

Hexcel® HexTOOL™ M61 Quasi-isotropic High Temperature Prepreg Tooling Compound

Category : Other Engineering Material , Polymer , Thermoset , Epoxy

Material Notes:

HexTOOL™ Tooling Compound is randomly layered strips of uni-directional prepreg which is consolidated into rolled goods. It can be utilized as multi-ply quasi-isotropic hand lay-up, and subsequently CNC milled to close tolerance. HexTOOL™ has proved to be dimensionally stable with the ability to hold vacuum integrity before and after machining, and after more than 500 part cure cycles. Fabricated from Hexcel's BMI resin HexPly® M61, HexTOOL™ tools are ideally suited for 356°F (180°C) cure carbon fiber tools. This makes them lighter weight, more energy efficient than tools made of steel or Invar®, and more cost-effective with tighter mold tolerance than standard composites. Information provided by Hexcel

Order this product through the following link:

http://www.lookpolymers.com/polymer_Hexcel-HexTOOL-M61-Quasi-isotropic-High-Temperature-Prepreg-Tooling-Compound.php

Physical Properties	Metric	English	Comments
Thickness	32.3 microns	1.27 mil	Cured Ply Thickness: HexTOOL™ M61 (2000); Based on nominal prepreg properties
	64.5 microns	2.54 mil	Cured Ply Thickness: HexTOOL™ M61 (4000); Based on nominal prepreg properties

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	210 MPa	30500 psi	Dry; EN2561
	@Temperature 180 °C	@Temperature 356 °F	
	260 MPa	37700 psi	Dry; EN2561
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Tensile Modulus	40.0 GPa	5800 ksi	Dry; EN2561
	@Temperature 180 °C	@Temperature 356 °F	
	41.0 GPa	5950 ksi	Dry; EN2561
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Flexural Strength	380 MPa	55100 psi	Dry; EN2562
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Flexural Modulus	38.0 GPa	5510 ksi	Dry; EN2562
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Compressive Strength	270 MPa	39200 psi	Dry; EN2850B
	@Temperature 180 °C	@Temperature 356 °F	

Mechanical Properties	300 MPa Metric	43500 psi English	Comments Dry; EN2850B
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Compressive Modulus	30.0 GPa	4350 ksi	Dry; EN2850B
	@Temperature 180 °C	@Temperature 356 °F	
	32.0 GPa	4640 ksi	Dry; EN2850B
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Shear Strength	43.0 MPa	6240 psi	Short Beam Shear, Dry; EN2563
	@Temperature 180 °C	@Temperature 356 °F	
	50.0 MPa	7250 psi	Short Beam Shear, Dry; EN2563
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	4.00 µm/m-°C	2.22 µin/in-°F	In Plane; ASTM E289-95
Maximum Service Temperature, Air	218 °C	424 °F	
Glass Transition Temp, Tg	275 °C	527 °F	Postcured, Dry

Processing Properties	Metric	English	Comments
Shelf Life	12.0 Month	12.0 Month	
	@Temperature -18.0 °C	@Temperature -0.400 °F	

Descriptive Properties	Value	Comments
Autoclave Work Life (Days)	20	At 21°C
Minimum Initial Cure Temperature (°C)	190	
Nominal Ply Areal Weight (g/m2)	2000	
	4000	
Nominal Resin Content (%)	38	By weight

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