Bambu Filament

Technical Data Sheet V3.0

PETG-CF

• Basic Info

Bambu PETG-CF is a carbon fiber reinforced PETG that offers improved performance and appearance compared to traditional PETG. The specially formulated blend minimizes the risk of warping and nozzle sticking, while still providing a smooth and consistent print quality. Addition of carbon fiber brings distinctive texture and improved strength to the material, making it ideal for high-stress models requiring premium finish. Whether you're an engineer looking to create functional prototypes, an artist looking to create high-quality models, or simply an enthusiast looking to experiment with the latest materials, Bambu PETG-CF is the ideal choice.

• Specifications

Subjects	Data
Diameter	1.75 mm
Net Filament Weight	1 kg
Spool Material	ABS (Temperature resistance 70 °C)
Spool Size	Diameter: 200 mm; Height: 67 mm

• Recommended Printing Settings

Subjects	Data
Drying Settings before Printing	Blast Drying Oven: 65 °C, 8 h X1 Series Printer Heatbed: 75 - 85 °C, 12 h
Printing and Keeping Container's Humidity	< 20% RH (Sealed, with desiccant)
Nozzle Size	0.4, 0.6, 0.8 mm
Nozzle Temperature	240 - 270 °C
Build Plate Type	Engineering Plate, High Temperature Plate or Textured PEI Plate
Build Plate Surface Preparation	Glue
Bed Temperature	65 - 75 °C
Cooling Fan	0 - 60%
Printing Speed	< 200 mm/s
Retraction Length	0.8 - 1.4 mm
Retraction Speed	30 - 60 mm/s

Chamber Temperature	35 - 50 °C
Max Overhang Angle	~ 70 °
Max Bridging Length	~ 30 mm
Support	Turn on

• Properties

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

Physical Properties		
Subjects	**Testing Methods**	**Data**
Density	ISO 1183	1.25 g/cm³
Melt Index	250 °C, 2.16 kg	19.3 ± 2.4 g/10 min
Melting Temperature	DSC, 10 °C/min	225 °C
Glass Transition Temperature	DSC, 10 °C/min	68 °C
Crystallization Temperature	DSC, 10 °C/min	N/A
Vicar Softening Temperature	ISO 306, GB/T 1633	85 °C
Heat Deflection Temperature	ISO 75 1.8 MPa	68 °C
Heat Deflection Temperature	ISO 75 0.45 MPa	74 °C
Saturated Water Absorption Rate	25 °C, 55% RH	0.30%

Mechanical Properties		
Subjects	**Testing Methods**	**Data**
Young's Modulus (X-Y)	ISO 527, GB/T 1040	2460 ± 230 MPa
Young's Modulus (Z)	ISO 527, GB/T 1040	1340 ± 150 MPa
Tensile Strength (X-Y)	ISO 527, GB/T 1040	35 ± 5 MPa
Tensile Strength (Z)	ISO 527, GB/T 1040	29 ± 4 MPa
Breaking Elongation Rate (X-Y)	ISO 527, GB/T 1040	10.4 ± 0.6 %
Breaking Elongation Rate (Z)	ISO 527, GB/T 1040	4.7 ± 0.4 %
Bending Modulus (X-Y)	ISO 178, GB/T 9341	2910 ± 260 MPa
Bending Modulus (Z)	ISO 178, GB/T 9341	1560 ± 180 MPa
Bending Strength (X-Y)	ISO 178, GB/T 9341	70 ± 5 MPa
Bending Strength (Z)	ISO 178, GB/T 9341	48 ± 4 MPa
Impact Strength (X-Y)	ISO 179, GB/T 1043	41.2 ± 2.6 kJ/m²; 15.7 ±1.6 kJ/m² (notched)
Impact Strength (Z)	ISO 179, GB/T 1043	10.7 ± 1.6 kJ/m²

