



Bambu Filament

Technical Data Sheet V1.0

TPU for AMS

• Basic Info

Bambu TPU for AMS redefines your TPU printing experience with enhanced performance and seamless AMS integration. Perfectly suited for vibrant multicolor projects, it opens up exciting possibilities in flexible material printing. With a Shore hardness of 68D, Bambu TPU for AMS offers impressive toughness while minimizing stringing, delivering the ease of PLA printing alongside TPU's signature flexibility and durability.

• 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	Blast Drying Oven: 70 °C, 8 h X1 Series Printer Heatbed: 80 - 90 °C, 12 h
Printing and Storage Humidity	< 20% RH (Sealed, with desiccant)
Nozzle Size	0.4, 0.6, 0.8 mm
Nozzle Temperature	220 - 240 °C
Build Plate Type	Textured PEI Plate / Smooth PEI Plate
Bed Surface Preparation	Glue
Bed Temperature	30 - 35 °C
Cooling Fan	Turn on
Printing Speed	< 250 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
Support	Turn on

- **Properties**

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

Physical Properties		
Subjects	Testing Methods	Data
Density	ISO 1183	1.26 g/cm ³
Melt Index	210 °C, 2.16 kg	21.8 ± 0.3 g/10 min
Melting Temperature	DSC, 10 °C/min	183 °C
Glass Transition Temperature	DSC, 10 °C/min	N / A
Crystallization Temperature	DSC, 10 °C/min	N / A
Vicat 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	1.20%

Mechanical Properties		
Subjects	Testing Methods	Data
Young's Modulus (X-Y)	ISO 527, GB/T 1040	1190 ± 0.4 MPa
Young's Modulus (Z)	ISO 527, GB/T 1040	600 ± 0.5 MPa
Tensile Strength (X-Y)	ISO 527, GB/T 1040	22.4 ± 0.6 MPa
Tensile Strength (Z)	ISO 527, GB/T 1040	11.2 ± 0.5 MPa
Breaking Elongation Rate (X-Y)	ISO 527, GB/T 1040	> 650%
Breaking Elongation Rate (Z)	ISO 527, GB/T 1040	31%
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	124.3 kJ/m ²
Impact Strength (Z)	ISO 179, GB/T 1043	9.6 ± 0.3 kJ/m ²

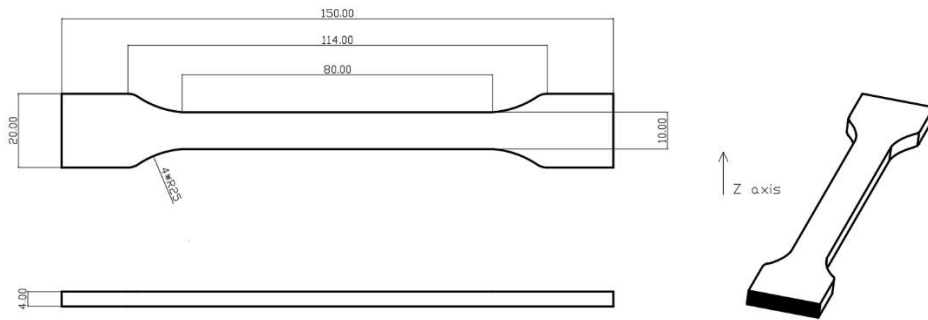
Other Physical and Chemical Properties	
Subjects	Data
Odor	Odorless
Composition	Thermoplastic polyurethane
Skin Hazards	No hazard
Chemical Stability	Stable under normal storage and handling conditions
Solubility	Insoluble in water
Resistance to Acid	Not resistant
Resistance to Alkali	Not resistant
Resistance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

• Specimen Test

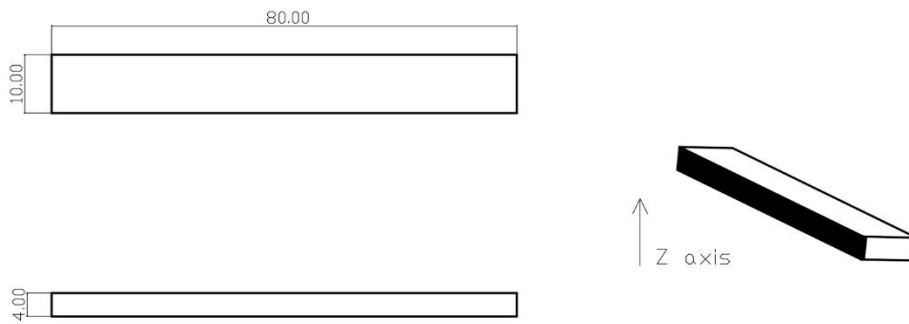
Specimen Printing Conditions	
Subjects	Data
Nozzle Temperature	230 °C
Bed Temperature	35 °C
Printing Speed	130 mm/s
Infill Density	100%

All the specimens were printed at the following settings: Nozzle Temperature = 230 °C, Printing Speed = 130 mm/s, Bed Temperature = 35 °C, Infill Density= 100%. All the specimens were annealed and dried at 70 °C for 12 h before testing. It's not recommended to anneal prints of TPU, or prints with not very simple shape and structure can deform obviously. When drying the filament and annealing the prints, it's required to use an oven that has big enough inside volume and can provides even temperature distribution, such as a blast drying oven (forced-air drying oven), and the filament and prints need to be away from the heater, and a micro-wave oven or kitchen oven is not compatible, otherwise the filament and prints can get damaged.

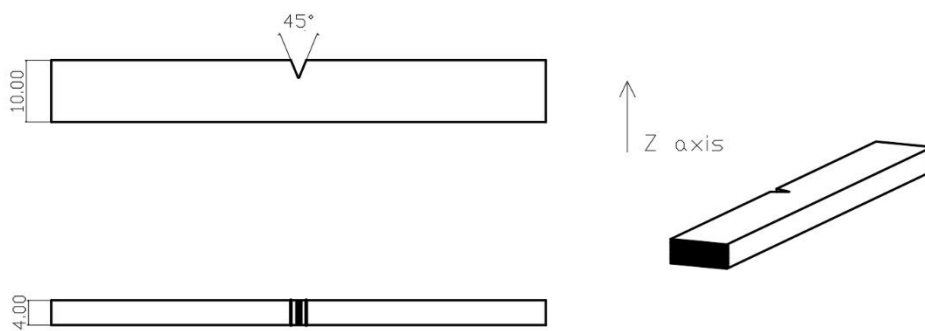
1. Tensile Testing



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.