 3638	239

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