

# Technical Data Sheet

## HIPS Filament

HIPS is a FFF 3D printing filament, which is produced using HIPS 1180. HIPS has high tenacity, high impact resistance and certain temperature resistance, and is generally suitable for different FFF 3D printers. HIPS is completely soluble in limonene and can be used as a support material.

### Features:

High tenacity/High impact resistance/Support material.

### Properties:

Physical Properties	Test Method	Units	Typical Value
Density	ISO 1183	g/cm <sup>3</sup>	1.04~1.06
Melt Index MFR (220°C/5Kg)	ISO 1133	g/10min	6~9
Water Absorption (23°C/24h)	ISO 62	%	1%
Mechanical Properties			
Tensile Strength (X-Y)	ISO 527	Mpa	28.5~29.5
Elongation at Break (X-Y)	ISO 527	%	6~6.5
Modulus of Elasticity (X-Y)	ISO 527	Mpa	1500~1650
Bending Strength (X-Y)	ISO 178	Mpa	46.5~49
Izod Impact Strength (X-Y)	ISO 180	KJ/m <sup>2</sup>	7~8
Thermal Properties			
HDT@ 0.455 MPa (66 psi)	ISO 75	°C	88

## Testing Specimen Printing Conditions:

Test Equipment	Guider IIs (Flashforge)
Nozzle Diameter	0.4mm
Nozzle Temperature	230 °C
Printing Speed	50mm/s
Wall Thickness	1.2mm
Infill	100%
Standard Testing Specimen	Specific dimensions are shown in Attachment 1

## Recommended Printing Conditions:

Parameter	
Nozzle Temperature	220~240°C (230°C recommended)
Build Platform Temperature	80~110°C (100°C recommended)
Build Surface Material	Tempered glass, BuildTak, Carbon fiber board
Nozzle Diameter	φ0.4/0.6mm (φ0.4mm recommended)
Cooling Fan	0~50%
Layer Thickness	0.12~0.3mm
Printing Speed	40~60mm/s (50mm/s recommended)
Travel Speed	60~120mm/s
Ambient Temperature for Printing	Room temperature~40°C
Retraction Length	1~3mm
Retraction Speed	30~50mm/s
Recommended Support Material	Self-supporting

## **Cautions:**

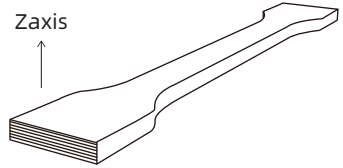
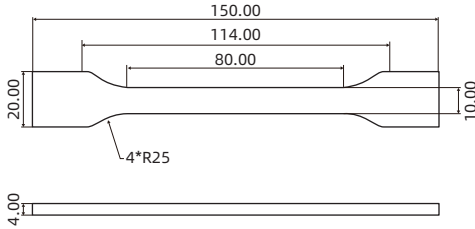
In order to prevent moisture absorption and contamination, supplied packaging should be kept closed and undamaged. For the same reason, partially used filaments should be re-sealed before storage.

As HIPS is a high polymer material, the 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 its package being opened should be used up as soon as possible. As the HIPS filament absorbs moisture easily, it should be dried before being used. Using a hot dry air oven at 80°C for at least 5 hours is recommended in order to ensure the success rate and quality of the printed model.

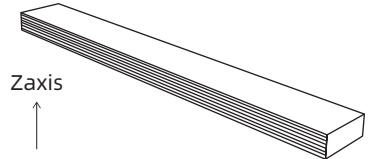
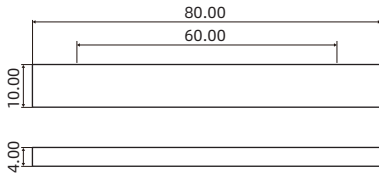
## **Disclaimer:**

Since the conditions of use and applicable laws may vary from place to place and from time to time, customers are responsible for determining whether the products and product information in this document are suitable for customers to use, and ensuring that their workplaces and methods of handling products comply with applicable laws and other government regulations. Our company does not assume any responsibility or obligation for the information in this document, nor does it provide any guarantee. All implied warranties regarding the saleability of the product or the applicability for a particular purpose under this document are expressly excluded here.

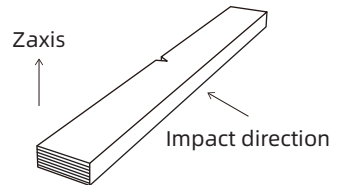
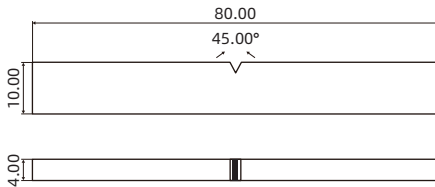
# Attachment 1: Testing Specimen Size and Printing Direction



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)