Cytec Cyply® 1002 Epoxy Fiberglass Composite, Crossply

Category : Polymer , Thermoset , Epoxy

Material Notes:

CYPLY® 1002 is a cured epoxy composite material based on a unique non-woven parallel filament construction. This type of construction minimizes filament stress abrasion that can shorten fatigue life in conventional reinforced plastics. CYPLY® 1002 uses type E continuous filament fiberglass. It is supplied as cured panels or cut to size shapes. CYPLY 1002 is available in unidirectional, crossply, or isotropic fiber orientation, each offering a different balance of properties.Features and benefits include:High impact strengthchemical and corrosion resistancehigh strength-to-weight ratioexcellent fatigue life and high strain capabilitylow notch sensitivityincreased design options (springs to rail joints)resistant to solvents and cleaning fluidsless downtime in harsh environmentsweight reductiongreater capacity to store energy than 1060 spring steelInformation provided by Red Seal Electric Company.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Cytec-Cyply-1002-Epoxy-Fiberglass-Composite-Crossply.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.85 g/cc	1.85 g/cc	
Filler Content	64 %	64 %	

Mechanical Properties	Metric	English	Comments
Hardness, Barcol	70	70	
Tensile Strength, Ultimate	145 MPa	21000 psi	45° stress angle
	483 MPa	70000 psi	90° stress angle
	483 MPa	70000 psi	0° stress angle
Tensile Modulus	10.3 GPa	1500 ksi	45° stress angle
	23.4 GPa	3400 ksi	0° stress angle
	24.1 GPa	3500 ksi	90° stress angle
Flexural Strength	310 MPa	45000 psi	45° stress angle
	758 MPa	110000 psi	90° stress angle
	758 MPa	110000 psi	0° stress angle
Flexural Modulus	13.8 GPa	2000 ksi	45° stress angle
	24.1 GPa	3500 ksi	90° stress angle
	24.1 GPa	3500 ksi	0° stress angle
Compressive Strength	207 MPa	30000 psi	45° stress angle

Mechanical Properties	Metric	English	Comments
	689 MPa	100000 psi	0° stress angle
Fatigue Strength	159 MPa @# of Cycles 1.00e+8	23000 psi @# of Cycles 1.00e+8	Flexural Fatigue (SN)
	172 MPa @# of Cycles 1.00e+7	25000 psi @# of Cycles 1.00e+7	Flexural Fatigue (SN)
	214 MPa @# of Cycles 1.00e+6	31000 psi @# of Cycles 1.00e+6	Flexural Fatigue (SN)
	262 MPa @# of Cycles 100000	38000 psi @# of Cycles 100000	Flexural Fatigue (SN)
	310 MPa @# of Cycles 10000	45000 psi @# of Cycles 10000	Flexural Fatigue (SN)
	407 MPa @# of Cycles 1000	59000 psi @# of Cycles 1000	Flexural Fatigue (SN)
Shear Modulus	62.1 GPa	9000 ksi	Short Beam; 0° stress angle; span/depth 5:1; ASTM D2344-76; span/depth 5:1

Thermal Properties	Metric	English	Comments
CTE, linear	12.8 µm/m-°C @Temperature -34.4 - 93.3 °C	7.10 µin/in-°F @Temperature -30.0 - 200 °F	parallel to lengthwise filaments; ASTM D696-42T
	12.8 µm/m-°C @Temperature -34.4 - 93.3 °C	7.10 µin/in-°F @Temperature -30.0 - 200 °F	parallel to crosswise filaments; ASTM D696-42T
Specific Heat Capacity	0.879 J/g-°C	0.210 BTU/lb-°F	
Thermal Conductivity	0.334 W/m-K @Temperature 7.22 °C	2.32 BTU-in/hr-ft²-°F @Temperature 45.0 °F	on 1 inch thick isotropic laminate
	0.336 W/m-K @Temperature 2.22 °C	2.33 BTU-in/hr-ft²-°F @Temperature 36.0 °F	on 1 inch thick isotropic laminate
	0.342 W/m-K @Temperature 51.7 °C	2.37 BTU-in/hr-ft²-°F @Temperature 125 °F	on 1 inch thick isotropic laminate
	0.346 W/m-K	2.40 BTU-in/hr-ft²-°F	on 1 inch thick isotropic laminate

Thermal Properties	Metric	English	Comments
	@Temperature 85.6 °C	@Temperature 186 °F	

