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OVERTURE™

Version 1.0

OVERTURE TPU TECHNICAL DATA SHEET

OVERTURE TPU is a thermoplastic polyurethane (TPU) based filament specifically designed to work on most desktop 3D printers. It has a shore hardness of 95A and can stretch more than 3 times its original length.

Physical Properties

Property	Testing method	Typical value
Density	ASTM D792 (ISO 1183, GB/T 1033)	1.19 – 1.24 (g/cm3 at 21.5˚C)
Melt index	210 °C, 1.2 kg	3-6 (g/10 min)

Tested with 3D printed specimen of 100% infill

Mechanical Properties

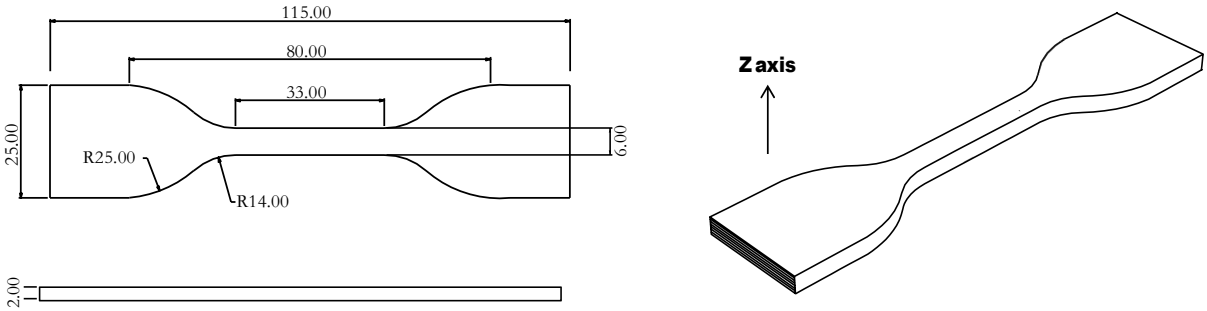
Property	Testing method	Typical value
100% modulus (X-Y)	ASTM D638 (ISO 527, GB/T 1040)	9.3 ± 0.3 (MPa)
Tensile strength (X-Y)	ASTM D638 (ISO 527, GB/T 1040)	29.1 ± 2.8 (MPa)
Elongation at break (X-Y)	ASTM D638 (ISO 527, GB/T 1040)	332.1 ± 14.9 (%)
Shore hardness	ASTM D2240 (ISO 7619, GB/T 31)	~95A

All testing specimens were printed under the following conditions:
nozzle temperature = 225 °C, printing speed = 30 mm/s, build plate temperature = 30 °C,
infill = 100% All specimens were conditioned at room temperature for 24h prior to testing

Recommended printing conditions

Nozzle temperature	210 - 230 ˚C
Build Surface material	OVERTURE Build Surface, Glass, Blue Tape
Build surface treatment	None, Applying PVA glue to the build surface
Build plate temperature	25 - 60 ˚C
Cooling fan	Turned on
Printing speed	20 - 40 mm/s
Raft separation distance	0.2 mm
Retraction distance	1 mm
Retraction speed	20 mm/s
Threshold overhang angle	35 ˚
Recommended support material	PVA

Based on 0.4 mm copper nozzle and Simplify 3D Printing conditions may vary with different nozzle diameters



Tensile testing specimen; ASTM D638 (ISO 527, GB/T 1040)