

Industrial Laminates/Norplex NP130HF Glass Fabric

Category : Polymer , Thermoset

Material Notes:

Description: High flexural, impact and tensile strength glass fabric epoxy laminate, especially in the machine direction. Engineered to provide better physical properties than NEMA FR-4. More dimensionally stable than standard NP510A. Application is for "bed-of-nails" equipment for printed circuit board testing. MIL-I-24768/27, type GEE-F. Thickness Tested: 0.062", 0.125", & 0.500".

Order this product through the following link:

http://www.lookpolymers.com/polymer_Industrial-LaminatesNorplex-NP130HF-Glass-Fabric.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.90 - 2.00 g/cc	1.90 - 2.00 g/cc	ASTM D792
	@Thickness 1.57 mm	@Thickness 0.0620 in	
Moisture Absorption at Equilibrium	0.13 %	0.13 %	ASTM D229
	@Thickness 1.57 mm	@Thickness 0.0620 in	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	90 - 110	90 - 110	ASTM D785
	@Thickness 1.57 mm	@Thickness 0.0620 in	
Tensile Strength, Yield	365 MPa	53000 psi	CW; ASTM D638
	@Thickness 1.57 mm	@Thickness 0.0620 in	
	448 MPa	65000 psi	LW; ASTM D638
	@Thickness 1.57 mm	@Thickness 0.0620 in	
Modulus of Elasticity	20.7 GPa	3000 ksi	CW; ASTM D229
	@Thickness 1.57 mm	@Thickness 0.0620 in	
	25.5 GPa	3700 ksi	LW; ASTM D229
	@Thickness 1.57 mm	@Thickness 0.0620 in	
Flexural Strength	483 MPa	70000 psi	CW; ASTM D790
	@Thickness 1.57 mm	@Thickness 0.0620 in	
	586 MPa	85000 psi	LW; ASTM D790
	@Thickness 1.57 mm	@Thickness 0.0620 in	
Compressive Strength	496 MPa	72000 psi	ASTM D695
	@Thickness 12.7 mm	@Thickness 0.500 in	
	159 MPa	23000 psi	

Shear Strength Mechanical Properties	Metric @Thickness 15.7 mm	English @Thickness 0.620 in	ASTM D732 Comments
Izod Impact, Unnotched	4.81 J/cm @Thickness 12.7 mm	9.00 ft-lb/in @Thickness 0.500 in	CW, Cond E-48/50; ASTM D256
	6.94 J/cm @Thickness 12.7 mm	13.0 ft-lb/in @Thickness 0.500 in	LW, Cond E-48/50; ASTM D256

Thermal Properties	Metric	English	Comments
CTE, linear	14.7 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$ @Thickness 1.57 mm, Temperature 20.0 $\text{Å}^\circ\text{C}$	8.17 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$ @Thickness 0.0620 in, Temperature 68.0 $\text{Å}^\circ\text{F}$	x-axis; IPC-TM 650-2.4.24
CTE, linear, Transverse to Flow	13.7 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$ @Thickness 1.57 mm, Temperature 20.0 $\text{Å}^\circ\text{C}$	7.61 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$ @Thickness 0.0620 in, Temperature 68.0 $\text{Å}^\circ\text{F}$	x-axis; IPC-TM 650-2.4.24
Maximum Service Temperature, Air	130 $\text{Å}^\circ\text{C}$	266 $\text{Å}^\circ\text{F}$	
Glass Transition Temp, Tg	130 $\text{Å}^\circ\text{C}$	266 $\text{Å}^\circ\text{F}$	Tg
Flammability, UL94	V-0 @Thickness 1.57 mm	V-0 @Thickness 0.0620 in	

Electrical Properties	Metric	English	Comments
Dielectric Constant	4.8 @Thickness 1.57 mm	4.8 @Thickness 0.0620 in	Permittivity, Cond D-24/23; ASTM D150
Dielectric Strength	27.6 kV/mm @Thickness 1.57 mm	700 kV/in @Thickness 0.0620 in	Cond D-48/50; ASTM D229 S.T.
	35.4 kV/mm @Thickness 1.57 mm	900 kV/in @Thickness 0.0620 in	Cond A; ASTM D229 S.T.
Dielectric Breakdown	60000 V @Thickness 1.57 mm	60000 V @Thickness 0.0620 in	Cond D-48/50; ASTM D229 S/S
	63000 V @Thickness 1.57 mm	63000 V @Thickness 0.0620 in	Cond A; ASTM D229 S/S
Dissipation Factor	0.022 @Thickness 1.57 mm	0.022 @Thickness 0.0620 in	Cond D-24/23; ASTM D150
Arc Resistance	75 sec	75 sec	ASTM D495

Electrical Properties	@Thickness 3.17 mm Metric	@Thickness 0.125 in English	Comments
Descriptive Properties	Value		Comments
Bond Strength	2500 lb		0.5", ASTM D229
Color	Natural		

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