

Excellent stiffness and strength per density

production



prototyping



Pre-production series front nose of Energica Eva electric motorbike

ABOUT

Class	Polyamide-based carbon fiber reinforced composite
Color	Black
Technology:	SLS (Selective Laser Sintering)
Test:	UL94 HB 1mm and 3mm rating Outgassing Nasa and Esa Coefficient of thermal expansion Skin contact approved

Windform XT 2.0 features excellent mechanical performances, including high stiffness and robustness matched to low density and remarkable lightness.

APPLICATIONS

- Realization of accurate, reliable, **durable prototypes**
- **Small production batch** and **pre-production**
- **Aerodynamic motorsport components** for F1 and IndyCar such as alternator covers
- **Automotive parts** such as cooling ducts, mirrors, headlight lids
- **Aerospace:** small satellites and spacecraft components

KEY FEATURES



High tensile modulus
Ideal for high-end mechanical applications



High stiffness and tensile strength



Good elongation at break



Low density



Resistant to high temperatures
(HDT 1,82 MPa 173,4 °C)



Ideal for applications where weight saving is crucial



Spaceproof
Compliant to NASA and ESA
Outgassing tests



Skin contact approved

GOT A PROJECT?

GET IN TOUCH WITH OUR EXPERT TO TALK ABOUT MOST SUITABLE MATERIAL AND TECHNOLOGY

LET'S TALK

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North America
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	Test Method	SI Unit	US Unit
GENERAL PROPERTIES			
Density (20 °C/68 °F)		1,097 g/cc	1.097 g/cc
Colour		BLACK	BLACK
THERMAL PROPERTIES			
Melting point	ISO 11357-2	179,30 °C	355 °F
HDT, 1.82 MPa	ISO 75-2 TYPE A	173,40 °C	344 °F
Vicat 10N	ISO 306 TYPE A50	176,10 °C	349 °F
FLAMMABILITY PROPERTIES			
Burning Test - HB 1mm	UL 94	HB	HB
Burning Test - HB 3mm	UL 94	HB	HB
MECHANICAL PROPERTIES			
Tensile Strength	UNI EN ISO 527-1	83,84 MPa	12200 psi
Tensile Modulus	UNI EN ISO 527-1	8928,20 MPa	1290 ksi
Elongation at break	UNI EN ISO 527-1	3,80 %	3.80 %
Flexural Strength	UNI EN ISO 178	133,00 MPa	19300 psi
Flexural Modulus	UNI EN ISO 178	7338,20 MPa	1060 ksi
Impact Strength Unnotched (Charpy 23 °C)	UNI EN ISO 179	22,43 kJ/m ²	10.7 ft-lb/in ²
Impact Strength Notched (Charpy 23 °C)	UNI EN ISO 179	4,72 kJ/m ²	2.25 ft-lb/in ²
Impact Strength Unnotched (Izod 23 °C)	UNI EN ISO 180	19,26 kJ/m ²	9.16 ft-lb/in ²
Impact Strength Notched (Izod 23 °C)	UNI EN ISO 180	5,30 kJ/m ²	2.52 ft-lb/in ²
Hardness Shore D	UNI EN ISO 868	79	79
Poisson Ratio	ASTM D638-14	0.41	0.41
Compression Strength	ASTM D695-10	120,2 MPa	17433.54 psi
Compression Elastic Modulus	ASTM D695-10	6,18 GPa	896.33 ksi
ELECTRICAL PROPERTIES			
Resistivity, Volume	ASTM D257	<10 ⁻⁸ Ω*cm	<10 ⁻⁸ Ω*cm
Resistivity, Surface	ASTM D257	<10 ⁻⁸ Ω	<10 ⁻⁸ Ω
SURFACE FINISH			
After SLS Process		6,00 Ra µm	6.00 Ra µm
After finishing		1,8 Ra µm	1.8 Ra µm
PROPERTIES PER DENSITY UNIT			
UTS per density unit		76,43 MPa/(g/cc)	11100 psi/(g/cc)
Tensile Modulus per density unit		8138,74 MPa/(g/cc)	1180 ksi/(g/cc)
Flexural Strength per density unit		121,24 MPa/(g/cc)	17600 psi/(g/cc)
Flexural Modulus per density unit		6689,33 MPa/(g/cc)	970 ksi/(g/cc)

Note: The material properties provided herein are for reference purposes only. Data was generated from the testing of parts produced with Windform® XT 2.0 material under optimal processing conditions.

Actual values may vary significantly as they are affected by part geometry and process parameters. Material specifications are subject to change without notice.

Standard Technical Details for Accuracy versus Tolerance:

For parts up to 1 mm (0.039"), the standard tolerance is ± 0,070 mm (0.003")

For parts up to 3 mm (0.118"), the standard tolerance is ± 0,125 mm (0.005")

For parts up to 6 mm (0.236"), the standard tolerance is ± 0,150 mm (0.006")

For parts over 6 mm (0.236"), refer to UNI EN ISO 286-2 JS14 class (linear tolerances).