



Bambu Filament

Technical Data Sheet V1.0

PLA Silk

• Basic Info

Bambu PLA Silk offers a silk-like and high-glossy that adds a luxury appearance to your prints while retaining PLA's ease of use. Different with other silk filaments, Bambu PLA Silk was toughened and demonstrates greater resistance to breakage when using AMS printing. Bambu PLA Silk is ideal for decorations, artistic projects, and 3D character models or any parts where you want it shinier.

• 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 | 55 °C, 8 h |
| Printing and Storage Humidity | < 20% RH (Sealed with desiccant) |
| Nozzle Temperature | 210 - 240 °C |
| Bed Type | Cool Plate, High Temperature Plate or Textured PEI Plate |
| Bed Surface Preparation | PVP Glue |
| Bed Temperature | 35 - 45 °C |
| Cooling Fan | Turn on |
| Printing Speed | < 250 mm/s |
| Retraction Length | 0.6 - 1.0 mm |
| Retraction Speed | 20 - 40 mm/s |
| Chamber Temperature | 25 - 45 °C |
| Max Overhang Angle | 55 ° |
| Max Bridging Length | ~ 30 mm |
| Support Material | Support for PLA |

• Properties

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

| Physical Properties | | |
|---------------------------------|--------------------|------------------------|
| Subjects | Testing Methods | Data |
| Density | ISO 1183 | 1.32 g/cm ³ |
| Melt Index | 210 °C, 2.16 kg | 20.5 ± 1.2 g/10 min |
| Melting Temperature | DSC, 10 °C/min | 152 °C |
| Glass Transition Temperature | DSC, 10 °C/min | 57 °C |
| Crystallization Temperature | DSC, 10 °C/min | N / A |
| Vicar Softening Temperature | ISO 306, GB/T 1633 | 56 °C |
| Heat Deflection Temperature | ISO 75 1.8 MPa | 50 °C |
| Heat Deflection Temperature | ISO 75 0.45 MPa | 53 °C |
| Saturated Water Absorption Rate | 25 °C, 55% RH | 0.52% |

| Mechanical Properties | | |
|--------------------------------|--------------------|---|
| Subjects | Testing Methods | Data |
| Young's Modulus (X-Y) | ISO 527, GB/T 1040 | 2470 ± 230 MPa |
| Young's Modulus (Z) | ISO 527, GB/T 1040 | 1390 ± 120 MPa |
| Tensile Strength (X-Y) | ISO 527, GB/T 1040 | 35 ± 3 MPa |
| Tensile Strength (Z) | ISO 527, GB/T 1040 | 18 ± 2 MPa |
| Breaking Elongation Rate (X-Y) | ISO 527, GB/T 1040 | 3.5 ± 0.6 % |
| Breaking Elongation Rate (Z) | ISO 527, GB/T 1040 | 1.7 ± 0.2 % |
| Bending Modulus (X-Y) | ISO 178, GB/T 9341 | 2220 ± 50 MPa |
| Bending Modulus (Z) | ISO 178, GB/T 9341 | 1880 ± 60 MPa |
| Bending Strength (X-Y) | ISO 178, GB/T 9341 | 77 ± 3 MPa |
| Bending Strength (Z) | ISO 178, GB/T 9341 | 26 ± 2 MPa |
| Impact Strength (X-Y) | ISO 179, GB/T 1043 | 24.5 ± 1.7 kJ/m ² ; 8.2 ± 0.5 kJ/m ² (notched) |
| Impact Strength (Z) | ISO 179, GB/T 1043 | 4.6 ± 1.1 kJ/m ² |

All the specimens (80*10*4 mm) were printed at the following settings: Nozzle Temperature = 230 °C, Printing Speed = 200 mm/s, Bed Temperature = 35 °C, Infill Density = 100%. All the specimens were annealed and dried at 55 °C for 8 h before testing.

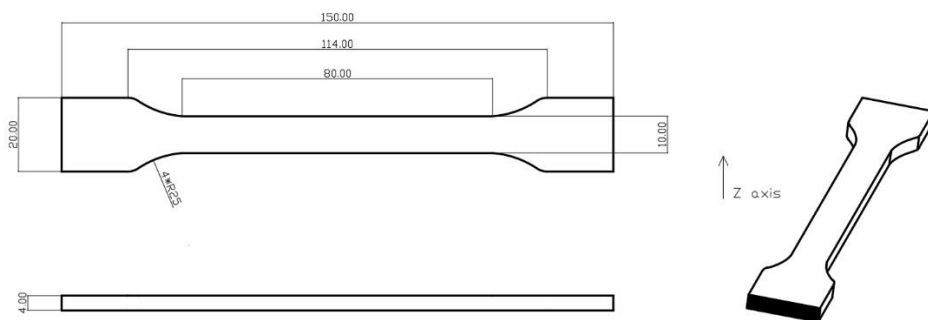
| Other Physical and Chemical Properties | |
|--|---|
| Subjects | Data |
| Odor | Odorless |
| Composition | Polylactic acid |
| Skin Hazards | No hazard |
| Chemical Stability | Stable under normal storage and handling conditions |
| Solubility | Insoluble in water |
| Resistance to Acid | Not resistant |
| 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**

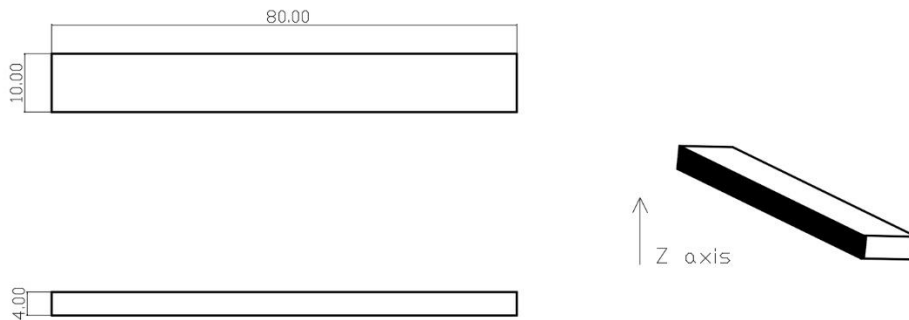
| Specimen Printing Conditions | |
|------------------------------|----------|
| Subjects | Data |
| Nozzle Temperature | 230 °C |
| Bed Temperature | 35 °C |
| Printing Speed | 200 mm/s |
| Infill Density | 100% |

**All the specimens were annealed and dried at 55 °C for 8 hours before testing.*

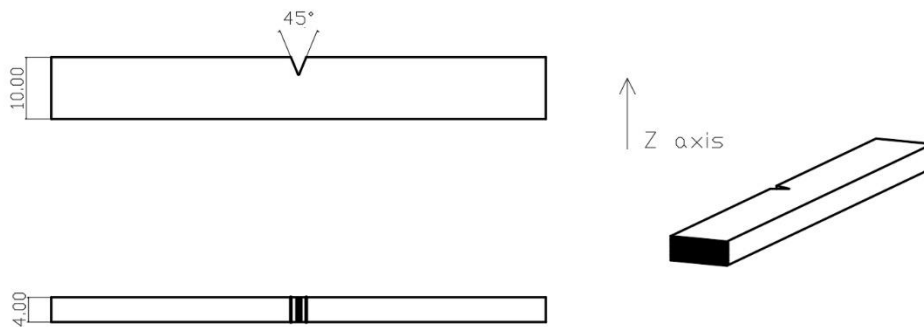
1. Tensile Testing



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.