Bambu Filament

Technical Data Sheet V2.0

TPU 95A

• Basic Info

TPU is a popular flexible filament for 3D printing because of its durability. It's commonly used to create 3D printing parts that can be flexed, stretched, and blended, and it is not easily breakable. However, flexibility means it's not suitable for high-speed printing. Bambu TPU 95A is designed for elastic and abrasion resistant parts with a Shore hardness of 95A.

• Specifications

Subjects	Data
Diameter	1.75 mm
Net Filament Weight	1 kg
Spool Material	PC + ABS (Temperature resistance 90 °C)
Spool Size	Diameter: 200 mm; Height: 67 mm

• Recommended Printing Settings

Subjects	Data
Drying Settings before Printing	70℃, 8 hours
Printing and Storage Humidity	< 20% RH (Sealed with desiccant)
Nozzle Temperature	220 - 240 °C
Bed Type	Cool Plate, Engineering Plate, High Temperature Plate or Textured PEI Plate
Bed Surface Preparation	PVP Glue
Bed Temperature	30 - 35 °C
Cooling Fan	100%
Printing Speed	< 80 mm/s
Retraction Length	0.8 - 1.4 mm
Retraction Speed	20 - 40 mm/s
Chamber Temperature	25 - 45 °C
Max Overhang Angle	~ 70°

Max Bridging Length	20 mm

• Properties

Bambu Lab has tested the differing aspects in the performance of TPU 95A material, including physical, mechanical, and chemical properties. Typical values are listed as followed:

Physical Properties		
Subjects	Testing Methods	Data
Density	ISO 1183	1.20 g/cm³
Melt Index	210 °C, 2.16 kg	5.2 ± 0.3 g/10 min
Melting Temperature	DSC, 10 °C/min	185 °C
Glass Transition Temperature	DSC, 10 °C/min	N / A
Crystallization Temperature	DSC, 10 °C/min	N / A
Vicar Softening Temperature	ISO 306, GB/T 1633	N / A
Heat Deflection Temperature	ISO 75 1.8 MPa	N / A
Heat Deflection Temperature	ISO 75 0.45 MPa	N / A
Saturated Water Absorption Rate	25 °C, 55% RH	1.16%

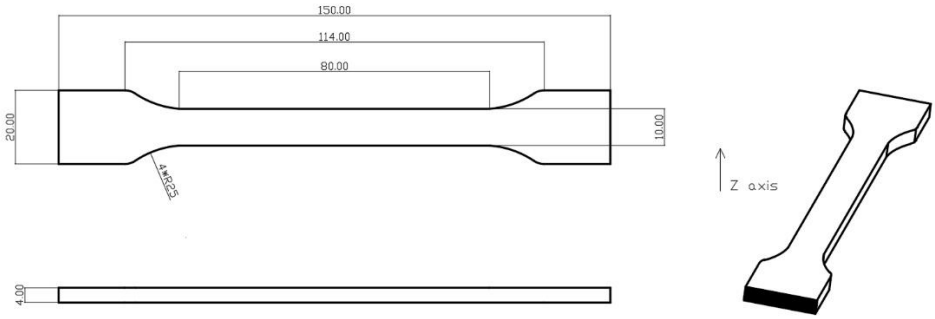
Mechanical Properties（Dry state）		
Subjects	Testing Methods	Data
Young's Modulus (X-Y)	ISO 527, GB/T 1040	9.2 ± 0.4 MPa
Young's Modulus (Z)	ISO 527, GB/T 1040	7.8 ± 0.5 MPa
Tensile Strength (X-Y)	ISO 527, GB/T 1040	29.6 ± 0.6 MPa
Tensile Strength (Z)	ISO 527, GB/T 1040	23.2 ± 0.5 MPa
Breaking Elongation Rate (X-Y)	ISO 527, GB/T 1040	> 700%
Breaking Elongation Rate (Z)	ISO 527, GB/T 1040	> 500%
Bending Modulus (X-Y)	ISO 178, GB/T 9341	N/A
Bending Modulus (Z)	ISO 178, GB/T 9341	N/A
Bending Strength (X-Y)	ISO 178, GB/T 9341	N/A
Bending Strength (Z)	ISO 178, GB/T 9341	N/A
Impact Strength (X-Y)	ISO 179, GB/T 1043	N/A

