

## Industrial Laminates/Norplex NP510A Glass Fabric

Category : Polymer , Thermoset

### Material Notes:

Description: Woven glass fabric epoxy laminate. Engineered to provide NEMA grade FR-4 properties. This material contains bromine on the epoxy resin backbone. Certifiable to MIL-I-24768/27, Type GEE-FTthickness Tested: 0.062" ,0.125", & 0.500"

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Industrial-LaminatesNorplex-NP510A-Glass-Fabric.php](http://www.lookpolymers.com/polymer_Industrial-LaminatesNorplex-NP510A-Glass-Fabric.php)

Physical Properties	Metric	English	Comments
Specific Gravity	1.80 - 1.90 g/cc	1.80 - 1.90 g/cc	ASTM D792
	@Thickness 1.57 mm	@Thickness 0.0620 in	
Moisture Absorption at Equilibrium	0.10 %	0.10 %	ASTM D229
	@Thickness 1.57 mm	@Thickness 0.0620 in	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	105 - 125	105 - 125	ASTM D785
	@Thickness 1.57 mm	@Thickness 0.0620 in	
Tensile Strength, Yield	221 MPa	32000 psi	CW; ASTM D638
	@Thickness 1.57 mm	@Thickness 0.0620 in	
	276 MPa	40000 psi	LW; ASTM D638
	@Thickness 1.57 mm	@Thickness 0.0620 in	
Modulus of Elasticity	17.9 GPa	2600 ksi	CW; ASTM D229
	@Thickness 1.57 mm	@Thickness 0.0620 in	
	20.0 GPa	2900 ksi	LW; ASTM D229
	@Thickness 1.57 mm	@Thickness 0.0620 in	
Flexural Strength	359 MPa	52000 psi	CW; ASTM D790
	@Thickness 1.57 mm	@Thickness 0.0620 in	
	448 MPa	65000 psi	LW; ASTM D790
	@Thickness 1.57 mm	@Thickness 0.0620 in	
Compressive Strength	455 MPa	66000 psi	ASTM D695
	@Thickness 12.7 mm	@Thickness 0.500 in	
Shear Strength	148 MPa	21500 psi	ASTM D732
	@Thickness 15.7 mm	@Thickness 0.620 in	

Mechanical Properties	Metric <sub>cm</sub>	English <sub>lb/in</sub>	Comments
Izod Impact, Unnotched	@Thickness 12.7 mm	@Thickness 0.500 in	CW, Cond E-48/50; ASTM D256
	4.22 J/cm @Thickness 12.7 mm	7.90 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	13.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	7.22 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	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	140 $\text{Å}^\circ\text{C}$	284 $\text{Å}^\circ\text{F}$	
Glass Transition Temp, Tg	130 $\text{Å}^\circ\text{C}$	266 $\text{Å}^\circ\text{F}$	Tg
Flammability, UL94	V-0	V-0	
	@Thickness 1.57 mm	@Thickness 0.0620 in	

Electrical Properties	Metric	English	Comments
Dielectric Constant	4.8	4.8	Permittivity, Cond D-24/23; ASTM D150
	@Thickness 1.57 mm	@Thickness 0.0620 in	
Dielectric Strength	29.5 kV/mm	750 kV/in	Cond D-48/50; ASTM D229 S.T.
	@Thickness 1.57 mm	@Thickness 0.0620 in	
Dielectric Breakdown	31.5 kV/mm	800 kV/in	Cond A; ASTM D229 S.T.
	@Thickness 1.57 mm	@Thickness 0.0620 in	
Dielectric Breakdown	65000 V	65000 V	Cond D-48/50; ASTM D229 S/S
	@Thickness 1.57 mm	@Thickness 0.0620 in	
Dielectric Breakdown	66000 V	66000 V	Cond A; ASTM D229 S/S
	@Thickness 1.57 mm	@Thickness 0.0620 in	
Dissipation Factor	0.032	0.032	Cond D-24/23; ASTM D150
	@Thickness 1.57 mm	@Thickness 0.0620 in	
Arc Resistance	130 sec	130 sec	ASTM D495
	@Thickness 3.17 mm	@Thickness 0.125 in	
	300 V	300 V	

Comparative Tracking Index		Metric		English		ASTM D3638	
Electrical Properties		@ Thickness 3.17 mm		@ Thickness 0.125 in		Comments	
Descriptive Properties		Value		Comments			
Bond Strength		2300 lb		0.5", ASTM D229			
Color		Natural, Black					

## Contact Songhan Plastic Technology Co.,Ltd.

Website : [www.lookpolymers.com](http://www.lookpolymers.com)

Email : [sales@lookpolymers.com](mailto:sales@lookpolymers.com)

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China