Tectonic 3D

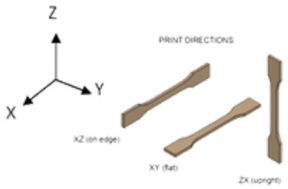
Technical data sheet

VULCAN TPI

Material class: Thermoplastic Polyimide

Flame-Retardant & Highest Z-Strength

- Easy to print TPI
- Base material meets EN45545-2 with HL1/2/3 according to requirements R22/R23



Property	Method	Units	Value XZ** (on edge)	Value ZX** (upright)
Mechanical properties				
Tensile Modulus	ISO 527 Type 1BA	MPa	2890	2560
Tensile Strength at yield	ISO 527 Type 1BA	MPa	89	68
Tensile Strength at break	ISO 527 Type 1BA	MPa	100	54
Elongation at yield	ISO 527 Type 1BA	%	4.8	3.5
Elongation at break	ISO 527 Type 1BA	%	5.4	2.6
Impact strength izod (notched)	ISO 180	kJ/m2	5.3	4.3
Impact strength izod (unnotched)	ISO 180	kJ/m2	28	26

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

Property	Method	Units	Value
Thermal properties			
Smoke opacity	ISO 5659-2 (25kW/m2)	*Ds* (4)	0.7
		VOF[4]	0.8
		Dm	80.6
Limit oxygen index	ISO 4589-2	CIT nlp	0.45
Smoke toxicity	NF X 70- 100	ILO % *O*[2]	32.6

Property	Method	Units	Value
Thermal properties			
Glass transition temperature (Tg)	DMA	°C	195
Melting temperature	ISO 11357-3	°C	
Vicat softening temperature	ISO 306/B50	°C	
Temp. of deflection under load (1.80 Mpa)*	ISO 75-1/-2	°C	167
Temp of deflection under load (0.45 Mpa)*	ISO 75-1/-2	°C	175
Physical properties			
Filament diameter (+/- 0.05 mm)		mm	1.75
Density	ISO 1183-1	g/cm3	1.51
Humidity absorption (70 °C, 62% r.H.)*	ISO1110	%	
Water absorption (23 °C saturated)*	ISO 62	%	

* Injection moulding data

Recommended processing conditions	
Nozzle temperature	Recommended 405 °C (390 °C - 410 °C)
Bed temperature	Recommended 160 °C (120 °C - 160 °C)
Chamber temperature	Recommended 160 °C (80 °C - 160 °C)
Bed material	(Textured) PEI Sheet, Glass, Carbon Fiber Plate
Adhesion promoter	Magigoo HT
Nozzle diameter	≥ 0.4mm, hardened steel nozzle
Print speed	Recommended: 30 mm/s (15-150 mm/s)
Drying instructions filament	120 °C for 4-8 hours

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