January 2024 Version 1.1

OVERTURE CARBON FIBER TECHNICAL DATA SHEET

Physical Properties

Property	Testing method	Typical value
Density	ASTM D792	1.29 (g/cm3 at 21.5˚C)
Glass transition temperature	DSC, 10 °C/min	61.9(˚C)
Vicat Softening temperature	ATM D1525	64 (˚C)
Melt index	210 °C, 2.16 kg	9.24 (g/10 min)
Melting temperature	DSC, 10 K/min	162.40(˚C)

Tested with 3D printed specimen of 100% infill

Mechanical Properties

Property	Testing method	Typical value
Young's modulus (X-Y)	ASTM D638 (ISO 527, GB/T 1040)	2945.26 ± 100.13(MPa)
Tensile strength (X-Y)	ASTM D638 (ISO 527, GB/T 1040)	28.28 ± 0.70(MPa)
Elongation at break (X-Y)	ASTM D638 (ISO 527, GB/T 1040)	4.20 ± 0.12 (%)
Bending modulus	ASTMD790 (ISO 178, GB/T 9341)	3215.92 ± 182.61 (MPa)
Bending strength	ASTMD790 (ISO 178, GB/T 9341)	54.2 ± 1.4(MPa)
Young's modulus	ASTM D638 (ISO527, GB/T 1040)	2141.33 ± 91.06 (MPa)
Tensile strength (Z)	ASTM D638 (ISO527, GB/T 1040)	12.54 ± 0.68 (MPa)
Elongation at break (Z)	ASTM D256 (ISO 179, GB/T 1043)	0.75 ± 0.08%
Impact strength	ASTM D256 (ISO 179, GB/T 1043)	4.82 ± 0.14 (kJ/m2)

All testing specimens were printed under the following conditions: nozzle temperature = 200 °C, printing speed = 45 mm/s, build plate temperature = 40°C, infill = 100% All specimens were conditioned at room temperature for 24h prior to testing

Recommended printing conditions

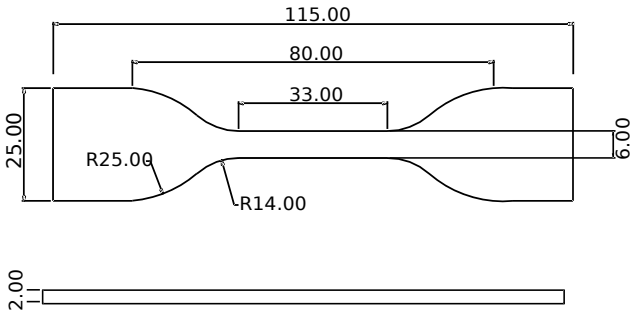
Nozzle temperature	190 - 220 (˚C)
Build Surface material	OVERTURE Build Surface, Glass, Blue Tape
Build surface treatment	None, Applying PVA glue to the build surface
Build plate temperature	30-60 (˚C)
Cooling fan	Turned on
Printing speed	30-70 (mm/s)
Retraction distance	1-3 mm
Retraction speed	30 - 60 mm/s
Threshold overhang angle	60 ˚
Recommended support material	None

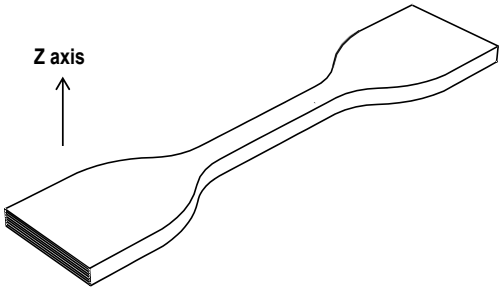
Based on 0.4 mm copper nozzle and Simplify 3D Printing conditions may vary with different nozzle diameters

Disclaimer :

The typical values presented in this data sheet are intended for reference and comparison purposes only. They should not be used for design specifications or quality control purposes. Actual values may vary significantly with printing conditions. End- use performance of printed parts depends not only on materials, but also on part design, environmental conditions, printing conditions, etc. Product specifications are subject to change without notice.

Each user is responsible for determining the safety, lawfulness, technical suitability, and disposal/recycling practices of OVERTURE materials for the intended application. OVERTURE makes no warranty of any kind, unless announced separately, to the fitness for any use or application. OVERTURE shall not be made liable for any damage, injury or loss induced from the use of OVERTURE materials in any





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