

# Bambu Filament Guide

This filament guide offers a comprehensive comparison of properties, application, and printing requirements for Bambu filaments, aiming to help users select the best-suited material for needs. For detailed technical information, download filament Technical data sheets (TDS) on product pages

		PLA	PETG HF	ABS	ABS-GF	ASA	PC	TPU 95A HF	PLA-CF	PETG-CF	PET-CF	PAHT-CF	PA6-CF	PA6-GF	
Filament Properties	<b>Toughness</b> Impact Strength - XY	26.6 kJ/m <sup>2</sup>	31.5 kJ/m <sup>2</sup>	39.3 kJ/m <sup>2</sup>	14.5 kJ/m <sup>2</sup>	41.0 kJ/m <sup>2</sup>	34.8 kJ/m <sup>2</sup>	123.2 kJ/m <sup>2</sup>	23.2 kJ/m <sup>2</sup>	41.2 kJ/m <sup>2</sup>	36.0 kJ/m <sup>2</sup>	57.5 kJ/m <sup>2</sup>	40.3 kJ/m <sup>2</sup>	27.2 kJ/m <sup>2</sup>	
	<b>Strength</b> Bending Strength - XY	76 MPa	64 MPa	62 MPa	68 MPa	65 MPa	108 MPa	N / A	89 MPa	70 MPa	131 MPa	125 MPa	151 MPa	120 MPa	
	<b>Stiffness</b> Bending Modulus - XY	2750 MPa	2050 MPa	1880 MPa	2860 MPa	1920 MPa	2310 MPa	N / A	3950 MPa	2910 MPa	5320 MPa	4230 MPa	5460 MPa	3670 MPa	
	<b>Layer Adhesion</b> Impact Strength - Z	13.8 kJ/m <sup>2</sup>	10.6 kJ/m <sup>2</sup>	7.4 kJ/m <sup>2</sup>	5.3 kJ/m <sup>2</sup>	4.9 kJ/m <sup>2</sup>	9.0 kJ/m <sup>2</sup>	86.3 kJ/m <sup>2</sup>	7.8 kJ/m <sup>2</sup>	10.7 kJ/m <sup>2</sup>	4.5 kJ/m <sup>2</sup>	13.3 kJ/m <sup>2</sup>	15.5 kJ/m <sup>2</sup>	4.1 kJ/m <sup>2</sup>	
	<b>Heat Resistance</b> HDT, 0.45 MPa	57 °C	69 °C	87 °C	99 °C	100 °C	117 °C	N / A	55 °C	74 °C	205 °C	194 °C	186 °C	182 °C	
	<b>Saturated Water Absorption Rate</b> 25 °C, 55% RH	0.43%	0.40%	0.65%	0.53%	0.45%	0.25%	1.08%	0.42%	0.30%	0.37%	0.88%	2.35%	2.56%	
Pre-printing Preparation	<b>Dry Out Before Use</b>	Optional	<span style="background-color: green; color: white; border-radius: 5px; padding: 2px;">Required</span>	Optional	Optional	Optional	<span style="background-color: green; color: white; border-radius: 5px; padding: 2px;">Required</span>	<span style="background-color: green; color: white; border-radius: 5px; padding: 2px;">Required</span>	Optional	Optional	<span style="background-color: green; color: white; border-radius: 5px; padding: 2px;">Required</span>	<span style="background-color: green; color: white; border-radius: 5px; padding: 2px;">Required</span>	<span style="background-color: green; color: white; border-radius: 5px; padding: 2px;">Required</span>	<span style="background-color: green; color: white; border-radius: 5px; padding: 2px;">Required</span>	
	<b>Drying Condition</b>	Blast Drying Oven: 55 °C, 8 h X1 Series Heatbed: 65 - 75 °C, 12 h	Blast Drying Oven: 65 °C, 8 h X1 Series Heatbed: 75 - 85 °C, 12 h	Blast Drying Oven: 80 °C, 8 h X1 Series Heatbed: 90 - 100 °C, 12 h	Blast Drying Oven: 80 °C, 8 h X1 Series Heatbed: 90 - 100 °C, 13 h	Blast Drying Oven: 80 °C, 8 h X1 Series Heatbed: 90 - 100 °C, 12 h	Blast Drying Oven: 80 °C, 8 h X1 Series Heatbed: 90 - 100 °C, 12 h	Blast Drying Oven: 70 °C, 8 h X1 Series Heatbed: 80 - 90 °C, 12 h	Blast Drying Oven: 55 °C, 8 h X1 Series Heatbed: 65 - 75 °C, 12 h	Blast Drying Oven: 65 °C, 8 h X1 Series Heatbed: 75 - 85 °C, 12 h	Blast Drying Oven: 80 °C, 8 - 12 h X1 Series Heatbed: 90 - 100 °C, 12 h	Blast Drying Oven: 80 °C, 8 - 12 h X1 Series Heatbed: 90 - 100 °C, 12 h	Blast Drying Oven: 80 °C, 8 - 12 h X1 Series Heatbed: 90 - 100 °C, 12 h	Blast Drying Oven: 80 °C, 8 - 12 h X1 Series Heatbed: 90 - 100 °C, 12 h	
	<b>AMS Compatibility</b>	<span style="color: green;">✔</span>	<span style="color: green;">✔</span>	<span style="color: green;">✔</span>	<span style="color: green;">✔</span>	<span style="color: green;">✔</span>	<span style="color: green;">✔</span>	<span style="color: red;">✘</span>	<span style="color: green;">✔</span>	<span style="color: green;">✔</span>	<span style="color: red;">✘</span>	<span style="color: green;">✔</span>	<span style="color: red;">✘</span>	<span style="color: green;">✔</span>	
