



## Bambu Filament

Technical Data Sheet V1.0

# ABS-GF

### • Basic Info

**Bambu ABS-GF** is a glass fiber-reinforced ABS filament, enhanced in both mechanical and aesthetic properties. Compared with regular ABS, ABS-GF outperforms in strength, stiffness, temperature resistance and dimensional stability, while being less prone to deformation and warping. Glass fiber imparts a smooth matte finish with micro-spot gloss, blurring layer line. ABS-GF is ideal for both mechanical parts and decorations due to the inherited water resistance, wear resistance, durability and vibrant colors.

### • 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: 80 °C, 8 h X1 Series Printer Heatbed: 90 - 100 °C, 12 h
Printing and Storage Humidity	< 20% RH (Sealed, with desiccant)
Nozzle Size	0.4, 0.6 ( recommended ), 0.8 mm
Nozzle Temperature	240 - 280 °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	< 180 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
Support Material	Turn on

## • Properties

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

Physical Properties		
Subjects	Testing Methods	Data
Density	ISO 1183	1.08 g/cm <sup>3</sup>
Melt Index	210 °C, 2.16 kg	7.56 ± 1.4 g/10 min
Melting Temperature	DSC, 10 °C/min	202 °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	103 °C
Heat Deflection Temperature	ISO 75 1.8 MPa	88 °C
Heat Deflection Temperature	ISO 75 0.45 MPa	99 °C
Saturated Water Absorption Rate	25 °C, 55% RH	0.53%

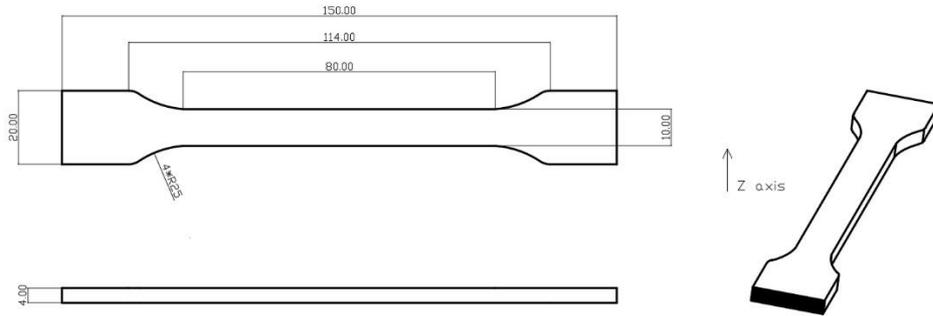
Mechanical Properties		
Subjects	Testing Methods	Data
Young's Modulus (X-Y)	ISO 527, GB/T 1040	3160 ± 170 MPa
Young's Modulus (Z)	ISO 527, GB/T 1040	2250 ± 130 MPA
Tensile Strength (X-Y)	ISO 527, GB/T 1040	36 ± 3 MPa
Tensile Strength (Z)	ISO 527, GB/T 1040	29 ± 3 MPa
Breaking Elongation Rate (X-Y)	ISO 527, GB/T 1040	6.3% ± 1.2%
Breaking Elongation Rate (Z)	ISO 527, GB/T 1040	2.3% ± 0.8%
Bending Modulus (X-Y)	ISO 178, GB/T 9341	2860 ± 130 MPa
Bending Modulus (Z)	ISO 178, GB/T 9341	1970 ± 110 MPa
Bending Strength (X-Y)	ISO 178, GB/T 9341	68 ± 4 MPa
Bending Strength (Z)	ISO 178, GB/T 9341	46 ± 3 MPa
Impact Strength (X-Y)	ISO 179, GB/T 1043	14.5 ± 1.5 kJ/m <sup>2</sup> ; 4.2 ± 1.1 kJ/m <sup>2</sup> (notched)
Impact Strength (Z)	ISO 179, GB/T 1043	5.3 ± 1.4 kJ/m <sup>2</sup>

Other Physical and Chemical Properties	
Subjects	Data
Odor	Odorless
Composition	Acrylonitrile - butadiene - styrene, glass fiber
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
Combustion Products	Water, carbon oxides, nitrogen oxides
Odor of Combustion Products	Pungent odor

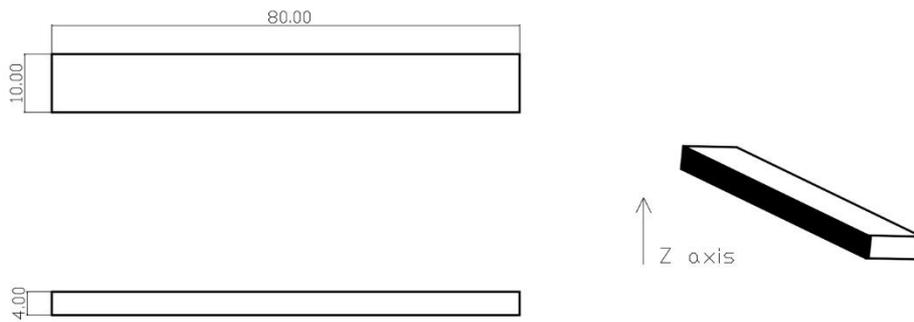
- **Specimen Test**

Specimen Printing Conditions	
Subjects	Data
Nozzle Temperature	270 °C
Bed Temperature	80 °C
Printing Speed	150 mm/s
Infill Density	100%
<p><i>* All the specimens were annealed and dried at 80 °C for 12 h before testing. And the suggested annealing temperature of models printed with Bambu ABS-GF is 80 to 90 °C, and the time is 6 to 12 hours. The annealing effect depends on the annealing temperature, time and the model itself: size, structure, infill and other printing settings; some prints may deform and warp after annealing. 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.</i></p>	

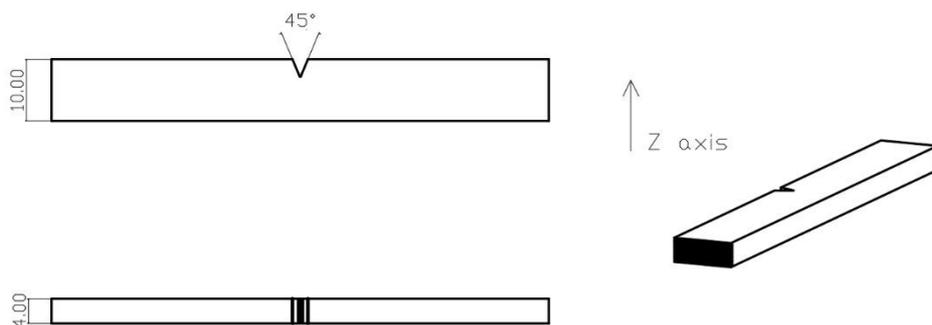
## 1. Tensile Testing



## 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.