

Technical Data Sheet

Flexible Filament

Flexible is an FFF 3D printing filament, which is produced using PBAT, a biodegradable material known for its safety and environmental friendliness. Flexible filament has excellent flexibility and good fluidity. It offers good dimensional stability, no warping, no cracking and strong layer adhesion, with the ability to be printable on various FFF 3D printers.

Features:

Flexibility/Dimensional stability/Easy to print

Properties:

Physical Properties	Test Method	Units	Typical Value
Density	ISO 1183	g/cm ³	1.25~1.26
Melt Flow Rate (MFR) (190°C/2.16Kg)	ISO 1133	g/10min	6~10
Water Absorption (23°C/24h)	ISO 62	%	< 0.5
Mechanical Properties			
Tensile Strength (X-Y)	ISO 527	Mpa	27~28
Elongation at Break (X-Y)	ISO 527	%	400~600
Modulus of Elasticity (X-Y)	ISO 527	Mpa	6~7
Bending Strength (X-Y)	ISO 178	Mpa	7~9
Izod Impact Strength (X-Y)	ISO 180	KJ/m ²	NB
Thermal Properties			
HDT@ 0.455 MPa (66 psi)	ISO 75	°C	90
Continuous Service Temperature	IEC 60216	°C	85

Testing Specimen Printing Conditions:

Test Equipment	Adventurer 5M (Flashforge)
Nozzle Diameter	0.6mm
Nozzle Temperature	230 °C
Printing Speed	150mm/s
Wall Thickness	1.2mm
Infill	100%
Standard Testing Specimen	Specific dimensions are shown in Attachment 1

Recommended Printing Conditions:

Parameter	
Nozzle Temperature	200~240°C (230°C recommended)
Build Platform Temperature	Room temperature~60°C (40°C recommended)
Build Surface Material	Tempered glass, BuildTak, Carbon fiber plate
Nozzle Diameter	φ0.4/0.6mm (φ0.6mm recommended)
Cooling Fan	50~100%
Layer Thickness	0.2~0.3mm
Printing Speed	30~150mm/s (60mm/s recommended)
Travel Speed	60~120mm/s
Ambient Temperature for Printing	Room temperature~40°C
Retraction Distance	0.3~1mm
Retraction Speed	30~50mm/s
Support Material	Self-supporting, PVA, BVOH

Cautions:

In order to prevent moisture absorption and contamination, supplied packaging should be kept closed and undamaged. For the same reason, partially used filaments should be re-sealed before storage.

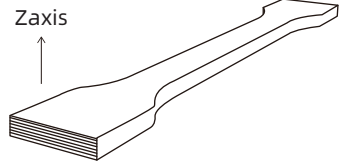
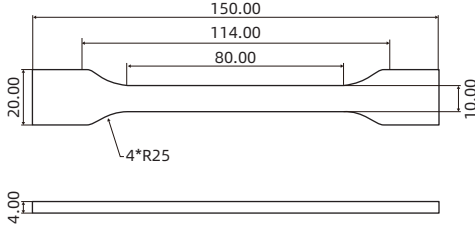
PBAT is a polymer material. Exposure to moisture, oxygen in the air, and UV light will accelerate its aging. In order not to affect the final printing quality, the Flexible filament after its package being opened should be used up as soon as possible.

If issues like bubbles or severe stringing occur during printing Flexible filament, please dry the filament in a hot dry air oven at 60°C for at least 5 hours before use.

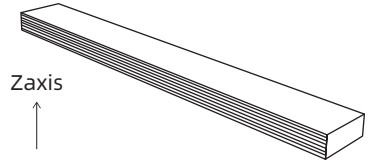
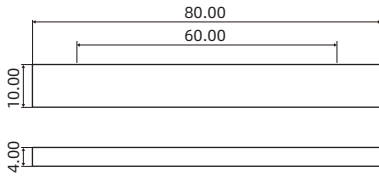
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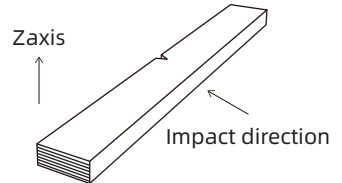
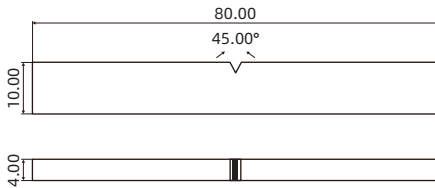
Attachment 1: Testing Specimen Size and Printing Direction



Tensile testing specimen; ASTM D638 (ISO 527, GB/T 1040)



Flexural testing specimen; ASTM D790 (ISO 178, GB/T 9341)



Impact testing specimen; ASTM D256 (ISO 179, GB/T 1043)