



## Bambu Filament

Technical Data Sheet V2.0

# ASA

### • Basic Info

**Bambu ASA** is a highly durable material that offers exceptional UV, weather, mechanical, and thermal resistance. Its unique combination of properties makes it an ideal material for printing outdoor models (plant signs, mailboxes, wind vanes, etc.) and structural parts that require long-term exposure to challenging outdoor conditions.

### • 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	80 °C, 8 hours
Printing and Storage Humidity	< 20% RH (Sealed, with desiccant)
Nozzle Temperature	240 - 270 °C
Bed Type	Engineering Plate, High Temperature Plate or Textured PEI Plate
Bed Surface Preparation	Glue
Bed Temperature	80 - 100 °C
Cooling Fan	0 - 80%
Printing Speed	< 250 mm/s
Retraction Length	0.8 - 1.4 mm
Retraction Speed	20 - 40 mm/s
Chamber Temperature	45 - 60 °C
Max Overhang Angle	~ 70°
Max Bridging Length	~ 40 mm

## • Properties

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

Physical Properties		
Subjects	Testing Methods	Data
Density	ISO 1183	1.05 g/cm <sup>3</sup>
Melt Index	260 °C, 2.16 kg	7.0 ± 0.8 g/10 min
Melting Temperature	DSC, 10 °C/min	210 °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	106 °C
Heat Deflection Temperature	ISO 75 1.8 MPa	92 °C
Heat Deflection Temperature	ISO 75 0.45 MPa	100 °C
Saturated Water Absorption Rate	25 °C, 55% RH	0.45%

Mechanical Properties (Dry state)		
Subjects	Testing Methods	Data
Young's Modulus (X-Y)	ISO 527, GB/T 1040	2450 ± 270 MPa
Young's Modulus (Z)	ISO 527, GB/T 1040	2120 ± 260 MPa
Tensile Strength (X-Y)	ISO 527, GB/T 1040	52 ± 5 MPa
Tensile Strength (Z)	ISO 527, GB/T 1040	35 ± 4 MPa
Breaking Elongation Rate (X-Y)	ISO 527, GB/T 1040	9.2 ± 1.4 %
Breaking Elongation Rate (Z)	ISO 527, GB/T 1040	4.6 ± 0.8 %
Bending Modulus (X-Y)	ISO 178, GB/T 9341	1920 ± 130 MPa
Bending Modulus (Z)	ISO 178, GB/T 9341	1650 ± 120 MPa
Bending Strength (X-Y)	ISO 178, GB/T 9341	74 ± 4 MPa
Bending Strength (Z)	ISO 178, GB/T 9341	42 ± 3 MPa
Impact Strength (X-Y)	ISO 179, GB/T 1043	41.0 ± 2.3 kJ/m <sup>2</sup> ; 19.6 ± 1.8 kJ/m <sup>2</sup> (notched)
Impact Strength (Z)	ISO 179, GB/T 1043	4.9 ± 0.6 kJ/m <sup>2</sup>

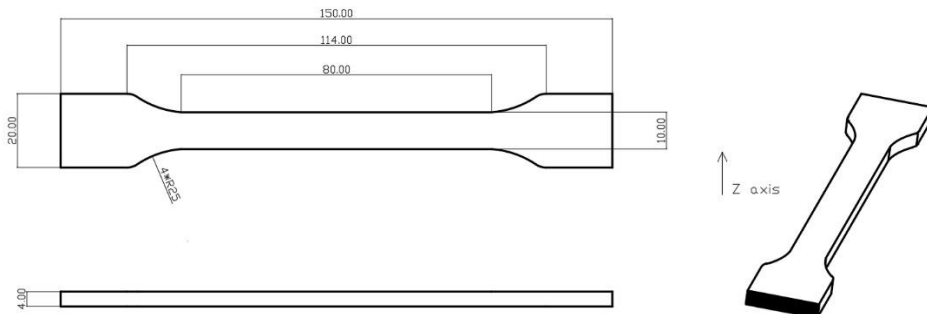
Other Physical and Chemical Properties	
Subjects	Data
Odor	Odorless
Composition	acrylonitrile - styrene - acrylate
Skin Hazards	No hazard
Chemical Stability	Stable under normal storage and handling conditions
Solubility	Insoluble in water
Resistance to Acid	Resistant
Resistance to Alkali	Resistant
Resistance to Organic Solvent	Not resistant to some organic solvents
Resistance to Oil and Grease	Not resistant to some 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**

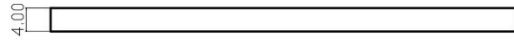
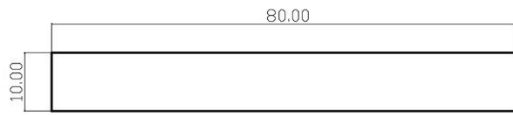
Specimen Printing Conditions	
Subjects	Data
Nozzle Temperature	260 °C
Bed Temperature	80 °C
Printing Speed	200 mm/s
Infill Density	100%

*\*All the specimens were annealed and dried at 80 °C for 12 hours before testing.*

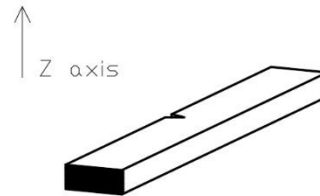
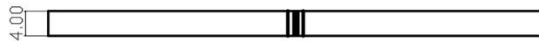
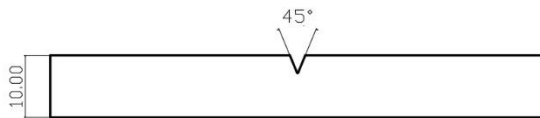
### 1. Tensile Testing



## 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.