polymaker

Innovators in 3D printing

Techanical Data Sheet

PolyWood™

www.polymaker.com

V5.0

PolyWood™

PolyWood™ is a wood mimic filament without actual wood powder, which removes all risks of nozzle clogs. PolyWood™ is made entirely with PLA using a special foaming technology. It exhibits the same density and appearance as wood.

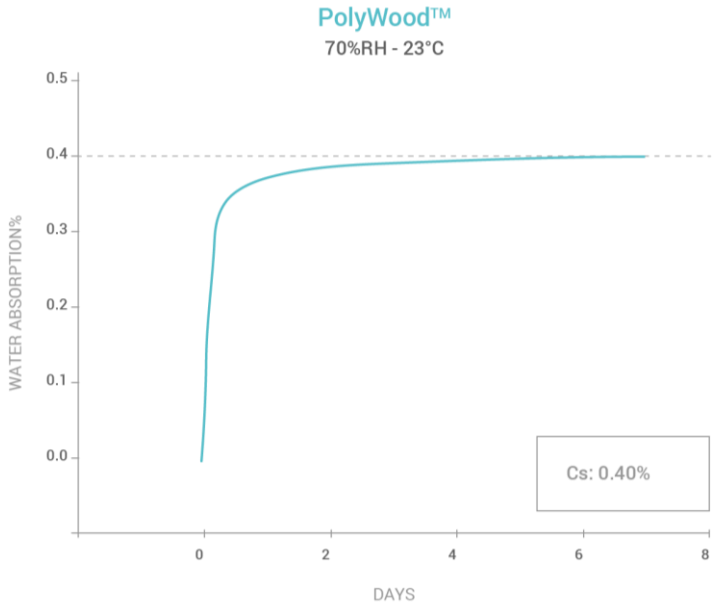
PHISICAL PROPERTIES

Property	Testing Method	Typical Value
Density	ISO1183, GB/T1033	0.8 g/cm^3 at 21°C
Melt Index	N/A	N/A
Light Transmission	N/A	N/A
Flame retardancy V2	UL94	V2

CHEMICAL RESISTANT DATA

Property	Testing Method
Effect of weak acids	Not Resistant
Effect of strong acids	Not Resistant
Effect of weak alkalis	Not Resistant
Effect of strong alkalis	Not Resistant
Effect of organic solvent	No data available
Effect of oils and grease	No data available
Effect of Sunlight	No data available

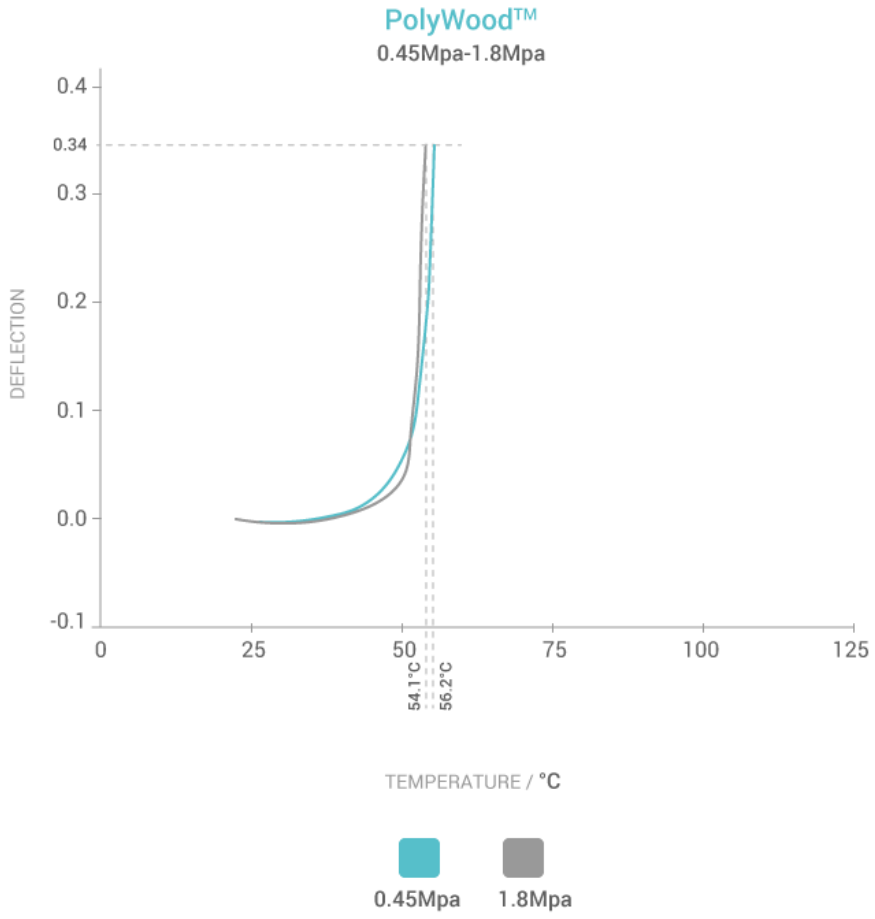
MOISTURE ABSORPTION CURVE



THERMAL PROPERTIES

Property	Testing Method	Typical Value
Glass transition	DSC, 10°C/min	62.4 °C
Melting temperature	DSC, 10°C/min	150.8 °C
Crystallization temperature	DSC, 10°C/min	115.5 °C
Decomposition temperature	TGA, 20°C/min	N/A
Vicat softening temperature	ISO 306 GB/T 1633	60.3 °C
Heat deflection temperature	ISO 75 1.8MPa	54.1 °C
Heat deflection temperature	ISO 75 0.45MPa	56.2 °C
Thermal conductivity	N/A	N/A
Low temperature resistance	N/A	N/A
Heat shrinkage rate	N/A	N/A