Electrical Properties	Metric	English	Comments
Volume Resistivity	4.90e+17 ohm-cm	4.90e+17 ohm-cm	50% RH and at 90% RH
Insulation Resistance	5.30e+15 ohm	5.30e+15 ohm	50% RH
	6.80e+10 ohm @Temperature 150 °C	6.80e+10 ohm @Temperature 302 °F	50% RH
	6.20e+11 ohm @Temperature 120 °C	6.20e+11 ohm @Temperature 248 °F	50% RH
	9.70e+12 ohm @Temperature 60.0 °C	9.70e+12 ohm @Temperature 140 °F	90% RH
	2.70e+14 ohm @Temperature 60.0 °C	2.70e+14 ohm @Temperature 140 °F	50% RH
	3.30e+14 ohm @Temperature 23.0 °C	3.30e+14 ohm @Temperature 73.4 °F	90% RH
Dielectric Constant	4.8 @Frequency 1e+6 Hz	4.8 @Frequency 1e+6 Hz	50% RH
	5.2 @Frequency 1000 Hz	5.2 @Frequency 1000 Hz	50% RH
	4.4 @Frequency 3.00e+7 Hz, Temperature 23.0 °C	4.4 @Frequency 3.00e+7 Hz, Temperature 73.4 °F	50% RH
	5.1 @Frequency 100000 Hz, Temperature 23.0 °C	5.1 @Frequency 100000 Hz, Temperature 73.4 °F	50% RH
	5.3 @Frequency 60.0 Hz, Temperature 23.0 °C	5.3 @Frequency 60.0 Hz, Temperature 73.4 °F	50% RH
	5.5 @Frequency 1.00e+6 Hz, Temperature 23.0 °C	5.5 @Frequency 1.00e+6 Hz, Temperature 73.4 °F	90% RH
	5.7	5.7	50% RH

Electrical Properties	Metric	English	Comments
	@Frequency 1000 Hz, Temperature 60.0 °C	@Frequency 1000 Hz, Temperature 140 °F	
	6.1 @Frequency 1000 Hz, Temperature 120 °C	6.1 @Frequency 1000 Hz, Temperature 248 °F	50% RH
	6.5 @Frequency 1000 Hz, Temperature 23.0 °C	6.5 @Frequency 1000 Hz, Temperature 73.4 °F	90% RH
	6.8 @Frequency 1000 Hz, Temperature 60.0 °C	6.8 @Frequency 1000 Hz, Temperature 140 °F	90% RH
	7.0 @Frequency 60.0 Hz, Temperature 23.0 °C	7.0 @Frequency 60.0 Hz, Temperature 73.4 °F	90% RH
	7.3 @Frequency 1000 Hz, Temperature 150 °C	7.3 @Frequency 1000 Hz, Temperature 302 °F	50% RH
Dielectric Strength	24.4 kV/mm	620 kV/in	50% RH
Dissipation Factor	0.0060 @Frequency 1000 Hz	0.0060 @Frequency 1000 Hz	50% RH
	0.017 @Frequency 1e+6 Hz	0.017 @Frequency 1e+6 Hz	50% RH
	0.0033 @Frequency 1000 Hz, Temperature 120 °C	0.0033 @Frequency 1000 Hz, Temperature 248 °F	50% RH
	0.0052 @Frequency 60.0 Hz, Temperature 23.0 °C	0.0052 @Frequency 60.0 Hz, Temperature 73.4 °F	50% RH
	0.0087 @Frequency 1000 Hz, Temperature 60.0 °C	0.0087 @Frequency 1000 Hz, Temperature 140 °F	50% RH
	0.014 @Frequency 100000 Hz, Temperature 23.0 °C	0.014 @Frequency 100000 Hz, Temperature 73.4 °F	50% RH
	0.019 @Frequency 1.00e+6 Hz,	0.019 @Frequency 1.00e+6 Hz,	90% RH

Electrical Properties	Temperature 23.0 °C Metric	Temperature 73.4 °F English	Comments
	0.023 @Frequency 3.00e+7 Hz, Temperature 23.0 °C	0.023 @Frequency 3.00e+7 Hz, Temperature 73.4 °F	50% RH
	0.036 @Frequency 60.0 Hz, Temperature 23.0 °C	0.036 @Frequency 60.0 Hz, Temperature 73.4 °F	90% RH
	0.050 @Frequency 1000 Hz, Temperature 23.0 °C	0.050 @Frequency 1000 Hz, Temperature 73.4 °F	90% RH
	0.054 @Frequency 1000 Hz, Temperature 60.0 °C	0.054 @Frequency 1000 Hz, Temperature 140 °F	90% RH
	0.13 @Frequency 1000 Hz, Temperature 150 °C	0.13 @Frequency 1000 Hz, Temperature 302 °F	50% RH
Arc Resistance	20 sec	20 sec	with filaments; 50% RH and at 90% RH
	80 sec	80 sec	across filaments; 50% RH and at 90% RH

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com

Email : sales@lookpolymers.com

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

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