NorthPrint 3D

Version 1.0

Technical Data Sheet

PPS CF Filament

PPS CF is a kind of 3D printing filament, which is produced using LUVOCOM® PPS CF as the main raw material. PPS CF is a polyphenylene sulfide modified material containing 10% carbon fiber. It has high temperature resistance, low moisture absorption, chemical resistance and flame retardancy, and can be used on 3D printers in non-heated chambers. 3D models printed with this material have excellent rigidity and strength, with a heat deformation temperature as high as 245°C, and a long-term continuous use temperature of 220°C. Therefore, the size and electrical properties are less affected by humidity and temperature, and it is inherently flame retardant. characteristic.

Main features:

High stiffness/high strength/high temperature resistance/flame retardant

Main Specifications:

Physical Properties	Test Means		
Density	ISO 1183	g/cm3	1.30~1.32
MFR(3316℃/5Kg)	ISO 1133	g/10min	50~60
Moisture Absorption(23℃/24h)	ISO 62	%	＜0.1
Flame retardancy	UL 94	1/16”	V-0
Mechanical Properties			
Tensile strength(X-Y)	ISO 527	Mpa	95~105
Elongation at break(X-Y)	ISO 527	%	4~6
Flexural Modulus(X-Y)	ISO 527	Mpa	8000~9000
Flexural Strength(X-Y)	ISO178	Mpa	125~135
Flexural Strength （Z）			50~52
Flexural modulus （X-Y）	ISO178	Mpa	6000~6500
Flexural modulus （Z）			2200~2260

Impact Strength(X-Y)	ISO180	KJ/m^2	7~8
Notched impact strength (Z)			2.5~3
Thermodynamic Properties			
HDT@ 0.455 MPa(66 psi)	ISO75	℃	245
Continuous Use Temperature	IEC 60216	℃	220
Electrical characteristics			
surface resistance	IEC 60093	Ω	≤10^5

Test Sample Printing Conditions:

3D Printer	G3U（Flashforge）
Nozzle Diameter	0.4mm
Nozzle Temperature	320 °C
Printing Speed	150mm/s
Layer	0.4mm
Infill	100%
Standard Printed Sample	See blew attachment

Recommended Printing Parameters:

Parameters	
Nozzle Temperature	300~350℃(Recommend 320℃)
Bed Temperature	90~110℃(Recommend 100℃)
Bed Materials	Tempered glass, BuildTak, Carbon fiber board
Nozzle Diameter	Φ0.4/0.6mm
Nozzle and gear material	High strength steel
Model Cooling Fan	0~30%
Layer	0.2~0.4mm
Printing Speed	60~200mm/s(Recommend 150mm/s)
Idle Speed	60~500mm/s
Printing Environmental Temperature	Room Temperature ~80℃

Retraction Distance	0.5~1.5mm
Retraction Speed	20~40mm/s

Note:

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

If the filament 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 PPS 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.

Disclaimer:

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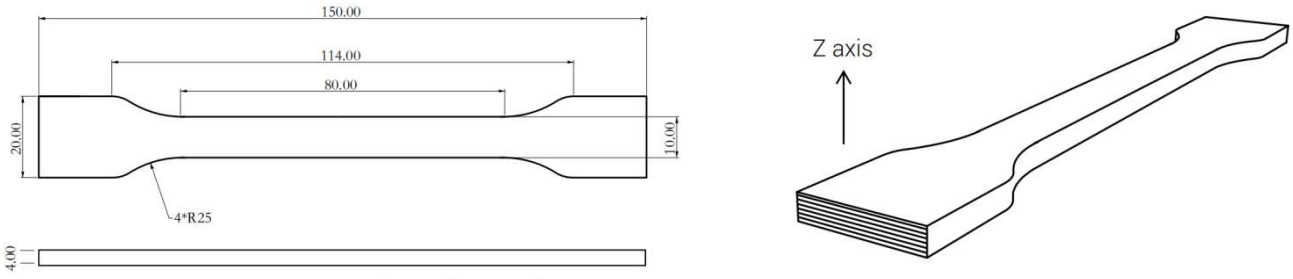
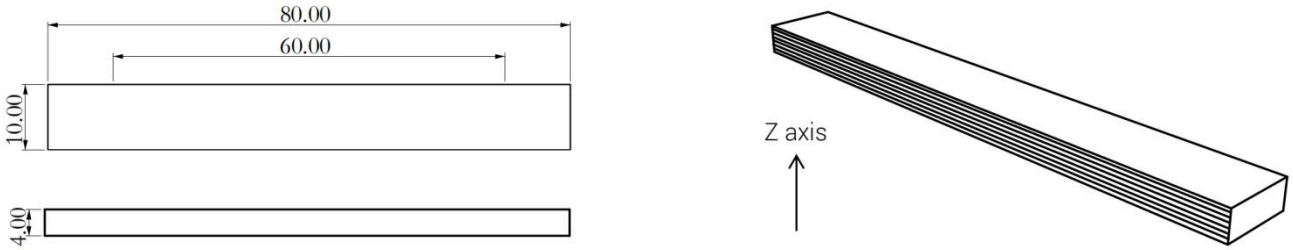
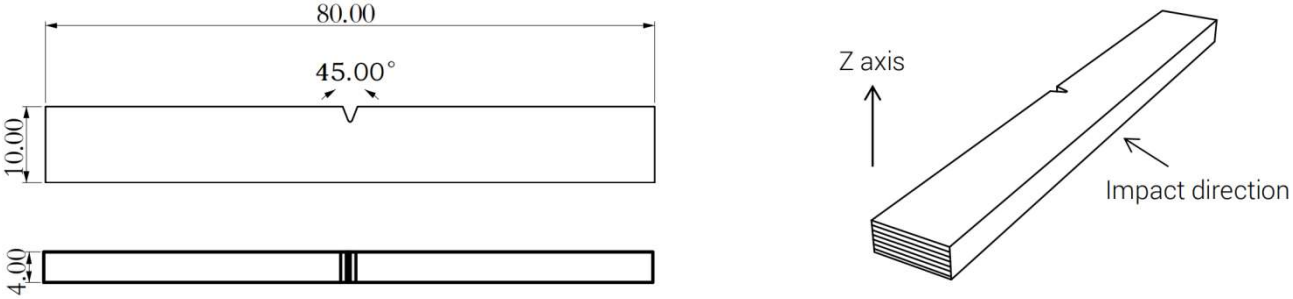
Attachment: Test sample dimensions and printing direction



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)