HDT CURVE



MECHANICAL PROPERTIES

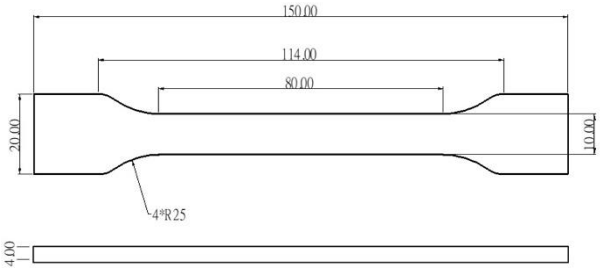
Property	Testing Method	Typical Value
Young's modulus (X-Y)	ISO 527, GB/T 1040	2636 ± 330 MPa
Young's modulus (Z)		N/A
Tensile strength (X-Y)	ISO 527, GB/T 1040	23.2 ± 0.4 MPa
Tensile strength (Z)		14.5 ± 0.4 MPa
Elongation at break (X-Y)	ISO 527, GB/T 1040	8.21 ± 0.87 %
Elongation at break (Z)		7.91 ± 1.3 %
Bending modulus (X-Y)	ISO 178, GB/T 9341	2607 ± 50 MPa
Bending modulus (Z)		N/A
Bending strength (X-Y)	ISO 178, GB/T 9341	52.9.1 ± 0.3 MPa
Bending strength (Z)		N/A
Charpy impact strength (X-Y)	ISO 179, GB/T 9343	2.06 ± 0.19 kj/m^2
Charpy impact strength (Z)		N/A

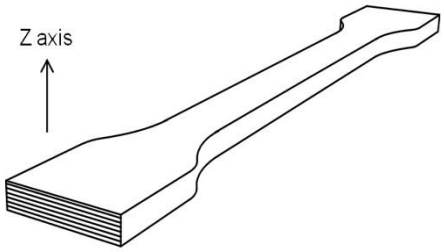
HOW TO MAKE SPECIMENS

Printing temperature	195 °C
Bed temperature	60 °C
Shell	2
Top & bottom layer	4
Infill	100%
Environmental temperature	25 °C
Cooling fan	ON

TENSILE TESTING SPECIMEN

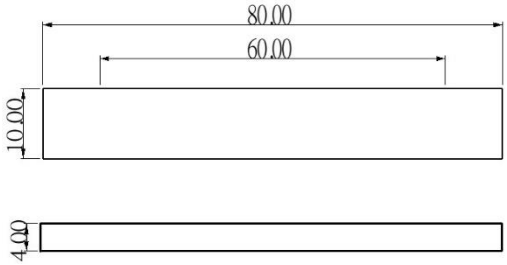
ASTM D638 (ISO 527, GB/T 1040)

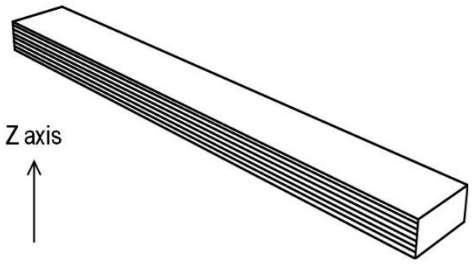




FLEXURAL TESTING SPECIMEN

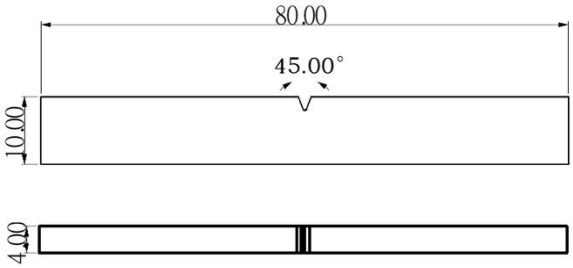
ASTM D638 (ISO 527, GB/T 1040)

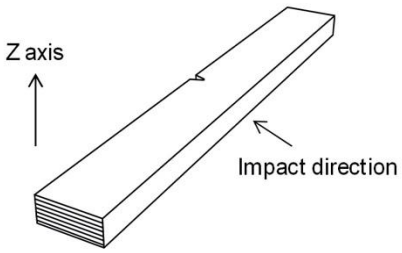




IMPACT TESTING SPECIMEN

ASTM D638 (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 Polymaker materials for the intended application. Polymaker makes no warranty of any kind, unless announced separately, to the fitness for any use or application. Polymaker shall not be made liable for any damage, injury or loss induced from the use of Polymaker materials in any application.