

Raise3D Premium PETG Technical Data Sheet

Raise3D Premium PETG is cost-effective 3D printing filament based on PETG. It features good printability, large overhang angles and environmental friendliness.

Physical Properties¹

Property	Testing Method	Typical Value
Density	ASTM D792 (ISO 1183, GB/T 1033)	1.3 (g/cm ³ at 21.5°C)
Glass transition temperature	DSC, 10 °C/min	81 (°C)
Vicat Softening temperature	ASTM D1525 (ISO 306 GB/T 1633)	84 (°C)
Melt index	220 °C, 2.16 kg	3.9 (g/10 min)
Melt index	240 °C, 2.16 kg	10.8 (g/10 min)

Note:

1. Tested with 3D printed specimen of 100% infill.

Mechanical Properties¹

Property	Testing Method	Typical Value
Young's modulus (X-Y)	ASTM D638 (ISO 527, GB/T 1040)	1472 ± 270 (MPa)
Tensile strength (X-Y)	ASTM D638 (ISO 527, GB/T 1040)	31.9 ± 1.1 (MPa)
Elongation at break (X-Y)	ASTM D638 (ISO 527, GB/T 1040)	6.8 ± 0.9 (%)
Bending modulus	ASTM D790 (ISO 178, GB/T 9341)	1174 ± 64 (MPa)
Bending strength	ASTM D790 (ISO 178, GB/T 9341)	53.7 ± 2.4 (MPa)
Charpy impact strength	ASTM D256 (ISO 179, GB/T 1043)	5.1 ± 0.3 (kJ/m ²)

Note:

1. All testing specimens were printed under the following conditions:

nozzle temperature = 240 °C, printing speed = 45 mm/s, build plate temperature = 80 °C, infill = 100%

All specimens were conditioned at room temperature for 24h prior to testing.



Recommended printing conditions¹

Parameter	Recommended Setting
Nozzle temperature	230 - 240 (°C)
Build Surface material	Glass, BuildTak® recommended
Build surface treatment	None
Build plate temperature	80 (°C)
Cooling fan	Turned on
Printing speed	45 (mm/s)
Raft separation distance	0.14 (mm)
Retraction distance	1-3 (mm)
Retraction speed	20-80 (mm/s)
Recommended environmental temperature	Room temperature
Threshold overhang angle	70 (°)
Recommended support material	Raise3D Premium PVA

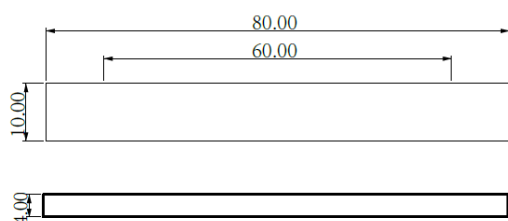
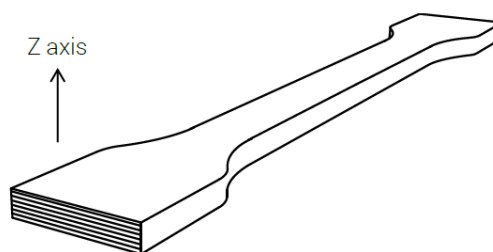
Note:

1. Based on 0.4 mm nozzle and ideaMaker. Printing conditions may vary with different nozzle diameters.

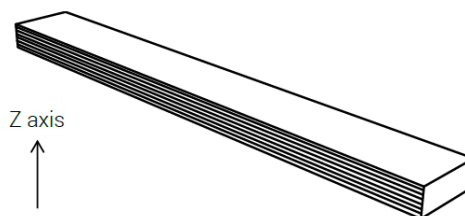
Testing Geometries

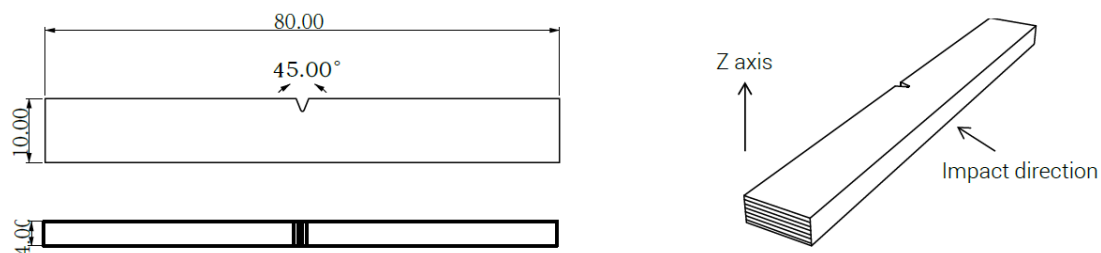


Tensile testing specimen; ASTM D638 (ISO 527, GB/T 1040)



Flexural testing specimen; ASTM D790 (ISO 178, GB/T 9341)





Impact testing specimen; ASTM D256 (ISO 179, GB/T 1043)

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 Raise3D materials for the intended application. Raise3D makes no warranty of any kind, unless announced separately, to the fitness for any use or application. Raise3D shall not be made liable for any damage, injury or loss induced from the use of Raise3D materials in any application.