	<b>Nozzle Size/Material</b>	All Size/Material	All Size/Material	All Size/Material	0.6 mm (recommended) / 0.4 mm / 0.8 mm Hardened Steel	All Size/Material	All Size/Material	0.4 mm / 0.6 mm / 0.8 mm Hardened Steel / Stainless Steel	0.4 mm / 0.6 mm / 0.8 mm Hardened Steel	0.4 mm / 0.6 mm / 0.8 mm Hardened Steel	0.4 mm / 0.6 mm / 0.8 mm Hardened Steel	0.6 mm (recommended) / 0.4 mm / 0.8 mm Hardened Steel	0.6 mm (recommended) / 0.4 mm / 0.8 mm Hardened Steel	0.6 mm (recommended) / 0.4 mm / 0.8 mm Hardened Steel	0.6 mm (recommended) / 0.4 mm / 0.8 mm Hardened Steel
	<b>Build Plate &amp; Bed Temperature</b>	Cool Plate (35 - 55 °C) Smooth PEI Plate (55 - 65 °C) Textured PEI Plate (55 - 65 °C)	Smooth PEI Plate (60 - 80 °C) Textured PEI Plate (60 - 80 °C)	Smooth PEI Plate (90 - 100 °C) Textured PEI Plate (90 - 100 °C)	Smooth PEI Plate (90 - 100 °C) Textured PEI Plate (90 - 100 °C)	Smooth PEI Plate (90 - 100 °C) Textured PEI Plate (90 - 100 °C)	Smooth PEI Plate (90 - 100 °C) Textured PEI Plate (90 - 100 °C)	Smooth PEI Plate (30 - 45 °C) Textured PEI Plate (30 - 45 °C)	Smooth PEI Plate (45 - 65 °C) Textured PEI Plate (55 - 65 °C)	Smooth PEI Plate (60 - 80 °C) Textured PEI Plate (60 - 80 °C)	Smooth PEI Plate (70 - 100 °C) Textured PEI Plate (70 - 100 °C)	Smooth PEI Plate (100 - 120 °C) Textured PEI Plate (100 - 120 °C)	Smooth PEI Plate (100 - 120 °C) Textured PEI Plate (100 - 120 °C)	Smooth PEI Plate (100 - 120 °C) Textured PEI Plate (100 - 120 °C)	Smooth PEI Plate (100 - 120 °C) Textured PEI Plate (100 - 120 °C)
	<b>Adhesion Methods</b>	Bambu Liquid Glue Glue Stick	Bambu Liquid Glue Glue Stick	Bambu Liquid Glue Glue Stick	Bambu Liquid Glue Glue Stick	Bambu Liquid Glue Glue Stick	Glue Stick	Bambu Liquid Glue Glue Stick	Bambu Liquid Glue Glue Stick	Bambu Liquid Glue Glue Stick	Glue Stick	Glue Stick	Glue Stick	Glue Stick	Glue Stick
Printer Settings	<b>Print with Enclosure</b>	<span style="color: red;">✘</span>	<span style="color: red;">✘</span>	<span style="color: green;">✔</span>	<span style="color: green;">✔</span>	<span style="color: green;">✔</span>	<span style="color: green;">✔</span>	<span style="color: red;">✘</span>	<span style="color: red;">✘</span>	<span style="color: red;">✘</span>	<span style="color: red;">✘</span>	<span style="color: green;">✔</span>	<span style="color: green;">✔</span>	<span style="color: green;">✔</span>	
	<b>Seal with Desiccant</b>	<span style="color: red;">✘</span>	<span style="color: red;">✘</span>	<span style="color: red;">✘</span>	<span style="color: red;">✘</span>	<span style="color: red;">✘</span>	<span style="color: green;">✔</span>	<span style="color: green;">✔</span>	<span style="color: green;">✔</span>	<span style="color: green;">✔</span>	<span style="color: green;">✔</span>	<span style="color: green;">✔</span>	<span style="color: green;">✔</span>	<span style="color: green;">✔</span>	
	<b>Print Speed</b>	< 300 mm/s	< 300 mm/s	< 300 mm/s	< 180 mm/s	< 300 mm/s	< 300 mm/s	< 200 mm/s	< 250 mm/s	< 200 mm/s	< 100 mm/s	< 100 mm/s	< 100 mm/s	< 130 mm/s	
	<b>Nozzle Temperature</b>	190 - 230 °C	230 - 260 °C	240 - 280 °C	240 - 280 °C	240 - 280 °C	260 - 290 °C	220 - 240 °C	210 - 240 °C	240 - 270 °C	260 - 300 °C	260 - 300 °C	260 - 300 °C	260 - 290 °C	
	<b>Part Cooling Fan</b>	50 - 100%	0 - 80%	0 - 80%	0 - 80%	0 - 80%	0 - 60%	50 - 100%	50 - 100%	0 - 40%	0 - 40%	0 - 40%	0 - 40%	0 - 40%	
Post-printing Processes	<b>Annealing</b>	50 - 60 °C, 6 - 12 hours	N / A	80 - 90 °C, 6 - 12 hours	80 - 90 °C, 6 - 12 hours	80 - 90 °C, 6 - 12 hours	85 - 100 °C, 6 - 12 hours	N / A	55 - 60 °C, 6 - 12 hours	65 - 70 °C, 6 - 12 hours	90 - 130 °C 6 - 12 hours	90 - 130 °C 6 - 12 hours	90 - 130 °C 6 - 12 hours	90 - 130 °C 6 - 12 hours	