

Technical Data Sheet

HS PLA Filament

HS PLA is an FFF 3D printing filament, which is produced using a reinforced and toughened modified polylactic acid material. HS PLA not only exhibits excellent dimensional stability, bending strength, and rigidity same as PLA, but also has superior melt fluidity and rapid solidification. It is highly suitable for use in high-speed FFF 3D printers.

Features:

High fluidity/Easy to print/Dimensional stability/High rigidity

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	10~20
Water Absorption (23°C/24h)	ISO 62	%	< 0.3
Mechanical Properties			
Tensile Strength (X-Y)	ISO 527	Mpa	45~49
Tensile Strength (X-Z)	ISO 527	Mpa	35~40
Elongation at Break (X-Y)	ISO 527	%	10.5~15.5
Elongation at Break (X-Z)	ISO 527	%	5~8
Modulus of Elasticity (X-Y)	ISO 527	Mpa	2000~2100
Modulus of Elasticity (X-Z)	ISO 527	Mpa	1950~2050
Bending Strength (X-Y)	ISO 178	Mpa	70~80
Izod Impact Strength (X-Y)	ISO 180	KJ/m ²	4.5~5
Thermal Properties			
HDT@ 0.455 MPa (66 psi)	ISO 75	°C	53
Continuous Service Temperature	IEC 60216	°C	50

Testing Specimen Printing Conditions:

Test Equipment	Adventurer 5M (Flashforge)
Nozzle Diameter	0.4mm
Printing Parameter	0.02mm Standard @Flashforge AD5M 0.4 Nozzle
Infill	100%
Infill Direction	45°
Standard Testing Specimen	Specific dimensions are shown in Attachment 1

Recommended Printing Conditions:

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Nozzle Temperature	Nozzle Temperature
Build Platform Temperature	Build Platform Temperature
Build Surface Material	Build Surface Material
Nozzle Diameter	Nozzle Diameter
Cooling Fan	Cooling Fan
Layer Thickness	Layer Thickness
Printing Speed	Printing Speed
Travel Speed	Travel Speed
Ambient Temperature for Printing	Ambient Temperature for Printing
Retraction Distance	Retraction Distance
Retraction Speed	Retraction Speed
Support Material	Support Material



Cautions:

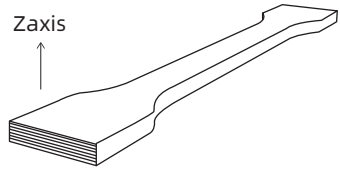
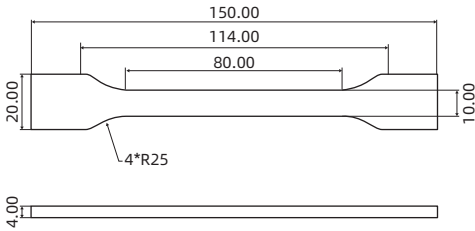
In order to prevent moisture absorption and contamination, supplied packaging should be kept closed and undamaged. For the same reason, partially used filaments should be re-sealed before storage.

HS PLA is a biodegradable 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 HS PLA filament after its package being opened should be used up as soon as possible.

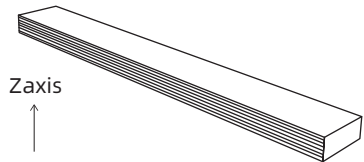
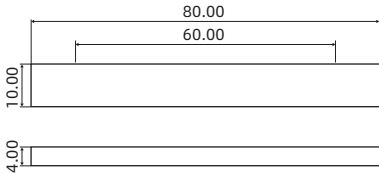
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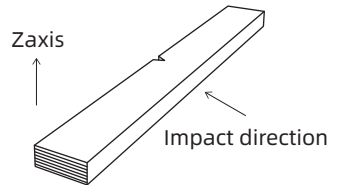
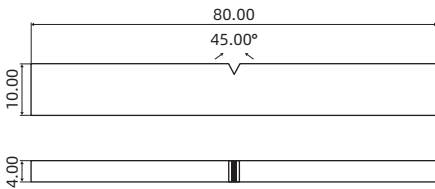
Attachment 1: Testing Specimen Size and Printing Direction



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)