



## Bambu Filament

Technical Data Sheet V1.0

# PETG-CF

### • Basic Info

**Bambu PETG-CF** is a custom-blended tough PLA with carbon fibers added to improve the hardness and bending modulus while still retaining the easy printing and dimensional stability of normal PLA. The resulting prints have a matte finish with almost invisible layer lines, making them ideal for prototypes of components that have to have a premium non-glossy look.

### • 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	65 °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 Texture PEI Plate
Bed Surface Preparation	PVP Glue
Bed Temperature	65 - 75 °C
Cooling Fan	100%
Printing Speed	< 200 mm/s
Retraction Length	0.6 - 1.0 mm
Retraction Speed	20 - 40 mm/s
Chamber Temperature	25 - 45 °C
Max Overhang Angle	70 °

Subjects	Data
Max Bridging Length	~ 30 mm
Support Material	/

## • 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/cm <sup>3</sup>
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 (Dry state)		
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	59 ± 4 MPa
Tensile Strength (Z)	ISO 527, GB/T 1040	38 ± 3 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	2890 ± 130 MPa
Bending Modulus (Z)	ISO 178, GB/T 9341	1680 ± 90 MPa
Bending Strength (X-Y)	ISO 178, GB/T 9341	83 ± 4 MPa
Bending Strength (Z)	ISO 178, GB/T 9341	62 ± 3 MPa
Impact Strength (X-Y)	ISO 179, GB/T 1043	41.2 ± 2.6 kJ/m <sup>2</sup> ; 15.7 ± 1.6 kJ/m <sup>2</sup> (notched)
Impact Strength (Z)	ISO 179, GB/T 1043	10.7 ± 1.6 kJ/m <sup>2</sup>

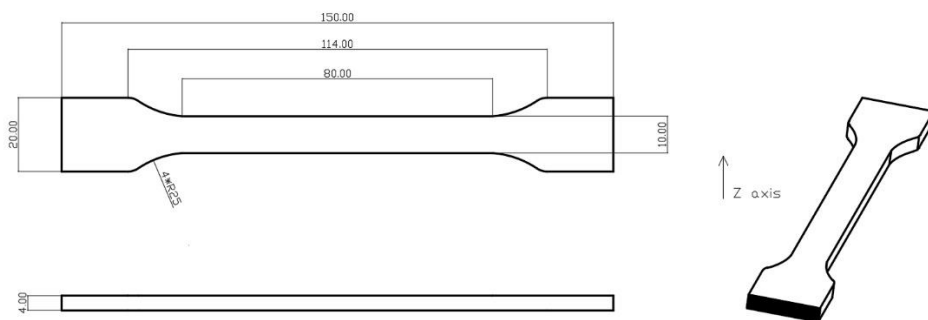
Other Physical and Chemical Properties	
Subjects	Data
Odor	Odorless
Composition	PETG, carbon fiber
Skin Hazards	No hazard
Chemical Stability	Stable under normal storage and handling conditions
Solubility	Insoluble in water
Resistance to Acid	Not resistant
Resistance to Alkali	Not resistant
Resistance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

- **Specimen Test**

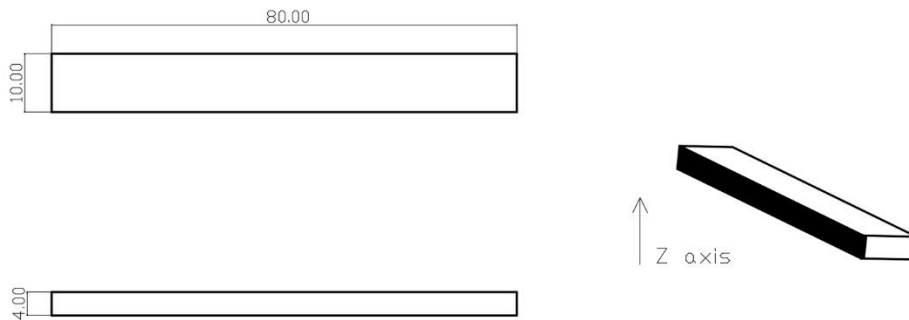
Specimen Printing Conditions	
Subjects	Data
Nozzle Temperature	255 °C
Bed Temperature	70 °C
Printing Speed	150 mm/s
Infill Density	100%

*\*All the specimens were annealed and dried at 65 °C for 8 hours before testing.*

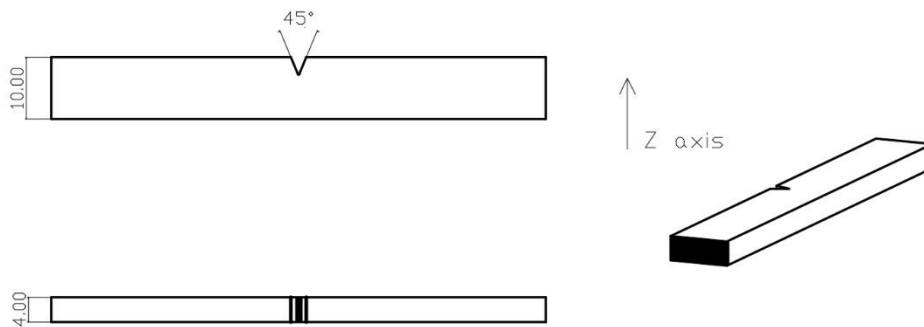
### 1. Tensile Testing



## 2. Flexural 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.