CRP Technology Windform® XT Polyamide-Carbon Composite

Category : Polymer , Rapid Prototyping Polymer , Thermoplastic , Nylon , Nylon 12

Material Notes:

WindForm™ XT Composite is a new generation material, in which the mechanical characteristics are excellent for Rapid Manufacturing. Black coloured compound polyamide and carbon based material with brilliant reflexes, WindForm™ XT is characterized by stiffness and extremely high UTS, excellent surface finish, resistance to extreme wear and an optimal reproduction of detail.Class of material: Composite polyamide based powderTechnology: Selective Laser SinteringWindForm™ XT offers an alluring, black, sparkling look, appreciable in many design applications. WindForm™ XT is particularly suited to applications which require superior mechanical properties, extremely high performance, in rapid timing. Superior price.Areas of application: aerodynamic applications in the wind tunnel, on the race track and on the road, functional prototypes for case/carter, frames, definitive windscreens for motorcycle racing and on road.Information provided by CRP Technology.

Order this product through the following link:
http://www.lookpolymers.com/polymer_CRP-Technology-Windform-XT-Polyamide-Carbon-Composite.php

Physical Properties	Metric	English	Comments
Density	1.101 g/cc	0.03978 lb/in³	

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	77.85 MPa	11290 psi	UNI EN ISO 527-1(97) and UNI EN ISO 527-2(97)
Elongation at Break	2.6 %	2.6 %	UNI EN ISO 527-1(97) and UNI EN ISO 527-2(97)
Tensile Modulus	7.3208 GPa	1061.8 ksi	UNI EN ISO 527-1(97) and UNI EN ISO 527-2(97)
Flexural Strength	131.52 MPa	19075 psi	UNI EN ISO 14125: 2000
Flexural Modulus	6.2485 GPa	906.28 ksi	UNI EN ISO 14125: 2000
Charpy Impact Unnotched	3.24 J/cm²	15.4 ft-lb/in²	ASTM D256 and UNI EN ISO 179:1998
Charpy Impact, Notched	0.473 J/cm²	2.25 ft-lb/in²	ASTM D256 and UNI EN ISO 179:1998
	0.466 J/cm² @Temperature -30.0 °C	2.22 ft-lb/in² @Temperature -22.0 °F	ASTM D256 and UNI EN ISO 179:1998

Thermal Properties	Metric	English	Comments
CTE, linear	22.7 µm/m-°C @Temperature 46.0 °C	12.6 µin/in-°F @Temperature 115 °F	X direction
	24.6 µm/m-°C @Temperature 80.0 °C	13.7 µin/in-°F @Temperature 176 °F	X direction

Thermal Properties	Metric	English	Comments
	@Temperature 46.0 - 120 °C	@Temperature 115 - 248 °F	X direction
	29.8 µm/m-°C @Temperature 120 °C	16.6 µin/in-°F @Temperature 248 °F	X direction
	90.4 µm/m-°C @Temperature 46.0 °C	50.2 µin/in-°F @Temperature 115 °F	Y direction
	99.3 µm/m-°C @Temperature 80.0 °C	55.2 µin/in-°F @Temperature 176 °F	Y direction
	104.8 µm/m-°C @Temperature 46.0 - 120 °C	58.22 µin/in-°F @Temperature 115 - 248 °F	Y direction
	124.7 µm/m-°C @Temperature 120 °C	69.28 µin/in-°F @Temperature 248 °F	Y direction
	131.8 µm/m-°C @Temperature 46.0 °C	73.22 µin/in-°F @Temperature 115 °F	Z direction
	216.7 µm/m-°C @Temperature 46.0 - 120 °C	120.4 µin/in-°F @Temperature 115 - 248 °F	Z direction
	230.7 µm/m-°C @Temperature 80.0 °C	128.2 µin/in-°F @Temperature 176 °F	Z direction
	287.6 µm/m-°C @Temperature 120 °C	159.8 µin/in-°F @Temperature 248 °F	Z direction
Thermal Conductivity	2.119 W/m-K	14.71 BTU-in/hr-ft²-°F	
Melting Point	179.3 °C	354.7 °F	ASTM D3418
Deflection Temperature at 1.8 MPa (264 psi)	175.4 °C	347.7 °F	ASTM D648
Vicat Softening Point	178.1 °C	352.6 °F	10 N; ASTM D1252

Electrical Properties	Metric	English	Comments
Electrical Resistivity	130 ohm-cm	130 ohm-cm	

Descriptive Properties	Value	Comments

Color	Black	
Descriptive Properties	Value	Comments
Surface Finish	1.8 Ra µm	After Finishing
	6.0 Ra µm	After SLS Process

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