Azdel Plus U421-B01 42% Directionalized Continuous Fiber Mat / PP Resin Matrix

Category : Polymer , Thermoplastic , Polypropylene (PP)

Material Notes:

AZDEL® U421-B01 is a glass mat thermoplastic laminate based upon a combination of random oriented continuous fiber mat and oriented fiber mat contained within a polypropylene resin matrix. This composite material exhibits highly oriented material properties in the longitudinal direction of the oriented glass fibers. This material is typically used in semi-structural applications where high material properties in one direction are desired, such as automotive bumper beams.Mechanical properties and mold shrinkage measured on flat plaques.Information provided by Azdel.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Azdel-Plus-U421-B01-42-Directionalized-Continuous-Fiber-Mat-PP-Resin-Matrix.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.21 g/cc	1.21 g/cc	Laminate; ASTM D792
	1.24 g/cc	1.24 g/cc	Molded; ASTM D792
Filler Content	42 %	42 %	By weight (ashing); Internal
Thickness	3900 microns	154 mil	Sheet; Internal
Linear Mold Shrinkage	0.0010 - 0.0030 cm/cm	0.0010 - 0.0030 in/in	Measured on flat plaques; ASTM D955

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	60.0 MPa	8700 psi	Transverse direction; ISO 527
	276 MPa	40000 psi	Longitudinal direction; ISO 527
Elongation at Break	2.3 %	2.3 %	Transverse direction; ISO 527
	2.5 %	2.5 %	Longitudinal direction; ISO 527
Tensile Modulus	5.31 GPa	770 ksi	Transverse direction; ISO 527
	10.1 GPa	1460 ksi	Longitudinal direction; ISO 527
Flexural Strength	145 MPa	21000 psi	Transverse direction; ISO 178
	260 MPa	37700 psi	Longitudinal direction; ISO 178
Flexural Modulus	4.80 GPa	696 ksi	Transverse direction; ISO 178
	7.69 GPa	1120 ksi	Longitudinal direction; ISO 178
Poissons Ratio	0.361	0.361	Transverse direction; ISO 527

Mechanical Properties	Metric	English	Comments
	0.377	0.377	Longitudinal direction; ISO 527
Izod Impact, Notched	7.20 J/cm @Thickness 4.00 mm, Temperature 23.0 °C	13.5 ft-lb/in @Thickness 0.157 in, Temperature 73.4 °F	transverse direction; ISO 180
	16.5 J/cm @Thickness 4.00 mm, Temperature 23.0 °C	30.9 ft-lb/in @Thickness 0.157 in, Temperature 73.4 °F	longitudinal direction; ISO 180
Impact	700 @Thickness 4.00 mm	700 @Thickness 0.157 in	Multi-axial in kg, at max. load; ASTM D3763
Impact Test	38.0 J @Thickness 4.00 mm	28.0 ft-lb @Thickness 0.157 in	Multi-axial, at max. load; ASTM D3763
	58.0 J @Thickness 4.00 mm	42.8 ft-lb @Thickness 0.157 in	Multi-axial, at failure; ASTM D3763

Thermal Properties	Metric	English	Comments
CTE, linear	37.0 µm/m-°C @Temperature -40.0 - 120 °C	20.6 µin/in-°F @Temperature -40.0 - 248 °F	longitudinal direction; ASTM E831
Deflection Temperature at 1.8 MPa (264 psi)	143 °C	289 °F	Transverse direction; ASTM D648
	158 °C	316 °F	Longitudinal direction; ASTM D648
Flame Spread	4.57 mm/min	0.180 in/min	longitudinal direction; FMVSS302
	4.57 mm/min	0.180 in/min	transverse direction; FMVSS302

Descriptive Properties	Value	Comments
Color	Black	Internal

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