



THE GUND COMPANY

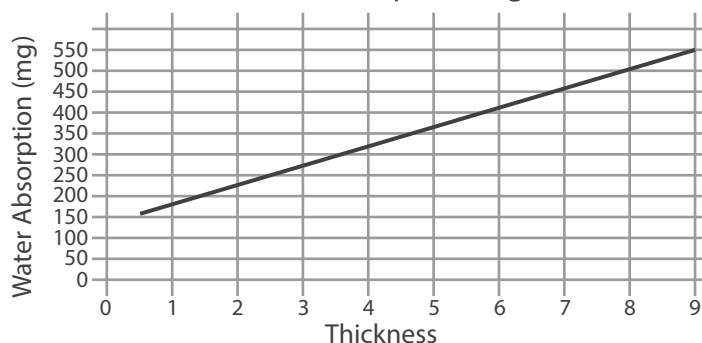
Manufacturers & fabricators of engineered material solutions

Item:	HP1 & HP2, Low Power Factor Paper Phenolic		
Description:	HP1 & HP2 are manufactured as high pressure paper based laminates with a kraft paper substrate and special phenolic resin and an extremely low incidence of internal voids. Due to its excellent dielectric and low power factor properties, it is recommended for use in high voltage applications; such as oil filled transformers as tap changer boards and terminal boards.		
Standards:	NEMA LI-1: Grade X, XX, & XXX IEC 60893: PF CP 201 & 203	MIL-I-24768: / 12-PBM, /11-PBG, /10-PBE DIN 7734: HP 2061.5 (HP1), HP 2064 (HP2)	
Availability:	Laminate Sheets:	Sheet Size:	English Units (in): 84 x 49 and 42 x 49 SI Units (cm): 214 cm x 124 cm and 107 cm x 124 cm
		Thickness:	0.125" to 2.0" / 0.3 mm to 50 mm
	Fabricated Parts:	The Gund Company custom fabricates insulation materials to the exact specifications and drawings of our customers.	

PF CP 202

Key Characteristics	Test Method	Units	Typical Values	
Flexural Strength	ISO 178	MPa	190	
Electric Strength, oil \perp	ISO 243	kV/mm	16.7	
Breakdown Voltage Oil 90°C \parallel	HP1	ISO 243	kV	45
	HP2			75

Limits for Water Absorption (mg) ISO 62



Additional Engineering Data

Key Characteristics	Test Method	Units	Typical Values
Density	ASTM D-634	g/cm ³	1.51
Flexural Strength	ASTM D-790	ksi (MPa)	LW: 33 (228)
			CW: 23 (159)
Compressive Strength	ASTM D-604	ksi (MPa)	45 (310)
Tensile Strength	ASTM D-527	ksi (MPa)	21 (145)
IZOD Impact Strength	ASTM D-229	ft-lb/in	2.00
Dissipation Factor (@ 60Hz)	ASTM D-150	%	3.5
Dielectric Strength	ASTM D-790	V/mil	680
Water Absorption	ASTM D-570	%	1.70
Bond Strength	ASTM D-229	lbs	950