

Industrial Laminates/Norplex NP319 Cotton Fabric Base Laminate

Category : Polymer , Thermoset , Phenolic

Material Notes:

Description: Bleached canvas combined with phenolic resin and graphite lubricant. Better moisture resistance and machining characteristics than NP315.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Industrial-LaminatesNorplex-NP319-Cotton-Fabric-Base-Laminate.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 | 2.5 % | 2.5 % | 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 | 62.1 MPa | 9000 psi | CW; ASTM D638 |
| | @Thickness 1.57 mm | @Thickness 0.0620 in | |
| | 75.8 MPa | 11000 psi | LW; ASTM D638 |
| | @Thickness 1.57 mm | @Thickness 0.0620 in | |
| Modulus of Elasticity | 6.89 GPa | 1000 ksi | CW; ASTM D229 |
| | @Thickness 1.57 mm | @Thickness 0.0620 in | |
| | 8.96 GPa | 1300 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 | |
| | 138 MPa | 20000 psi | LW; ASTM D790 |
| | @Thickness 1.57 mm | @Thickness 0.0620 in | |
| Compressive Strength | 248 MPa | 36000 psi | ASTM D695 |
| | @Thickness 12.7 mm | @Thickness 0.500 in | |
| Shear Strength | 89.6 MPa | 13000 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 |
| | 1.07 J/cm | 2.00 ft-lb/in | LW, Cond E-48/50; ASTM D256 |
| | @Thickness 12.7 mm | @Thickness 0.500 in | |

| Thermal Properties | Metric | English | Comments |
|----------------------------------|--|--|---------------------------|
| CTE, linear | 18.0 $\mu m/m-^{\circ}C$ | 10.0 $\mu in/in-^{\circ}F$ | x-axis; IPC-TM 650-2.4.24 |
| | @Thickness 1.57 mm, Temperature 20.0 $^{\circ}C$ | @Thickness 0.0620 in, Temperature 68.0 $^{\circ}F$ | |
| CTE, linear, Transverse to Flow | 22.0 $\mu m/m-^{\circ}C$ | 12.2 $\mu in/in-^{\circ}F$ | x-axis; IPC-TM 650-2.4.24 |
| | @Thickness 1.57 mm, Temperature 20.0 $^{\circ}C$ | @Thickness 0.0620 in, Temperature 68.0 $^{\circ}F$ | |
| Maximum Service Temperature, Air | 150 $^{\circ}C$ | 302 $^{\circ}F$ | |
| Flammability, UL94 | HB | HB | |
| | @Thickness 1.57 mm | @Thickness 0.0620 in | |

| Descriptive Properties | Value | Comments |
|------------------------|----------------|-----------------|
| Bond Strength | 1700 lb | 0.5", ASTM D229 |
| Color | Natural, Black | |

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