

Technical Data Sheet

PPA-CF Filament

PPA-CF is a kind of 3D printing filament, which is produced using LUVOCOM® PPA CF as the main raw material. PPA-CF is a polyphthalamide raw material containing 10% carbon fiber. It has high temperature resistance, low moisture absorption and low shrinkage, and can be used on 3D printers in non-heated chambers. 3D models printed with this material have good tensile and impact strength, a heat deformation temperature of up to 220°C, and good high-temperature creep resistance, so the size and electrical properties are less affected by humidity and temperature.

Main features:

High stiffness/high strength/high temperature resistance/low creep

Main Specifications:

Physical Properties	Test Means		
Density	ISO 1183	g/cm3	1.21~1.23
MFR(280℃/5Kg)	ISO 1133	g/10min	35~40
Moisture Absorption(23℃/24h)	ISO 62	%	<0.1
Mechanical Properties			
Tensile strength(X-Y)	ISO 527	Mpa	108~112
Elongation at break(X-Y)	ISO 527	%	3.5~5
Flexural Modulus(X-Y)	ISO 527	Mpa	7100~8000
Flexural Strength(X-Y)	ISO178	Mpa	210~221
Flexural Strength (Z)			70~75
Flexural modulus (X-Y)	ISO178	Mpa	6500~7000
Flexural modulus (Z)			2520~2620
Impact Strength(X-Y)	ISO180	KJ/m²	9~11
Notched impact strength (Z)			2.5~3
Thermodynamic Properties			

HDT@ 0.455 MPa(66 psi)	ISO75	°C	220
Continuous Use Temperature	IEC 60216	°C	120
Electrical characteristics			
surface resistance	IEC 60093	Ω	≤10 ³

Test Sample Printing Conditions:

3D Printer	Prusa XL
Nozzle Diameter	0.4mm
Nozzle Temperature	270 °C
Printing Speed	200mm/s
Layer	0.4mm
Infill	100%
Standard Printed Sample	See blew attachment

Recommended Printing Parameters:

Parameters	
Nozzle Temperature	255~275 °C (Recommend 270 °C)
Bed Temperature	80~100 °C (Recommend 90 °C)
Bed Materials	Prusa Nylon powder coated print sheet
Nozzle Diameter	φ 0.4/0.6mm
Nozzle and gear material	High strength steel
Model Cooling Fan	0~30%
Layer	0.2~0.4mm
Printing Speed	60~250mm/s(Recommend 200mm/s)
Idle Speed	60~500mm/s
Printing Environmental Temperature	Room temperature ~80 °C
Retraction Distance	0.5~1.5mm
Retraction Speed	20~40mm/s

Note:

To prevent moisture absorption and contamination, the packaging of filaments should be kept closed and intact before use. For the same reason, partially used supplies should be resealed before storage.

If the filaments absorb moisture and deteriorate, they should be dried before use. It is recommended to dry the filaments in a hot air oven at 120°C for at least 8 hours to ensure the success rate and quality of the printed model.

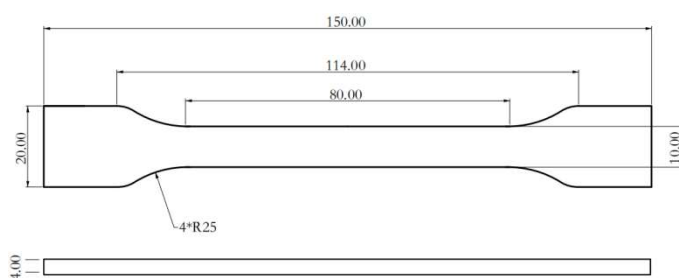
If using PPA-CF as its own support material, please remove the support structure after the model has cooled. Otherwise, the support structure may become glued to the model and difficult to remove. .

After the model is printed, it is recommended to dry it in an oven at a temperature of 80 ~100°C for 1 ~ 3 hours to improve the strength of the model

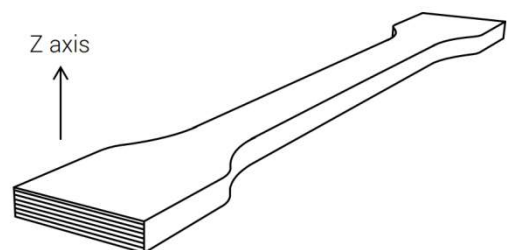
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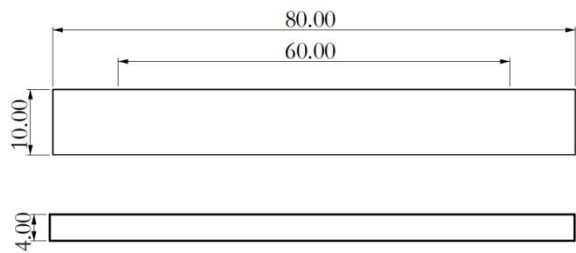
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Attachment: Test sample dimensions and printing direction

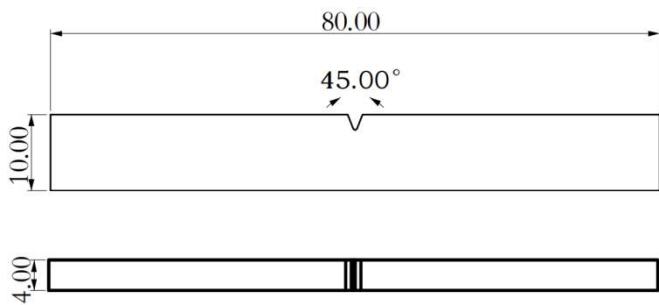
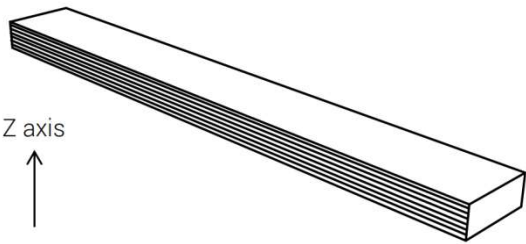


Tensile testing specimen; ASTM D638 (ISO 527, GB/T 1040)





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



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

