

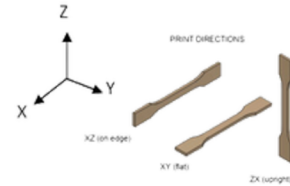


ATAR FST1

Material class: Blend - Polyphenylene Ether (PPE)

Flame-Retardant & Low Smoke

- Flame retardant V0 at 1.5mm (UL)
- Enhanced resistance to melting and dripping
- Base material meets the requirements of FAR 25.853
- Heat stabilized and impact modified



Property	Method	Units	Value XZ** (on edge)	Value ZX** (upright)
Mechanical properties				
Tensile Modulus	ISO 527 Type 1BA	MPa	2200	1800
Tensile Strength at yield	ISO 527 Type 1BA	MPa	57.6	no yield
Tensile Strength at break	ISO 527 Type 1BA	MPa	57.6	20.9
Elongation at yield	ISO 527 Type 1BA	%	4.3	no yield
Elongation at break	ISO 527 Type 1BA	%	9	1.3
Flexural Modulus	ISO 178	Mpa		
Flexural Stress at break	ISO 178	Mpa		
Flexural Strain at break	ISO 178	%		
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
Thermal properties			
Smoke opacity	ISO 5659-2 (25kW/m2)	Ds (4)	3.7
		VOF ⁴	7.9
		Dm	6.1
Smoke toxicity	EN 17084 Method 01	ITC 4 minutes	0.02
		ITC 8 minutes	0.02
Limit oxygen index	ISO 4589-2	ILO % O ²	28.7

Property	Method	Units	Value
Thermal properties			
Glass transition temperature (Tg)	ISO 11357-1	°C	
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	124
Temp of deflection under load (0.45 Mpa)*	ISO 75-1/-2	°C	130
Physical properties			
Filament diameter (+/- 0.05 mm)		mm	1.75
Density	ISO 1183-1	g/cm ³	1.11
Humidity absorption (70 °C, 62% r.H.)*	ISO1110	%	0.005
Water absorption (23 °C saturated)*	ISO 62	%	0.2

* Injection moulding data



Recommended processing conditions

Nozzle temperature	Recommended 310 °C (290 °C - 310 °C)
Bed temperature	Recommended 160 °C (140 °C - 160 °C)
Chamber temperature	Recommended 90 °C (70 °C - 90 °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 (30-50 mm/s)
Drying instructions filament	120 °C for 6-8 hours

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