WINDFORM® GT

Polyamide

CRP Technology s.r.l.

Message:

Technology: Selective Laser Sintering

Windform® GT is a composite material based on polyamide fiber glass, deep and dark black colour. After hand finishing, the colour becomes shining and brighter. The Windform® GT is an absolute new product in the family of polyamide materials for the additive manufacturing not only aesthetically, but also in terms of performance, because it differs from the other Windform® powders thanks to its higher flexibility. Windform® GT combines optimal characteristics of elasticity and ductility and resistance, thus it can be considered a highly valuable material in various racing and functional applications affected to vibration and shocks. In fact, the material has meaningful values of impact strength and elongation at break, which combined with relevant values of tensile strength and flexural strength make it ideal for applications where resistance to "damage" is a prerequisite, in order to preserve the component, for example in case of impact and/or improper use. A further element of distinction from other materials Windform® is its characteristic of being a waterproof material, resistant to moisture and therefore to the absorption of liquids.Windform® GT is also a very light material with excellent mechanical properties per unit density.

Applications:

Automotive applications where a certain flexibility in the car and under hood (such as snap fit) is required. It is also suitable in motorsport, air ducts, intake and cooling systems, the hydraulic ducts in contact with liquids or oils, in protective cover for sensors and for all applications that need a good flexibility and resistance to damage (for example: racing components near the ground).

Surface Finish: After SLS Process 6.20 Ra µm After manual finishing 1.45 Ra µm After CNC machining 1.15 Ra µm

General Information				
Filler / Reinforcement	Glass Fiber			
Features	Ductile			
	Filled			
	Good Flexibility			
	Low to No Water Absorption			
	Moisture Resistant			
	Shock Resistant			
	Vibration Damping			
Uses	Automotive Applications			
Agency Ratings	EC 1907/2006 (REACH)			
Appearance	Black			
Forms	Powder			
Processing Method	3D Printing, Laser Sintering/Melting			
Physical	Nominal Value	Unit		
Density (20°C)	1.19	g/cm³		
Mechanical	Nominal Value	Unit	Test Method	
Tensile Modulus	3290	MPa	ISO 527-2	
Tensile Stress	56.2	MPa	ISO 527-2	
Tensile Strain (Break)	15	%	ISO 527-2	
Flexural Modulus	3230	MPa	ISO 14125	
Flexural Stress	87.9	MPa	ISO 14125	

Flexural Modulus - per density unit	2710	MPa/g/cm ³	
Flexural Strength - per density unit	73.9	MPa/g/cm ³	
Tensile Modulus - per density unit	2760	MPa/g/cm³	
Ultimate Tensile Strength - per density unit	47.2	MPa/g/cm ³	
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (23°C)	8.7	kJ/m²	ISO 179
Charpy Unnotched Impact Strength (23°C)	54	kJ/m²	ISO 179
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (1.8			
MPa, Unannealed)	169	°C	ASTM D648B
Vicat Softening Temperature	189	°C	ASTM D1525 ¹
Melting Temperature	193	°C	ISO 11357
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	1.0E+16	ohms	ASTM D257
Volume Resistivity	2.6E+15	ohms·cm	ASTM D257
NOTE			
1.	Loading 1 (10 N)		

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