WINDFORM® SP

Polyamide

CRP Technology s.r.l.

Message:

Technology: Selective Laser Sintering
Windform® SP is a composite polyamide based carbon filled material characterised by deep black colour. Windform® SP is a "Top" level material within the polyamide Windform® materials for additive manufacturing. Windform® SP has excellent mechanical properties similar to Windform XT 2.0. In addition it has the added advantage of increased resistance to shocks, vibrations and deformations. This material shows increases in impact strength and elongation at break. Moreover the Windform® SP retains its excellent thermal properties and resistance to high temperature. Windform® SP is a material with optimal mechanical characteristics per density units. Another important element of this material is represented by its waterproof properties and therefore its resistance to absorption of liquids and moisture.
Applications:
Windform® SP is the suitable material to create accurate and reliable prototypes and is perfect for functional applications in motorsports, automotive (suitable for example for components under the hood, such as intake manifolds), Air (components for UAV , Unmanned Aerial Vehicle) and aerospace design, since it allows applications fully functional as well as dyno tests, track tests and development of pre-serie parts. It is also recommended for all applications requiring resistance to damage, vibration and deformation.
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	Carbon Fiber		
Features	Filled High Heat Resistance Low to No Water Absorption Moisture Resistant Shock Resistant Vibration Damping		
Uses	Aerospace Applications Automotive Applications Prototyping		
Agency Ratings	EC 1907/2006 (REACH)		
Appearance	Black		
Forms	Powder		
Processing Method	3D Printing, Laser Sintering/Melting		
Physical	**Nominal Value**	**Unit**	
Density (20°C)	1.11	g/cm³	
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	6220	MPa	ISO 527-2
Tensile Stress	76.1	MPa	ISO 527-2
Tensile Strain (Break)	11	%	ISO 527-2
Flexural Modulus	4650	MPa	ISO 14125

Flexural Stress	120	MPa	ISO 14125
Flexural Modulus - per density unit	4200	MPa/g/cm³	
Flexural Strength - per density unit	109	MPa/g/cm³	
Tensile Modulus - per density unit	5620	MPa/g/cm³	
Ultimate Tensile Strength - per density unit	68.8	MPa/g/cm³	
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength (23°C)	5.8	kJ/m²	ISO 179
Charpy Unnotched Impact Strength (23°C)	29	kJ/m²	ISO 179
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load (1.8 MPa, Unannealed)	187	°C	ASTM D648B
Vicat Softening Temperature	190	°C	ASTM D1525 [1]
Melting Temperature	193	°C	ISO 11357
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity	< 1.0E+8	ohms	ASTM D257
Volume Resistivity	< 1.0E+8	ohms·cm	ASTM D257
NOTE			
1.	Loading 1 (10 N)		

Recommended distributors for this material

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