



MANUFACTURERS OF
ELECTRICAL INSULATION MATERIALS
 INSULATING COMPONENTS FOR
 POWER SYSTEMS EQUIPMENT

The Gund Company, Inc
 St. Louis, Missouri – USA
 TEL - 314.423.5200
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MATERIAL DATA SHEET

Item: Paper Phenolic Laminate, NEMA Grade XX

Description: NEMA Grade XX Paper Phenolic provide good electrical properties such as high dielectric strength and arc resistance. Laminates and tubing are used in switchgear and transformers as switchboards, panel boards, and insulating washers and bushings.

Standards: NEMA LI-1 Grade XX
 IEC 60893 PF CP 203
 MIL-I-24768 /11 - PBG

Availability:	Laminate Sheets:	Thickness:	English Units	SI Units
			.008" to 4.0"	0.2 mm – 101.6 mm
		Sheet Sizes:	36" x 48", 39" x 48" 36" x 72", 48" x 48" 48" x 96"	91.4cm x 122cm, 99cm x 122cm 91.4cm x 182.8, 122cm x 122cm 122cm x 243.8cm

Convolute Tubing: Available in an infinity of inner diameter / outer diameter combinations per customer requirements. Additional technical data on tubing available upon request.

Fabricated Parts: The Gund Company custom fabricates insulation materials to the exact specifications and drawings of our customers.

Key Characteristics:	Test Method	Units - English (SI)	Typical Values
Standard Color			Natural/Black
Rockwell Hardness (.062")		M Scale	95
Moisture Absorption (.062")	ASTM D570	%	2.0
Tensile Strength (.125") LW CW	ASTM D638	psi (MPa)	13,500 (93) 11,500 (79.2)
Compressive Strength flatwise (.500")	ASTM D695	psi (MPa)	25,000 (172.25)
Flexural Strength (.062") (Lengthwise)	ASTM D790	psi (MPa)	22,000 (151.6)
(Crosswise)			17,000 (117.13)
Shear Strength (perpendicular) (.062")	ASTM D732	psi (MPa)	11,500 (79.23)
Impact Strength IZOD LW CW	ASTM D256	ft-lbs/in notched	.50 .40
Permittivity (.062") Condition – D- 24/23			6.2
Bond Strength (.500")	ASTM D229	Lb (kg)	900 (409)

All of the information, suggestions, and recommendations pertaining to the properties and uses of the products herein are based upon tests and data believed to be accurate; however, the final determination regarding the suitability of any material described herein for the use contemplated, the manner of such use, and whether the use infringes any patents is the sole responsibility of the user. There is no warranty, expressed or implied, including, without limitation, warranty of merchantability or fitness for a particular purpose. Under no circumstances shall we be liable for incidental or consequential loss or damage.



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Maximum Operating Temperature	Multiple ASTM	°C	130
Flammability Rating –U.L.94		Class	HB
Breakdown Voltage Condition A (.062") D-48/50	ASTM D149	kV	40.0 5.0
Dissipation Factor (.062")	Condition D- 24/23		.052

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