



# BEDROCK 3D ABS Fusion+

Optimized ABS. Precise and Reliable.

Professional Use. Compatible with Water Soluble Support BVOH.

## Technical Documentation Sheet

version 1.0





## Technical Data Sheet

### ABS Fusion+

Optimized ABS. Precise and Reliable. Professional Use. Compatible with Water Soluble Support BVOH.

BEDROCK 3D ABS Fusion+ is an engineering-grade filament optimized for smooth, reliable printing by significantly reducing warping. Developed for automotive purposes where parts need to perform under stress, this filament combines the trusted strength of ABS, a high-quality thermoplastic with optimized printability, making it ideal for demanding professional projects.

#### Filament Properties

Filament Diameter	1.75 mm	2.85 mm
Diameter Tolerance	±0.050 mm	±0.1 mm
Average ovality	<0.050 mm	<0.050 mm
Available Spool size	750 g, 2.0 kg, 4.0 kg	750 g, 2.0 kg, 4.0 kg
Available colors	Natural, Black, Grey	

#### 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 <sup>1)</sup>	260 – 280 °C	280 °C
Build Chamber Temperature	-	-
Bed Temperature	100 – 120 °C	100 °C

<sup>1)</sup> 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.



Bed Material	Glass*	Glass + glue (e.g. 3D Lac)
Nozzle Diameter	≥ 0.4 mm	0.4 mm
Print Speed	40 - 80 mm/s	40 mm/s
Max Volumetric Speed <sup>2)</sup>	21 mm <sup>3</sup> /s	//

Please check your standard and/or high speed print profile availability for an easy start at [www.bedrock3d.com](http://www.bedrock3d.com).

<sup>2)</sup> Based on Bambu Lab X1C with a nozzle diameter of 0.4 mm

**Further Recommendations**

Drying recommendations to ensure printability and best mechanical properties<sup>3)</sup>

Support material compatibility	Single material breakaway, BEDROCK 3D BVOH
--------------------------------	--

Warehousing

BEDROCK 3D ABSF 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 <sup>4)</sup>	ISO 1183-1	1084 kg/m <sup>3</sup>
Poisson-Number	ISO 527	0.41

<sup>3</sup> Please note: To ensure constant material properties the material should always be kept dry.

<sup>4</sup> measured on filament



Tensile Properties <sup>5)</sup>	Standard	Average Values		
		XY-Direction	XZ-Direction	ZX-Direction
Tensile strength <sup>6)</sup>	ISO 527	28.3 MPa	-	20.7 MPa
Elongation at Break <sup>6)</sup>	ISO 527	7.0 %	-	1.8 %
Young's Modulus <sup>7)</sup>	ISO 527	1445 MPa	-	1349 MPa

Flexural Properties <sup>6) 8)</sup>	Standard	Average Values		
		XY-Direction	XZ-Direction	ZX-Direction
Flexural Strength	ISO 178	46.6 MPa	48.7 MPa	26.5 MPa
Flexural Modulus	ISO 178	1390 MPa	1290 MPa	1170 MPa
Flexural Elongation at Break	ISO 178	5.3 %	5.4 %	2.3 %

Impact Properties <sup>6)</sup>	Standard	Average Values		
		XY-Direction	XZ-Direction	ZX-Direction
Impact Strength Charpy (notched)	ISO 179-2	38.6 kJ/m <sup>2</sup>	49.2 kJ/m <sup>2</sup>	3.0 kJ/m <sup>2</sup>
Impact Strength Charpy (unnotched)	ISO 179-2	148.1 kJ/m <sup>2</sup>	173.7 kJ/m <sup>2</sup>	8.6 kJ/m <sup>2</sup>
Impact Strength Izod (notched)	ISO 180	36.9 kJ/m <sup>2</sup>	41.8 kJ/m <sup>2</sup>	3.1 kJ/m <sup>2</sup>
Impact Strength Izod (unnotched)	ISO 180	128.3 kJ/m <sup>2</sup>	127.0 kJ/m <sup>2</sup>	8.3 kJ/m <sup>2</sup>

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

<sup>6</sup> Testing speed: 5 mm/min

<sup>7</sup> Testing speed: 1 mm/min

<sup>8</sup> Testing speed: 2 mm/min

Measured on milled specimens

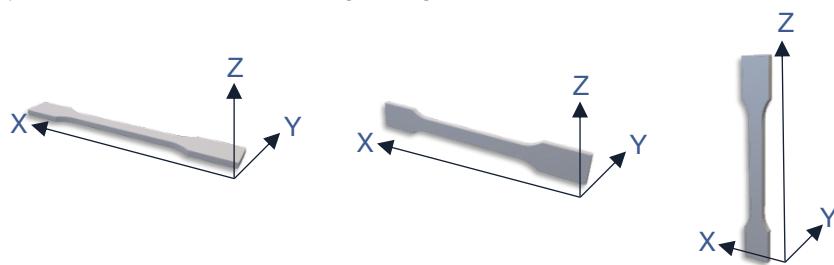


Thermal Properties <sup>6)</sup>	Standard	Average Values
HDT A at 1.8 MPa	ISO 75-2	75 °C
HDT B at 0.45 MPa	ISO 75-2	96 °C
Vicat softening point at 50 N	ISO 306	78 °C
Vicat softening point at 10 N	ISO 306	103 °C
Glass Transition Temperature	ISO 11357-2	109 °C
Melt Volume-Flow Rate (MVR)	ISO 1133	4.7 cm <sup>3</sup> /10 min (250 °C, 5 kg)

Hardness and Abrasion	Standard	Typical Values
Shore Hardness D (15s)	DIN ISO 7619-1	67

## 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.





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](mailto:customerservice@bedrock3d.com)

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