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BEDROCK 3D PC/ABS FR

Flame-Retardant. Technical and Electronical needs. Strong. Reliable. Certified.

Technical Documentation Sheet

version 1.0

Technical Data Sheet

PC/ABS FR

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BEDROCK 3D PC/ABS FR is a premium blend of polycarbonate and ABS, enhanced with a halogen-free flame retardant. It combines the toughness and thermal resistance, delivering high-performance parts that meet strict safety standards. A perfect fit for technical and electronical needs.

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, 2.0 kg	750 g
Available colors	black	

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)]	260 – 280°C	270°C
Build Chamber Temperature	Closed Chamber, passively heated	Closed Chamber, passively heated
Bed Temperature	90 – 110°C	100°C
Bed Material	Glass/PEI + PC Adhesive	Glass + Magigoo PC

[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.

Nozzle Diameter	≥ 0.4 mm	0.4 mm
Print Speed	30 - 300 mm/s	40 mm/s
Max Volumetric Speed[2)]	28 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)]	PC/ABS FR Black can be dried at 60°C in a hot air dryer or vacuum oven for 4 to 16 hours
Support material compatibility	Single material breakaway
Warehousing	BEDROCK 3D PC/ABS FR Black 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	1193 kg/m^3

Tensile Properties[5)]	Standard	Average Values		
		XY-Direction	XZ-Direction	ZX-Direction
Tensile strength[6)]	ISO 527	50.1 MPa	-	17.3 MPa
Elongation at Break[6)]	ISO 527	10.7%	-	0.8%
Young's Modulus[7)]	ISO 527	2545 MPa	-	2188 MPa

Flexural Properties[6) 8)]	Standard	Average Values

[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

[8] Testing speed: 2 mm/min

Measured on milled specimens

		XY-Direction	XZ-Direction	ZX-Direction
Flexural Strength	ISO 178	88.1 MPa	90.6 MPa	24.7 MPa
Flexural Modulus	ISO 178	2550 MPa	2200 MPa	1810 MPa
Flexural Elongation at Break	ISO 178	5.6%	6.1%	1.3%

Impact Properties[6)]	Standard	Average Values		
		XY-Direction	XZ-Direction	ZX-Direction
Impact Strength Charpy (notched)	ISO 179-2	13.3 kJ/m^2	31.2 kJ/m^2	0.9 kJ/m^2
Impact Strength Charpy (unnotched)	ISO 179-2	49.8 kJ/m^2	65.4 kJ/m^2	2.9 kJ/m^2
Impact Strength Izod (notched)	ISO 180	16.8 kJ/m^2	28.4 kJ/m^2	1.8 kJ/m^2
Impact Strength Izod (unnotched)	ISO 180	57.0 kJ/m^2	87.9 kJ/m^2	3.0 kJ/m^2

Thermal Properties[6)]	Standard	Average Values
HDT A at 1.8 MPa	ISO 75-2	81°C
HDT B at 0.45 MPa	ISO 75-2	89°C
Vicat softening point at 50 N	ISO 306	90°C
Vicat softening point at 10 N	ISO 306	97°C
Glass Transition Temperature	ISO 11357-2	94°C
Melting Temperature	ISO 11357-3	227°C
Melt Volume-Flow Rate (MVR)	ISO 1133	46.6 cm^3/10 min (260°C, 5 kg)
Melt Mass-Flow Rate (MFR)	ISO 1133	48.4 g/10 min (260°C, 5 kg)

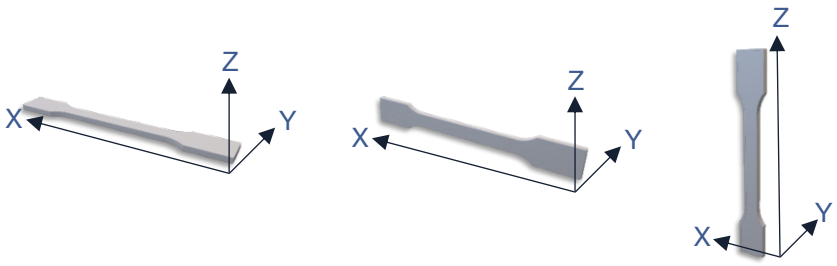
Fire, Smoke, Toxicity (FST) properties[6)]	Standard	Average Values

Fire protection on railway vehicles	EN45545-2-2016	R26 HL1-3 (1.5 mm) R26 HL1-3 (3.0 mm)
Flame class rating	UL 94	V-0 (1.5 mm) V-0 (3.0 mm)
Glow wire test (GWEPT)	IEC 60695-2-11	725°C (1.5 mm) 960°C (3.0 mm)

Electrical Properties[6)]	Standard	Average Values		
		X-Direction	Z-Direction	Y-Direction
Dielectric Strength (orthogonal)	IEC 60243-1	33 [kV/mm]	-	24 [kV/mm]
Volume Resistivity	IEC 62631-3-1	3.20E+14 [Ω cm]	-	6.00E+15 [Ω cm]
Surface resistivity	IEC 62631-3-2	5.50E+12 [Ω]	-	9.30E+15 [Ω]
Comparative Tracking Index	IEC 60112	325-0.7	-	300-0.7

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

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