

TPU [Thermoplastic Polyurethane powder]

SLS MATERIAL

General Properties	Test Method	Typical Values
Bulk Density / g/cm ³	DIN EN ISO 60	0.5
Printed Part Density / g/cm ³	DIN EN ISO 1183-1	1.1
Mean Particle Size d ₅₀ / μm	ISO 13320	70-90
Glass transition Temperature / C°	ISO 11357 (20K/min)	-48
Melting Temperature / °C	ISO 11357 (20K/min)	120-150

Thermal Properties	Test Method	Typical Values x direction	Typical Values z direction
Vicat/A (10 N) / °C	DIN EN ISO 306	98	98

Mechanical Properties	Test Method	Typical Values x direction	Typical Values z direction
Hardness Shore A	DIN ISO 7619-1	88-90	88-90
Tensile Strength / MPa	DIN 53504, S2	8	7
Tensile Elongation at break / %	DIN 53504, S2	270	130
Tensile Modulus / MPa	ISO 527-2 , 1A	75	75
Flexural Modulus / MPa	DIN EN ISO 178	70	70
Tear Resistance (propagation, Trouser) / kN/m	DIN ISO 34-1 , A	26	26
Tear Resistance (initiation, Graves) / kN/m	DIN ISO 34-1 , B	43	37

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Mechanical Properties	Test Method	Typical Values x direction	Typical Values z direction
Compression Set B (23°C, 72h) / %	DIN ISO 815 -1	24	24
Rebound resilience / %	DIN 53512	63	63
Abrasion Resistance / mm ³ (method A)	DIN ISO 4649	86	95
Charpy Impact Strength (notched 23°C) / kJ/m ²	DIN EN ISO 179-1	Not Break	Not Break
Charpy Impact Strength (notched -10°C) / kJ/m ²	DIN EN ISO 179-1	60	58
Fatigue behaviour (Rossflex, 100k cycles, 23°C)	ASTM D1052	No cut growth	
Fatigue behaviour (Rossflex, 100k cycles, -10° C)	ASTM D1052	No cut growth	

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