



Bambu Filament

Technical Data Sheet V1.0

PETG HF

• Basic Info

Bambu PETG HF is a fully optimized PETG filament designed specifically for high-speed printing. With a default printing speed that is twice as fast as standard PETG filaments, PETG HF takes your printing efficiency to new heights. It effectively addresses common issues such as oozing and clumping associated with regular PETG, ensuring smoother and more reliable prints. The new matte finish not only enhances the aesthetic by smoothing out uneven gloss during speed transitions but also provides a consistently uniform look. Offering greater durability and toughness than PLA, PETG HF is the ideal choice for creating long-lasting items with an improved finish and faster production times.

• 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 Storage Humidity | < 20% RH (Sealed, with desiccant) |
| Nozzle Size | 0.2, 0.4, 0.6, 0.8 mm |
| Nozzle Temperature | 230 - 260 °C |
| Bed Type | Engineering Plate, High Temperature Plate or Textured PEI Plate |
| Bed Surface Preparation | Glue |
| Bed Temperature | 65 - 75 °C |
| Cooling Fan | Turn on |
| Printing Speed | < 300 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 Material | Support for PETG |

• Properties

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

| Physical Properties | | |
|---------------------------------|--------------------|------------------------|
| Subjects | Testing Methods | Data |
| Density | ISO 1183 | 1.28 g/cm ³ |
| Melt Index | 210 °C, 2.16 kg | 28.2 ± 2.7 g/10 min |
| Melting Temperature | DSC, 10 °C/min | 214 °C |
| Glass Transition Temperature | DSC, 10 °C/min | 66 °C |
| Crystallization Temperature | DSC, 10 °C/min | N / A |
| Vicar Softening Temperature | ISO 306, GB/T 1633 | 70 °C |
| Heat Deflection Temperature | ISO 75 1.8 MPa | 62 °C |
| Heat Deflection Temperature | ISO 75 0.45 MPa | 69 °C |
| Saturated Water Absorption Rate | 25 °C, 55% RH | 0.40% |

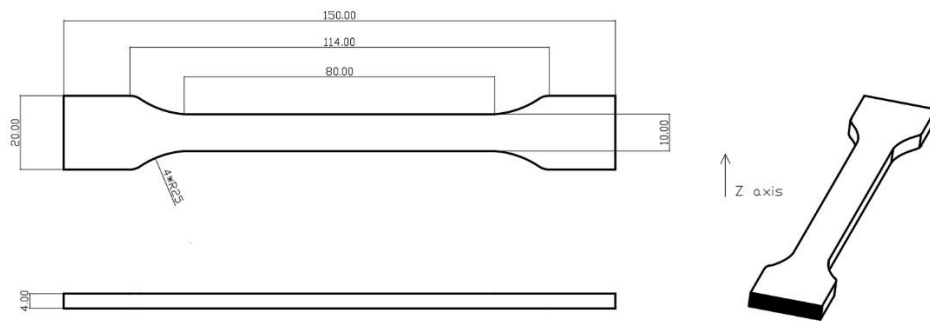
| Mechanical Properties | | |
|--------------------------------|--------------------|---|
| Subjects | Testing Methods | Data |
| Young's Modulus (X-Y) | ISO 527, GB/T 1040 | 1810 ± 190 MPa |
| Young's Modulus (Z) | ISO 527, GB/T 1040 | 1540 ± 130 MPa |
| Tensile Strength (X-Y) | ISO 527, GB/T 1040 | 34 ± 4 MPa |
| Tensile Strength (Z) | ISO 527, GB/T 1040 | 23 ± 4 MPa |
| Breaking Elongation Rate (X-Y) | ISO 527, GB/T 1040 | 8.6 ± 1.2 % |
| Breaking Elongation Rate (Z) | ISO 527, GB/T 1040 | 5.1 ± 0.8 % |
| Bending Modulus (X-Y) | ISO 178, GB/T 9341 | 2050 ± 120 MPa |
| Bending Modulus (Z) | ISO 178, GB/T 9341 | 1810 ± 140 MPa |
| Bending Strength (X-Y) | ISO 178, GB/T 9341 | 64 ± 3 MPa |
| Bending Strength (Z) | ISO 178, GB/T 9341 | 48 ± 4 MPa |
| Impact Strength (X-Y) | ISO 179, GB/T 1043 | 31.5 ± 2.2 kJ/m ² ; 6.2 ± 1.8 kJ/m ² (notched) |
| Impact Strength (Z) | ISO 179, GB/T 1043 | 7.6 ± 0.7 kJ/m ² |

| Other Physical and Chemical Properties | |
|--|---|
| Subjects | Data |
| Odor | Odorless |
| Composition | PETG |
| 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 |

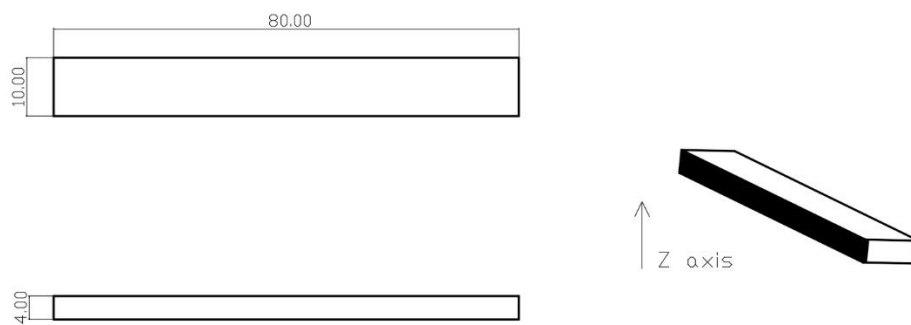
- **Specimen Test**

| Specimen Printing Conditions | |
|---|----------|
| Subjects | Data |
| Nozzle Temperature | 255 °C |
| Bed Temperature | 70 °C |
| Printing Speed | 200 mm/s |
| Infill Density | 100% |
| <p><i>* All the specimens were printed at the following settings: Nozzle Temperature = 255 °C, Printing Speed = 200 mm/s, Bed Temperature = 70 °C, Infill Density = 100%. All the specimens were annealed and dried at 75 °C for 8 h before testing. It's not recommended to anneal prints of PETG HF, because only very limited promotion of properties can obtain while prints with not very simple shape and structure may deform obviously. If you do want to anneal them, the suggested temperature is 75 to 80 °C, and the time is 4 to 8 hours. 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> | |

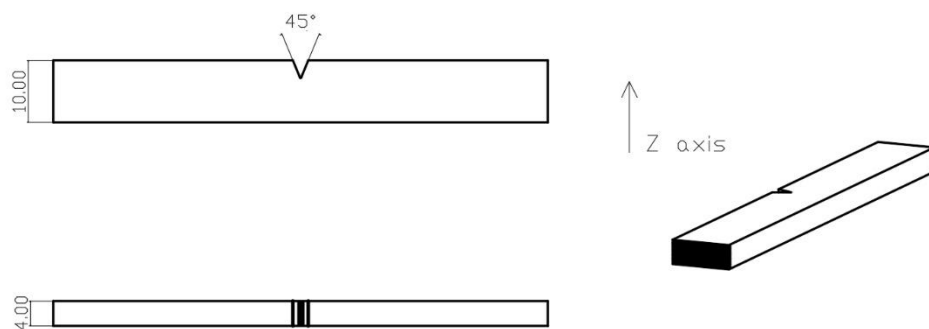
1.Tensile Testing



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.