

# Technical Data Sheet

## ESD PETG Filament

ESD PETG is a FFF 3D printing filament, which is produced using modified materials of PETG and carbon nanotubes. ESD PETG, like PETG, has good dimensional stability, low warping, no cracking, and good antistatic performance as well. The surface resistivity of the printed model can reach  $10^5 \sim 10^7 \Omega$ , making it suitable for the fields that need ESD protection, such as the manufacture of electronic equipment enclosures and jigs. It is an ideal filament for applications in automotive, aerospace, semiconductor industry, electronic and electrical industries.

### Features:

Anti-static property/Easy-to-print property/Dimensional stability

### Properties:

Physical Properties	Test Method	Units	Typical Value
Density	ISO 1183	g/cm <sup>3</sup>	1.27~1.28
Melt Index MFR (220°C/2.16Kg)	ISO 1133	g/10min	8~12
Water Absorption (23°C/24h)	ISO 62	%	< 0.2
Mechanical Properties			
Tensile Strength (X-Y)	ISO 527	Mpa	35~40
Elongation at Break (X-Y)	ISO 527	%	5~8
Modulus of Elasticity (X-Y)	ISO 527	Mpa	1400~1500
Bending Strength (X-Y)	ISO 178	Mpa	64~66
Izod Impact Strength (X-Y)	ISO 180	KJ/m <sup>2</sup>	5~6
Thermal Properties			
HDT@ 0.455 MPa (66 psi)	ISO 75	°C	65
Continuous Service Temperature	IEC 60216	°C	60

## 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 (240°C recommended)
Build Platform Temperature	Room temperature~70°C (60°C recommended)
Build Surface Material	Tempered glass, BuildTak, Carbon fiber board
Nozzle Diameter	φ0.4
Cooling Fan	0~20%
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	1~2mm
Retraction Speed	30~50mm/s
Recommended Support Material	Self-supporting

## **Cautions:**

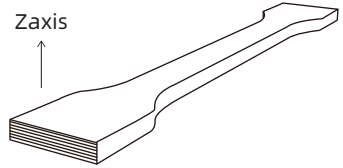
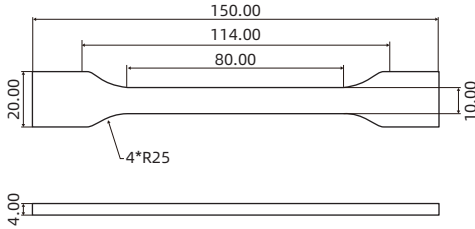
In order to prevent moisture absorption and contamination, supplied packaging should be kept closed and undamaged. For the same reason, partially used filaments should be re-sealed before storage.

As the ESD PETG filament absorbs moisture easily, it should be dried before being used. Using a hot dry air oven at 70°C for at least 5 hours is recommended in order to ensure the success rate and quality of the printed model.

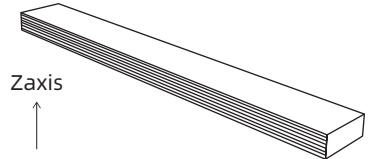
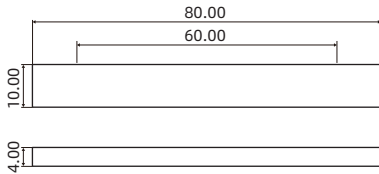
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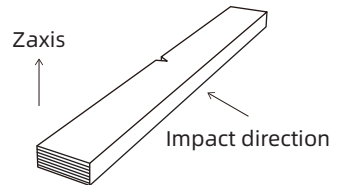
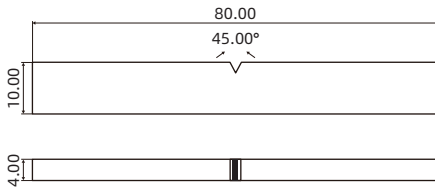
# Attachment 1: Testing Specimen Size and Printing Direction



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)