



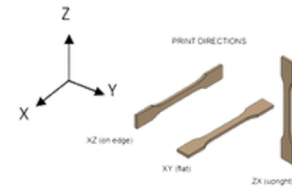
## ZEPHYR PA11 CF MC



Material class: Polyamide / Carbon Fiber (MC Technology)

## Extreme Light Weight & Thermal Resistance

- Weight reduction up to 30% due to MC technology
- Very low moisture uptake
- **97% bio-based polymer**



Property	Method	Units	Value XZ** (on edge)	Value ZX** (upright)
<b>Mechanical properties</b>				
Tensile Modulus	ISO 527 Type 1BA	MPa	5200	600
Tensile Strength at yield	ISO 527 Type 1BA	MPa	61	15
Tensile Strength at break	ISO 527 Type 1BA	MPa	61	15
Elongation at yield	ISO 527 Type 1BA	%	4.6	6.1
Elongation at break	ISO 527 Type 1BA	%	3.6	6.8
Flexural Modulus	ISO 178	Mpa	1965	582
Flexural Stress at break	ISO 178	Mpa	61	14
Flexural Strain at break	ISO 178	%	1.0	0.8
Impact Strength	ISO 180	J/m		
Impact Strength	ISO 180	kJ/m2		

\*\* XZ/ZX Bars cut out of 3D printed plates on edge and in Z direction printed according to guidelines



Property	Method	Units	Value
<b>Thermal properties</b>			
Glass transition temperature (Tg)	ISO 11357-1	°C	
Melting temperature	ISO 11357-3	°C	189
Vicat softening temperature	ISO 306/B50	°C	
Temp. of deflection under load (1.80 Mpa)*	ISO 75-1/-2	°C	180
Temp of deflection under load ( 0.45 Mpa)*	ISO 75-1/-2	°C	
<b>Physical properties</b>			
Filament diameter (+/- 0.05 mm)		mm	1.75
Density	ISO 1183-1	g/cm3	0.85 (foamed)
Humidity absorption (70 °C, 62% r.H.)*	ISO1110	%	0.7-0.9
Water absorption (23 °C saturated)*	ISO 62	%	1.3-1.7

\* Injection moulding data



## Recommended processing conditions

Nozzle temperature	Recommended 260 °C (250 °C - 275 °C)
Bed temperature	Recommended 100 °C (80 °C - 110 °C)
Chamber temperature	Recommended 60 °C (23 °C - 90 °C)
Bed material	(Textured) PEI Sheet, Glass, Carbon Fiber Plate
Adhesion promoter	Magigoo PA
Nozzle diameter	≥ 0.6mm, hardened steel nozzle
Print speed	Recommended: 30 mm/s (30-60 mm/s)
Drying instructions filament	100 °C for 6-8 hours

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