Other Physical and Chemical Properties	
Subjects	Data
Odor	Odorless
Composition	TPU
Skin Hazards	No hazard
Chemical Stability	Stable under normal storage and handling conditions
Solubility	Insoluble in water
Resistance to Acid	Not resistant
Resistance to Alkali	Not resistant
Resistance to Organic Solvent	Not resistant to some organic solvents
Resistance to Oil and Grease	Resistant to most kinds of oil and grease
Flammability	Flammable and self-extinguishing in the air
Combustion Products	Water, carbon oxides, nitrogen oxides
Odor of Combustion Products	Pungent odor

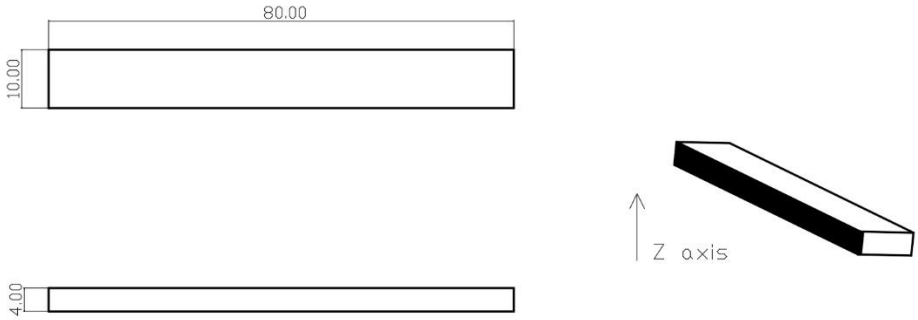
• Specimen Test

Specimen Printing Conditions	
Subjects	Data
Nozzle Temperature	230 °C
Bed Temperature	35 °C
Printing Speed	80 mm/s
Infill Density	100%
*All the specimens were annealed and dried at 70 °C for 12 hours before testing.	

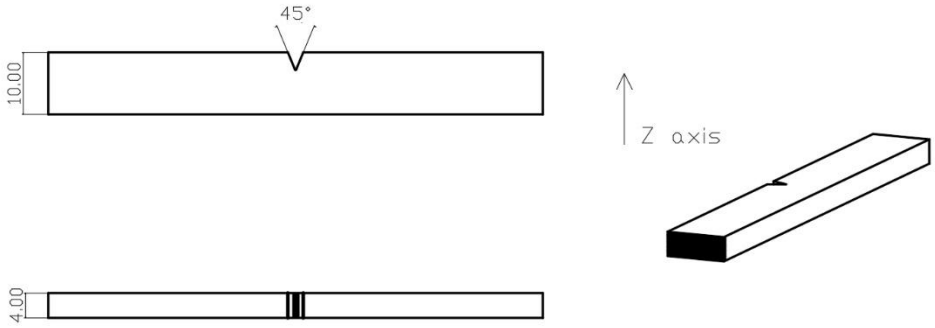
1. Tensile Testing



2. Bending Testing



3. Impact Testing



• Disclaimer

The performance values are tested by standard samples at Bambu Lab, and the values are for design reference and comparison only. Actual 3D printing model performance is related to many other factors, including printers, printing conditions,

printing models, printing parameters, etc.

In the process of using Bambu Lab 3D printing filaments, users are responsible for the legality, safety, and performance indicators of printing. Bambu Lab is not responsible for the use of materials and scenarios and is not responsible for any damage that occurs in the process of using our filaments.