

## PolyLite™ ABS

PolyLite™ ABS is made with a specialty bulk-polymerized ABS resin, which has significantly lower volatile content compared to traditional ABS resins. It delivers excellent printing quality with minimal odor during printing.

### Physical Properties

Property	Testing method	Typical value
Density	ASTM D792 (ISO 1183, GB/T 1033)	1.12 (g/cm <sup>3</sup> at 21.5 °C)
Glass transition temperature	DSC, 10 °C/min	101 (°C)
Vicat Softening temperature	ASTM D1525 (ISO 306 GB/T 1633)	104 (°C)
Melt index	220 °C, 2.16 kg	9-14 (g/10 min)
Decomposition temperature	TGA, 20 °C/min	> 380 (°C)

Tested with 3D printed specimen of 100% infill

### Mechanical Properties

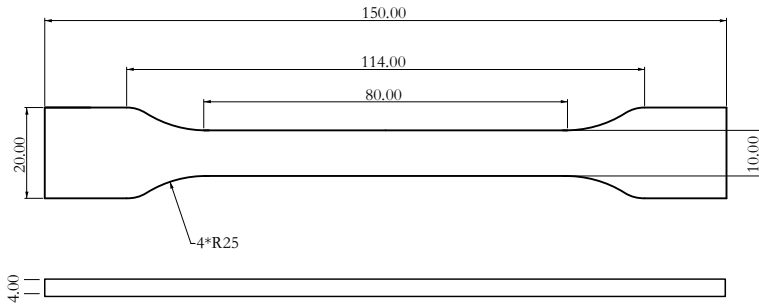
Property	Testing method	Typical value
Young's modulus (X-Y)	ASTM D638 (ISO 527, GB/T 1040)	2174 ± 285 (MPa)
Tensile strength (X-Y)	ASTM D638 (ISO 527, GB/T 1040)	33.3 ± 0.8 (MPa)
Elongation at break (X-Y)	ASTM D638 (ISO 527, GB/T 1040)	2.7 ± 0.4 (%)
Bending modulus	ASTMD790 (ISO 178, GB/T 9341)	1339 ± 238 (MPa)
Bending strength	ASTMD790 (ISO 178, GB/T 9341)	59.0 ± 1.3 (MPa)
Charpy impact strength	ASTM D256 (ISO 179, GB/T 1043)	12.6 ± 1.1 (kJ/m <sup>2</sup> )

All testing specimens were printed under the following conditions:  
 nozzle temperature = 255 °C, printing speed = 60 mm/s, build plate temperature = 100 °C, infill = 100%  
 All specimens were conditioned at room temperature for 24h prior to testing

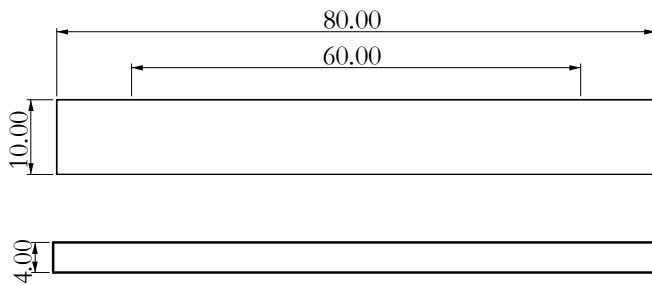
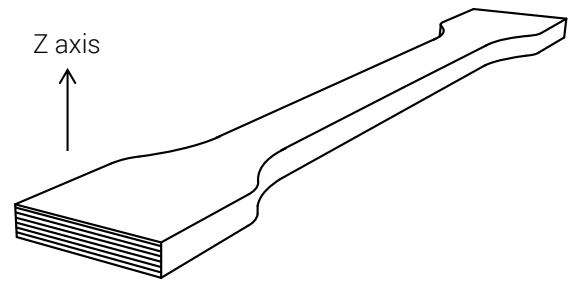
### Recommended printing conditions

Parameter	
Nozzle temperature	245 - 265 (°C)
Build Surface material	BuildTak® recommended
Build surface treatment	None
Build plate temperature	90 - 105 (°C)
Cooling fan	Turned off
Printing speed	30-50 (mm/s)
Raft separation distance	0.2 (mm)
Retraction distance	1 (mm)
Retraction speed	20 (mm/s)
Recommended environmental temperature	20 - 50 (°C)
Threshold overhang angle	50 (°)
Recommended support material	None

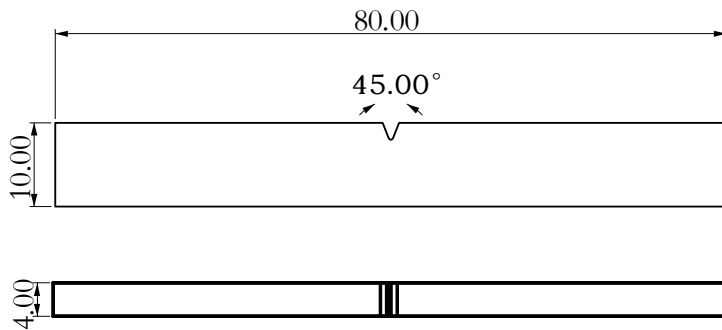
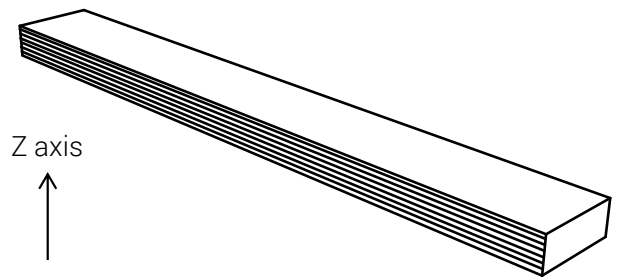
Based on 0.4 mm nozzle and Simplify 3D v.4.0. Printing conditions may vary with different nozzle diameters



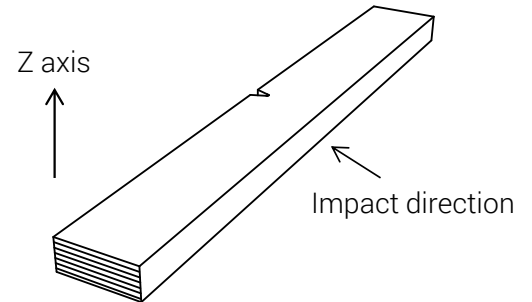
Tensile testing specimen; ASTM D638 (ISO 527, GB/T 1040)



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.

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