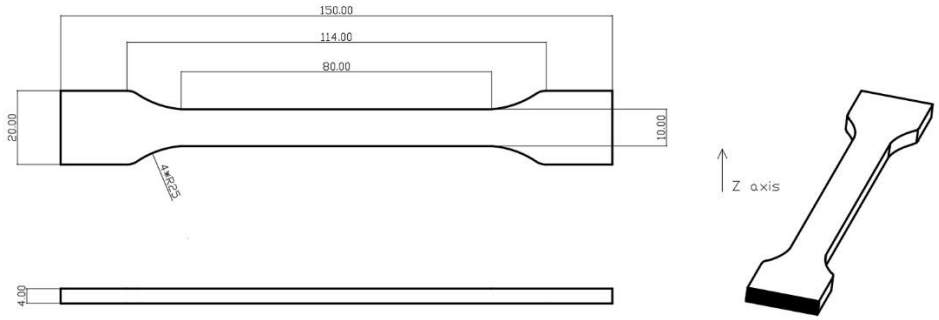
Other Physical and Chemical Properties	
Subjects	**Data**
Odor	Odorless
Composition	PETG, carbon fiber
Skin Hazards	No hazard
Chemical Stability	Stable under normal storage and handling conditions
Solubility	Insoluble in water
Resistance to Acid	Not resistant
Resistance to Alkali	Not resistant
Resistance 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
Odor of Combustion Products	Odorless

- **Specimen Test**

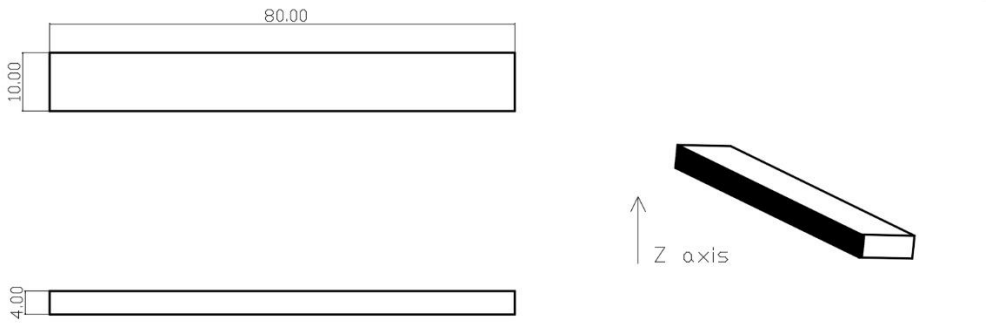
Specimen Printing Conditions	
Subjects	**Data**
Nozzle Temperature	255 °C
Bed Temperature	70 °C
Printing Speed	150 mm/s
Infill Density	100%

** All the specimens were printed at the following settings: Nozzle Temperature = 255 °C, Printing Speed = 150 mm/s, Bed Temperature = 70 °C, Infill Density = 100%. All the specimens were annealed and dried at 65 °C for 8 h before testing. And the suggested annealing temperature of models printed with Bambu PETG-CF is 55 to 60 °C, and the time is 65 to 70 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.*

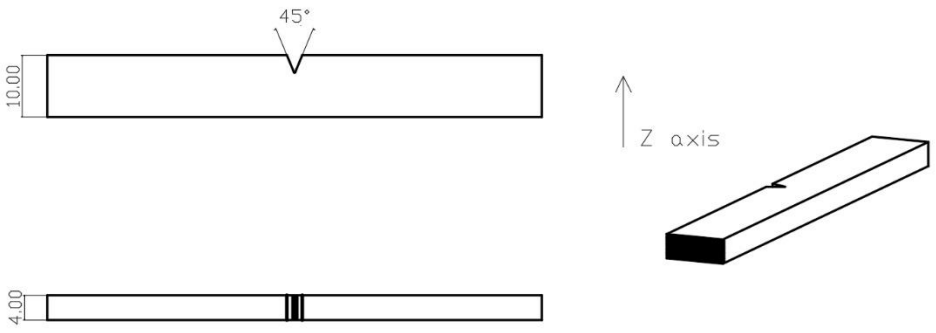
1. Tensile Testing



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.