



BEDROCK 3D
make anything

BEDROCK 3D PP

Chemical resistant. Lightweight. Flexible and Durable.

Technical Documentation Sheet

version 1.0





Technical Data Sheet

PP

Chemical-Resistant. Lightweight. Flexible and Durable.

Designed for engineers and makers, BEDROCK 3D PP delivers high-performance prints that handle stress, strain, and chemically aggressive environments. Industrial-grade polypropylene combines strength, fatigue resistance, and chemical resilience, while remaining fully recyclable and easy to print on standard fff printers.

Filament Properties

Filament Diameter	1.75 mm	2.85 mm
Average diameter Tolerance	±0.050 mm	±0.1 mm
Average ovality	<0.050 mm	<0.050 mm
Available Spool size	750 g	750 g
Available colors	natural	

Spool Properties

Spool size	750 g	2.0 kg	4.0 kg	8.0 kg
Outer diameter	200 mm	300 mm	350 mm	355 mm
Inner diameter	50.5 mm	51.5 mm	51.7 mm	36 mm
Width	55 mm	103 mm	103 mm	167 mm

Recommended 3D-Print processing parameters

	Used for test specimens	
Printer	FFF printer	Ultimaker S5
Nozzle Temperature ¹⁾	220 - 240°C	240 °C
Build Chamber Temperature	-	-
Bed Temperature	60 - 80°C	80°C
Bed Material	PP adhesive or tape	Glass + magigoo PP
Nozzle Diameter	≥ 0.4 mm	0.4 mm

¹ Fast printing might require an additional increase of the nozzle temperature; the stated printing speed is based on current validations. As equipment and technology continues to evolve, it is possible that even higher printing speeds may be attainable in the future.



Print Speed	20 - 50 mm/s	40 mm/s
Max Volumetric Speed ²⁾	8 mm ³ /s	//

Please check your standard and/or high speed print profile availability for an easy start at www.bedrock3d.com.

Further Recommendations

Drying recommendations to ensure printability and best mechanical properties ³⁾	60 °C in a hot air dryer or vacuum oven for 4 to 16 hours
Support material compatibility	Single material breakaway
Warehousing	BEDROCK 3D PP filament should be stored at 15 - 25°C in its originally sealed package in a clean and dry environment. If the recommended storage conditions are observed the products will have a minimum shelf life of 12 months.

General Properties	Standard	Average Values
Filament Density ⁴⁾	ISO 1183-1	901 kg/m ³

Tensile Properties ⁵⁾	Standard	Average Values		
		XY-Direction	XZ-Direction	ZX-Direction
Tensile strength ⁶⁾	ISO 527	15.5 MPa	-	9.0 MPa
Elongation at Break ⁶⁾	ISO 527	118.6 %	-	5.4 %
Young's Modulus ⁷⁾	ISO 527	541 MPa	-	435 MPa

² Based on Bambu Lab X1C with a nozzle diameter of 0.4 mm

³ Please note: To ensure constant material properties the material should always be kept dry.
⁴ measured on filament

⁵ Samples were conditioned in standard climate (23°C, 50% RH 72h)

⁶ Testing speed: 5 mm/min

⁷ Testing speed: 1 mm/min



Flexural Properties ^{6) 8)}	Standard	Average Values		
		XY-Direction	XZ-Direction	ZX-Direction
Flexural Strength	ISO 178	22.9 MPa	21.4 MPa	15.6 MPa
Flexural Modulus	ISO 178	575 MPa	494 MPa	380 MPa
Flexural Elongation at Break	ISO 178	9.4 %	8.8 %	7.9 %

Impact Properties ⁶⁾	Standard	Average Values		
		XY-Direction	XZ-Direction	ZX-Direction
Impact Strength Charpy (notched)	ISO 179-2	5.3 kJ/m ²	8.3 kJ/m ²	2.5 kJ/m ²
Impact Strength Charpy (unnotched)	ISO 179-2	41.8 kJ/m ²	62.3 kJ/m ²	13.6 kJ/m ²
Impact Strength Izod (notched)	ISO 180	5.3 kJ/m ²	10.6 kJ/m ²	2.3 kJ/m ²
Impact Strength Izod (unnotched)	ISO 180	37.7 kJ/m ²	37.6 kJ/m ²	11.6 kJ/m ²

Thermal Properties ⁶⁾	Standard	Average Values
HDT A at 1.8 MPa	ISO 75-2	49 °C
HDT B at 0.45 MPa	ISO 75-2	69 °C
Vicat softening point at 50 N	ISO 306	61 °C
Vicat softening point at 10 N	ISO 306	106 °C
Crystalization Temperature	ISO 11357-3	83 °C
Melting Temperature	ISO 11357-3	131 °C
Melt Volume-Flow Rate (MVR)	ISO 1133	6.7 cm ³ /10 min (230 °C, 2.16 kg)

⁸ Testing speed: 2 mm/min
Measured on milled specimens



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Melt Mass-Flow Rate (MFR)	ISO 1133	4.8 g/10 min (X°C, X kg)
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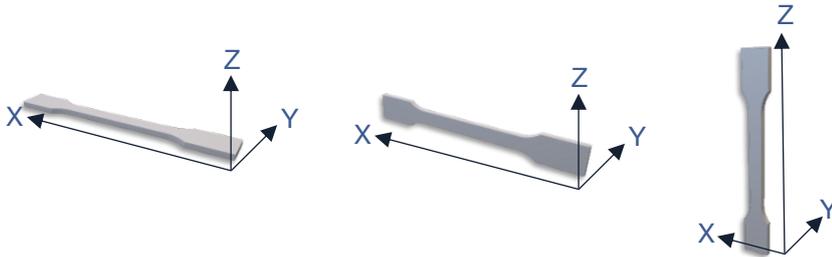


Hardness and Abrasion	Standard	Typical Values
Shore Hardness D (15s)	DIN ISO 7619-1	52

Biocompatibility	Standard	Typical Values
Cytotoxicity - Neutral Red	ISO 10993-5 (2009)	PASS
In Vivo Sensitization - Local Lymph Node Assay	ISO 10993-10 (2013)	PASS
In Vitro Skin Irritation	ISO 10993-10 (2013)	PASS

Print direction explanation

The orientation of the 3D printed part in the printer is always aligned with the longest axis first. The print direction is consistently along the Z-axis.





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The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed. Values in this document are average values, measured and calculated according to the instructions in the listed standards. The used specimens are produced with the Fused Filament Fabrication method. Measured values can vary depending on used print orientation and print parameters.

Please contact us for further product information, like for example REACH, RoHS, FCS.

The safety data given in this publication is for informational purposes only and does not constitute a legally binding MSDS. The relevant MSDS can be obtained upon request from your supplier or you may contact Forward AM Technologies Netherlands B.V. directly at customerservice@bedrock3d.com

Process materials in a well-ventilated room, or use professional extraction systems.