Naturethreed

Version 1.0

Technical Data Sheet

HIPS Filament

HIPS 3D printing filament, which is produced with HIPS 1180 as the main raw material. HIPS has high toughness and high impact resistance, and has a certain temperature resistance, which is generally applicable to different FFF3D printers. HIPS is completely soluble in limonene and can be used as a support material.

Main features:

High toughness/high impact resistance/support material

Main Specifications:

Physical Properties	Test Means		
Density	ISO 1183	g/cm3	1.04~1.06
MFR(250℃/2.16Kg)	ISO 1133	g/10min	6~9
Moisture Absorption(23℃/24h)	ISO 62	%	1%
Mechanical Properties			
Tensile strength	ISO 527	Mpa	28.5~29.5
Elongation at break	ISO 527	%	6~6.5
Flexural Modulus	ISO 527	Mpa	1500~1650
Flexural Strength	ISO178	Mpa	46.5~49
Impact Strength	ISO180	KJ/m^2	7~8
Thermodynamic Properties			
HDT@ 0.455 MPa(66 psi)	ISO75	℃	88

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Test Sample Printing Conditions:

3D Printer	Guider IIS （Flashforge）
Nozzle Diameter	0.4mm
Nozzle Temperature	230 °C
Printing Speed	50mm/s
Layer	1.2mm
Infill	100%
Standard Printed Sample	See blew attachment

Recommended Printing Parameters:

Parameters	
Nozzle Temperature	220~240℃(230℃ recommended)
Bed Temperature	80~110℃(100℃ recommended)
Bed Materials	Tempered glass, BuildTak, Carbon fiber board
Nozzle Diameter	Φ0.4/0.6mm(Φ0.4mm recommended)
Model Cooling Fan	0~50%
Layer	0.12~0.3mm
Printing Speed	40~60mm/s(50mm/s recommended)
Idle Speed	60~120mm/s
Printing Environmental Temperature	Room Temperature to 40℃
Retraction Distance	1~3mm
Retraction Speed	30~50mm/s
Supporting Materials	Itself

Note:

To prevent moisture absorption and contamination, the packaging of filament should be kept airtight and undamaged until they are opened for use. For the same reason, some used filament should be resealed before storage.

HIPS is a polymer material. Moisture and oxygen in the air and ultraviolet rays will accelerate the aging of the material. In order not to affect the final printing quality, the HIPS filament after opening need to be used up as soon as possible.

HIPS material is easy to absorb moisture. If the filament is damp, it is recommended to dry the filament in a hot air oven at 80°C for at least 5 hours to ensure the success rate and quality of the printed model.

Disclaimer:

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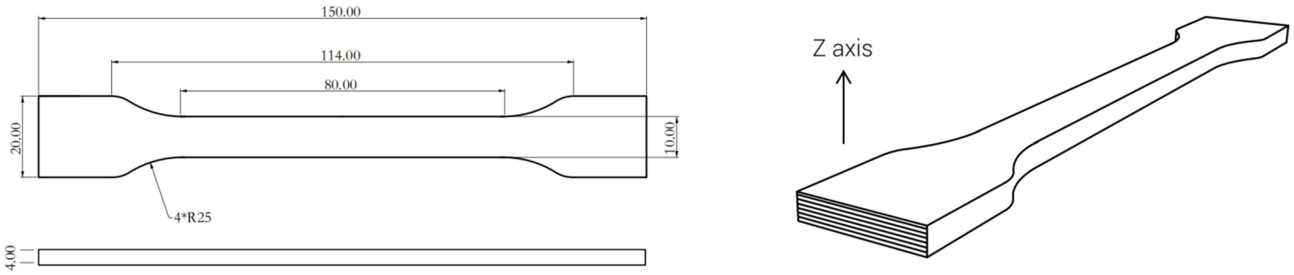
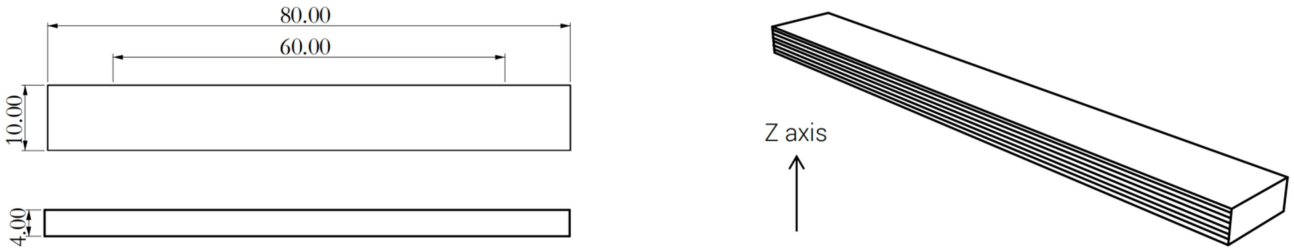
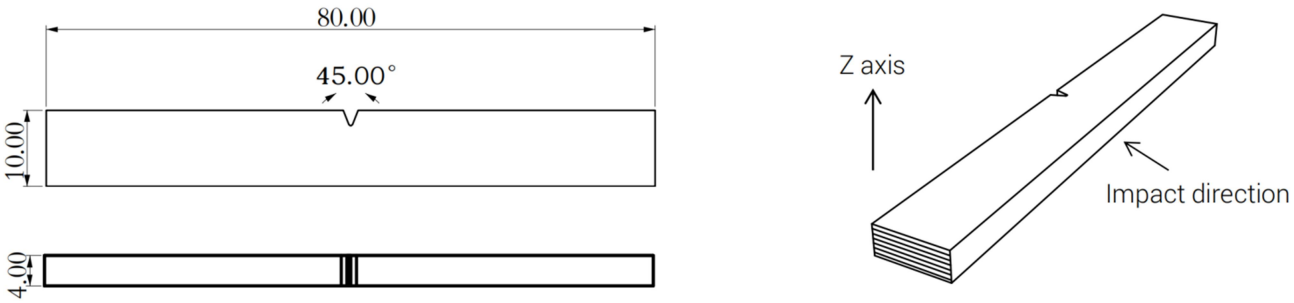
Attachment: Test sample dimensions and printing direction



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



Flexural testing specimen; ASTMD790 (ISO 178, GB/T 9341)



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