

## Industrial Laminates/Norplex NP322 Cotton Fabric

Category : Polymer , Thermoset , Phenolic

### Material Notes:

Description: Linen phenolic laminate with molybdenum disulfide. Provides the same lubricity as NP313, but has better machining qualities.

Mechanical strength similar to, but slightly less than NP320. Thickness Tested: 0.062", 0.125" and 0.500".

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Industrial-LaminatesNorplex-NP322-Cotton-Fabric.php](http://www.lookpolymers.com/polymer_Industrial-LaminatesNorplex-NP322-Cotton-Fabric.php)

Physical Properties	Metric	English	Comments
Specific Gravity	1.35 - 1.45 g/cc	1.35 - 1.45 g/cc	ASTM D792
	@Thickness 1.57 mm	@Thickness 0.0620 in	
Moisture Absorption at Equilibrium	2.4 %	2.4 %	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	66.9 MPa	9700 psi	CW; ASTM D638
	@Thickness 1.57 mm	@Thickness 0.0620 in	
	96.5 MPa	14000 psi	LW; ASTM D638
	@Thickness 1.57 mm	@Thickness 0.0620 in	
Modulus of Elasticity	7.58 GPa	1100 ksi	CW; ASTM D229
	@Thickness 1.57 mm	@Thickness 0.0620 in	
	10.3 GPa	1500 ksi	LW; ASTM D229
	@Thickness 1.57 mm	@Thickness 0.0620 in	
Flexural Strength	124 MPa	18000 psi	CW; ASTM D790
	@Thickness 1.57 mm	@Thickness 0.0620 in	
	164 MPa	23800 psi	LW; ASTM D790
	@Thickness 1.57 mm	@Thickness 0.0620 in	
Compressive Strength	269 MPa	39000 psi	ASTM D695
	@Thickness 12.7 mm	@Thickness 0.500 in	
Shear Strength	100 MPa	14500 psi	ASTM D732
	@Thickness 15.7 mm	@Thickness 0.620 in	

Mechanical Properties	Metric J/cm	English lb/in	Comments
Izod Impact, Unnotched	@Thickness 12.7 mm	@Thickness 0.500 in	CW, Cond E-48/50; ASTM D256
	0.854 J/cm @Thickness 12.7 mm	1.60 ft-lb/in @Thickness 0.500 in	LW, Cond E-48/50; ASTM D256

Thermal Properties	Metric	English	Comments
CTE, linear	10.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	5.56 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	x-axis; IPC-TM 650-2.4.24
	@Thickness 1.57 mm, Temperature 20.0 $\text{Å}^\circ\text{C}$	@Thickness 0.0620 in, Temperature 68.0 $\text{Å}^\circ\text{F}$	
CTE, linear, Transverse to Flow	12.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	6.67 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	x-axis; IPC-TM 650-2.4.24
	@Thickness 1.57 mm, Temperature 20.0 $\text{Å}^\circ\text{C}$	@Thickness 0.0620 in, Temperature 68.0 $\text{Å}^\circ\text{F}$	
Maximum Service Temperature, Air	130 $\text{Å}^\circ\text{C}$	266 $\text{Å}^\circ\text{F}$	
Flammability, UL94	HB	HB	
	@Thickness 1.57 mm	@Thickness 0.0620 in	

Electrical Properties	Metric	English	Comments
Dielectric Breakdown	5000 V	5000 V	Cond D-48/50; ASTM D229 S/S
	@Thickness 1.57 mm	@Thickness 0.0620 in	
	30000 V	30000 V	Cond A; ASTM D229 S/S
	@Thickness 1.57 mm	@Thickness 0.0620 in	

Descriptive Properties	Value	Comments
Bond Strength	1900 lb	0.5", ASTM D229
Color	Black	

## Contact Songhan Plastic Technology Co.,Ltd.

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