Technical Data Sheet

BFI3D Premium ABS Filament

Identification	
Chemical name	Acrylonitrile Butadiene Styrene
Use	Additive Manufacturing

Filament Specification	
Diameter 1.75	1.75 ± 0.05 mm
"Verify your spool" option	YES

Material properties		
Melt Flow Rate[1]	21 g/10 min	ASTM D1238
Melt temperature	210-240°C	-
Density	1.05 g/cm^3	ASTM D792
Vicat softening temperature (5kg, 50°C/h)	92°C	ASTM D1525
Heat deflection temperature (6.4mm / 18.6kg)	85°C	ASTM D648
Solubility	Acetone	-
Odor	Little odor	-
Storage	Avoid fire and temperatures exceeding 60°C	-

[1]Test conditions: T = 220°C; m = 10 kg

Guideline for print settings*	
Nozzle temperature	230-255°C
Bed temperature	100°C
Active cooling fan	YES (up to 100%)
Layer height**	0.05 - 0.35 mm
Shell thickness**	0.40 – 1.60 mm
Print speed**	40 – 100 mm/s

*Settings are based on a 0,4 mm nozzle.

** The range depends on the geometrical complexity

Mechanical properties	Tensile test		Test Method ASTM D638	
	Printed vertical (Z-axis)		Printed horizontal (X, Y-axis)	
Infill	50 %	100 %	50 %	100 %
Tensile strength (MPa)	12,6	16,2	15,8	23,8
Force at break (MPa)	12,6	16,2	15,7	23,6
Elongation at max force (%)	4,0	3,9	8,8	5,3
Elongation at break (%)	4,0	3,9	11,0	13,3
Emodulus (MPa)	313,3	428,7	307,8	453,8
All specimens were printed using the BLIXET B100 Multi 3D printer using following parameters: Nozzle temperature: 250°C Bed temperature: 100°C Printing speed: 45mm/s Number of shells: 4 Infill type: lattice Infill under: 45°				

Mechanical properties	Impact test		Test Method ISO 179	
	Charpy - Printed vertical (Z-axis)		Charpy - Printed horizontal (X, Y-axis)	
Infill	50%	100%	50%	100%
Impact strength (J/cm^2)	2,59	4,61	1,38	1,70
Impact energy (mJ)	1000	1900	600	700
All specimens were printed using the BLIXET B100 Multi 3D printer using following parameters: Nozzle temperature: 250°C Bed temperature: 100°C Printing speed: 45mm/s Number of shells: 4 Infill type: lattice Infill under: 45°				

Mechanical properties	Flexural test		Test Method ISO 178	
	Printed vertical (Z-axis)		Printed horizontal (X, Y-axis)	
Infill	50%	100%	50%	100%
Flexural modulus (MPa)	1429	1490	1682	2157
Maximum bending stress (MPa)	2,39	23,48	43,75	63,64
Deflection (mm)	0,8	11	1,5	10,5
All specimens were printed using the BLIXET B100 Multi 3D printer using following parameters: Nozzle temperature: 250°C Bed temperature: 100°C Printing speed: 45mm/s Number of shells: 4 Infill type: lattice Infill under: 45°				

Preparation date: 08-05-2019

All shown data are typical properties. Users should confirm results by their own tests.