



MANUFACTURERS OF
ELECTRICAL INSULATION MATERIALS

INSULATING COMPONENTS FOR
POWER SYSTEMS EQUIPMENT

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MATERIAL DATA SHEET

Item: NEMA Grade GPO-1, Grade N180 Glass Polyester Laminate

Description: Grade N180 is a Class H (180°C) glass mat reinforced polyester material designed for applications where high compressive and flexural strength are combined with high temperature resistance.

Grade N180 has been designed for applications including electric motor slot topsticks, D.C. motor pole collars, hydro generator pole collars, rotating equipment slot filler, rotor pole blocking, lead and cable clamps, and related applications.

Standards: NEMA LI-1 GPO-1
IEC 60893 UPGM 201

Availability: Laminate Sheets: Thickness: English Units 0.031" to 2.0" SI Units 0.8 mm to 50.8 mm
Sheet Sizes: 37" x 73" 94 cm x 185 cm

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	--	--	Black
Density	--	lbs./in (g/cc)	0.069 (1.91)
Water Absorption (.125")	ASTM D-570	%	0.25
Tensile Strength	ASTM D-638	psi (MPa)	16,000 (110)
Compressive Strength, Flatwise	ASTM D-695	psi (MPa)	50,000 (345)
Flexural Strength, Lengthwise Crosswise	ASTM D-790	psi (MPa)	29,000 (200) 32,000 (221)
Bond Strength (.50")	ASTM D-229	lbs. (kg)	
Shear Strength	ASTM D-732	psi (MPa)	18,000 (124)
Izod Impact Strength, Edgewise	ASTM D-256	ft.-lbs./in.	12
Arc Resistance	ASTM D-495	Seconds	180 ¹
Dielectric Strength, Perp., In Oil (.0625")	ASTM D-149	V/mil (kV/mm)	450 (17.7)
Breakdown Voltage, Parallel Pin, In Oil	ASTM D-149	kV	45
Thermal Class	--	--	Class H - 180°C

¹ Only grade N180BR meets this value; standard grades are 135