

# Technical Data Sheet

## F.R. ABS Filament

F.R. ABS is an FFF 3D printing filament, which is produced using CHIMEI ABS PA-763. It shares the high tenacity and impact resistance of ordinary ABS, while also having good flame-retardant properties. It is suitable for printing models like household appliance casings, lamps and lanterns with flame-retardancy requirements.

### Features:

Flame retardancy/High tenacity/High impact resistance

### Properties:

Physical Properties	Test Method	Units	Typical Value
Density	ISO 1183	g/cm <sup>3</sup>	1.19~1.20
Melt Flow Rate (MFR) (220°C/5Kg)	ISO 1133	g/10min	10~15
Water Absorption (23°C/24h)	ISO 62	%	1%
Mechanical Properties			
Tensile Strength (X-Y)	ISO 527	Mpa	30~35
Elongation at Break (X-Y)	ISO 527	%	8~10
Modulus of Elasticity (X-Y)	ISO 527	Mpa	1500~1650
Bending Strength (X-Y)	ISO 178	Mpa	55~60
Izod Impact Strength (X-Y)	ISO 180	KJ/m <sup>2</sup>	10~12
Thermal Properties			
HDT@ 0.455 MPa (66 psi)	ISO 75	°C	86
Flame Retardant Level	UL-94	1.5mm	V0

## 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 plate
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 Distance	1~3mm
Retraction Speed	30~50mm/s
Support Material	Self-supporting, HIPS

**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.

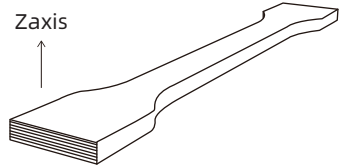
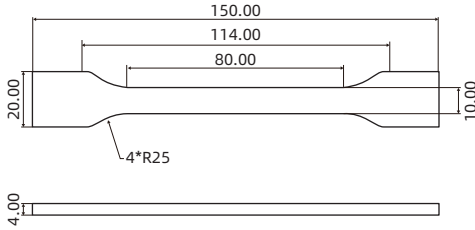
F.R. ABS is a polymer material. Exposure to moisture, oxygen in the air, and UV light will accelerate its aging. In order not to affect the final printing quality, the F.R. ABS filament after its package being opened should be used up as soon as possible.

F.R. ABS filament absorbs moisture easily. In case the filament has become wet, 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 print success rate and quality.

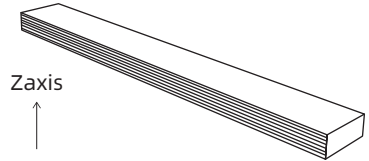
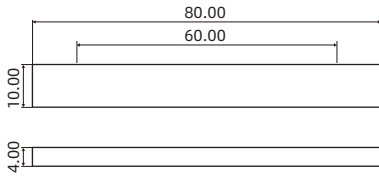
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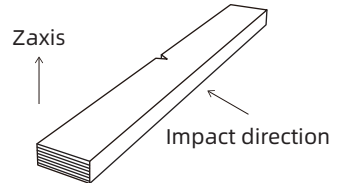
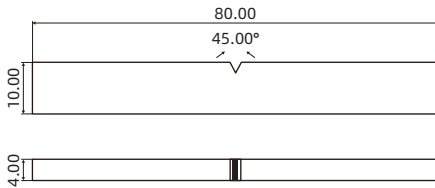
# Attachment 1: Testing Specimen Size and Printing Direction



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)