



MANUFACTURERS OF
ELECTRICAL INSULATION MATERIALS
 INSULATING COMPONENTS FOR
 POWER SYSTEMS EQUIPMENT

The Gund Company, Inc
 St. Louis, Missouri – USA
 TEL - 314.423.5200
 FAX - 314.423.9009

MATERIAL DATA SHEET

Item: NEMA Grade G-10 Glass Epoxy Laminates

Description: NEMA Grade G10 materials are continuous filament woven fiberglass sheets bonded with epoxy resin. The material has the ability to maintain excellent mechanical, electrical, and physical properties at elevated temperature to 130C. NEMA G-10 is a non-brominated, non-flame retardant grade of glass epoxy laminate.

Note that much of the industry refers to “G-10” material when they want a flame retardant, V-0 rated glass epoxy laminate rated at 130C RTI such as NEMA FR4. Technically, NEMA G-10 is a non-flame retardant, non-brominated version of glass epoxy laminate. If a non-brominated material is required, please specifically address this issue.

Standards: NEMA LI-1 Grade G-10
 IEC 60893 EP GC 201
 MIL-I-24768 /27 GEE

Availability:

Laminate Sheets:	Thickness:	English Units .006" - 5.0"	SI Units 0.1524mm - 127mm
	Sheet Sizes:	36" x 48", 39" x 48", 36" x 72", 48" x 48"	91.4cm x 122cm, 99cm x 122cm 91.4cm x 182.8cm, 122cm x 122cm
		48" x 96", 48" x 108"	122cm x 243.8cm, 122cm x 274.3cm

Convolute Tubing: Available in an infinity of inner diameter / outer diameter combinations per customer requirements.

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
Specific Gravity		Lbs/in ³ (g/cc)	0.064 (1.77)
Rockwell Hardness (0.500")		M Scale	99
Moisture Absorption (.062")	ASTM D570	%	0.22
Tensile Strength (.125") LW CW	ASTM D638	psi (MPa)	43,000 (296) 39,000 (269)
Compressive Strength flatwise (.500")	ASTM D695	psi (MPa)	44,000 (303)
Flexural Strength (.062") LW CW	ASTM D790	psi (MPa)	66,000 (455) 60,000 (413)
Flexural Modulus (.062") LW CW	ASTM D790	ksi (MPa)	3,400 (23,442) 3,300 (22,753)
Shear Strength (perpendicular) (.062")	ASTM D732	psi (MPa)	19,000 (130)
Impact Strength IZOD E-48/50 LW CW	ASTM D256	ft-lbs/in notched	9.5 7.5
Coefficient of Thermal Expansion, X-axis Y-axis		" / °C x 10 ⁻⁶	12.1 9.6
Bonding Strength (.500")	ASTM D229	lb (kg)	2,500 (1134)



MANUFACTURERS OF
ELECTRICAL INSULATION MATERIALS
INSULATING COMPONENTS FOR
POWER SYSTEMS EQUIPMENT

The Gund Company, Inc
St. Louis, Missouri – USA
TEL - 314.423.5200
FAX - 314.423.9009

Temperature Index (electrical/mechanical)		°C	130/140
Flammability Rating	UL 94	Class	HB
Breakdown Voltage (.062") Condition A D-48/50	ASTM D149	kV	48 49
Dielectric Strength (.062") Condition A D-48/50	ASTM D149	V/mil	960 1,000
T _g		°C	128

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.