

# WINDFORM<sup>®</sup> XT 2.0

**CLASS OF MATERIAL:** Polyamide based material carbon filled

**TECHNOLOGY:** Selective Laser Sintering

Windform<sup>®</sup> XT 2.0 is the evolution of the ground breaking high performance Windform<sup>®</sup> XT, the carbon fiber reinforced composite material, known for its mechanical properties, which made it particularly suitable in demanding applications such as motorsport sector, aerospace and UAV's.

Windform<sup>®</sup> XT 2.0 is an innovative material, and will replace the Windform<sup>®</sup> XT, as the "Top Level" of the current Windform<sup>®</sup> range. Windform<sup>®</sup> XT 2.0 improves mechanical properties compared to "traditional" Windform<sup>®</sup> XT, while maintaining the same workability for Laser Sintering machines in order to better fulfill the needs of Additive Manufacturing required to produce end use parts and prototypes.

Windform<sup>®</sup> XT 2.0 retains the matte black colour of the previous version and features improvements in mechanical properties: +8% in tensile strength, +22% in tensile modulus and +46% increase in elongation at break. Windform XT<sup>®</sup> 2.0 allows for the creation of accurate, reliable and durable prototypes and is perfect for functional applications.

## **APPLICATIONS:**

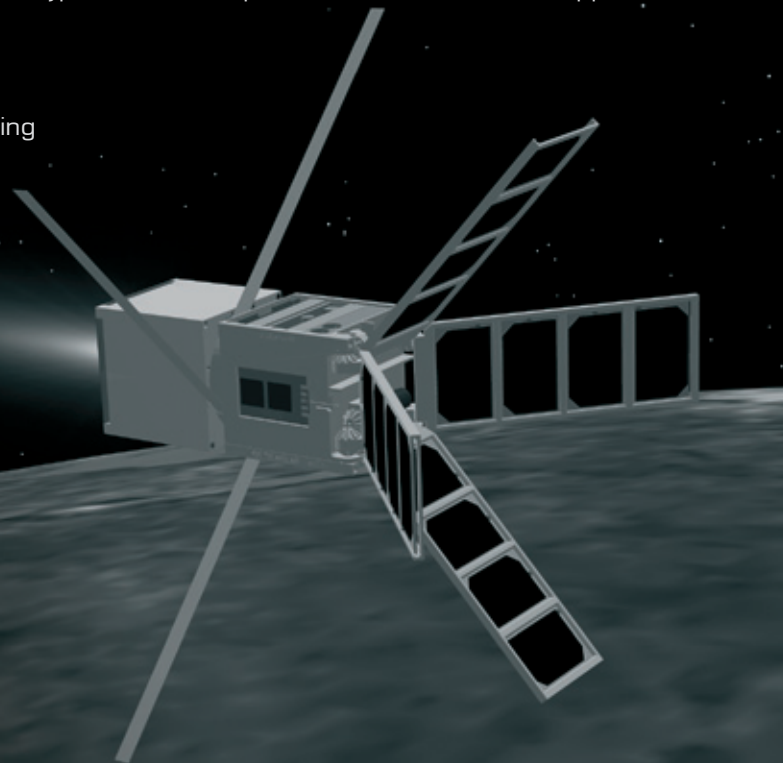
Windform<sup>®</sup> XT 2.0 is the high-tech material for Additive Manufacturing chosen by those working in the Motorsport, Automotive (suitable for example for components under the hood, such as intake manifolds and functional cooling ducts), Air (for components UAV, Unmanned Aerial Vehicle) Aerospace (useful also to create prototype satellite, such as the CubeSat) and Design, as it allows applications that are fully functional, as well as bench testing, or testing and racing on the track. These applications are given only as an example: the product versatility, combined with the technology used can assure users of infinite possibilities.

## **WHERE TO FIND WINDFORM<sup>®</sup> PRODUCTS**

CRP Technology produces Windform<sup>®</sup> XT 2.0 parts and it also distributes the material in Europe, USA and Japan, offering customized service as regards timing and delivery conditions of the product, according to customer's requests anywhere in the world.

## **HOW TO GET WINDFORM<sup>®</sup> PRODUCTS**

For any further information on product availability, request quotes or check delivery times, please visit [www.windform.eu](http://www.windform.eu) or send an inquiry to [info@crp.eu](mailto:info@crp.eu). CRP Technology customer service will contact you to answer all questions.



*Rendering of RAMPART CubeSat courtesy of AGI*

PROPERTIES WINDFORM <sup>®</sup> XT 2.0	Test Method	SI Unity	Windform <sup>®</sup> XT 2.0
<b>GENERAL PROPERTIES</b>			
Density (20° C)		g/cc	1,097
Colour			BLACK
<b>THERMAL PROPERTIES</b>			
Melting point	ISO 11357-2	°C	179,30
HDT, 1.82 Mpa	ISO 75-2 TYPE A	°C	173,40
Vicat 10N	ISO 306 TYPE A50	°C	176,10
<b>MECHANICAL PROPERTIES</b>			
Tensile Strength	UNI EN ISO 527-1:1997	Mpa	83,84
Tensile Modulus	UNI EN ISO 527-1:1997	Mpa	8928,20
Elongation at break	UNI EN ISO 527-1:1997	%	3,80
Flexural Strength	UNI EN ISO 178:2006	Mpa	133,00
Flexural Modulus	UNI EN ISO 178:2006	Mpa	7338,20
Impact Strength Unnotched (Charpy 23°C)	UNI EN ISO 179:2000	KJ/m <sup>2</sup>	22,43
Impact Strength Notched (Charpy 23°C)	UNI EN ISO 179:2000	KJ/m <sup>2</sup>	4,72
Impact Strength Unnotched (Izod 23°C)	UNI EN ISO 180:2000	KJ/m <sup>2</sup>	19,26
Impact Strength Notched (Izod 23°C)	UNI EN ISO 180:2000	KJ/m <sup>2</sup>	5,30
<b>ELECTRICAL PROPERTIES</b>			
Resistivity, Volume	ASTM D257:1993	ohm*cm	<10 <sup>8</sup>
Resistivity, Surface	ASTM D257:1993	ohm	<10 <sup>8</sup>
<b>SURFACE FINISH</b>			
After SLS Process		Ra µm	6,0
After finishing		Ra µm	1,8
<b>PROPERTIES PER DENSITY UNIT</b>			
UTS per density unit		Mpa/(g/cc)	76,43
Tensile Modulus per density unit		Mpa/(g/cc)	8138,74
Flexural Strength per density unit		Mpa/(g/cc)	121,24
Flexural Modulus per density unit		Mpa/(g/cc)	6689,33

**Note: these are all indicative values.** Data were generated from the testing of parts produced with Windform<sup>®</sup> XT 2.0 material under optimal processing conditions.

**Standard Technical Details for Accuracy versus Tolerance:**

For parts up to 6" (150 mm) the standard tolerance is: +/- 0.012 inch (0,3 mm)

For parts more then 6" (150 mm) the standard tolerance is: +/- 0.002 inch per inch (0,05 mm per 25 mm)