

Technical Data Sheet

PCCF10 Filament

PCCF10 is an FFF 3D printing filament, which is produced using a modified PC material reinforced with 10% carbon fiber. It offers excellent dimensional stability, bending strength, and rigidity, along with outstanding heat resistance.

Features:

Dimensional stability/High rigidity/Heat resistance.

Properties:

Physical Properties	Test Method	Units	Typical Value
Density	ISO 1183	g/cm³	1.24~1.25
Melt Flow Rate (MFR) (220℃/5Kg)	ISO 1133	g/10min	6~10
Water Absorption (23℃/24h)	ISO 62	%	<1
Mechanical Properties			
Tensile Strength (X-Y)	ISO 527	Mpa	35~40
Elongation at Break (X-Y)	ISO 527	%	7.5~8.5
Bending Modulus (X-Y)	ISO 178	Mpa	2100~2400
Bending Modulus (X-Z)			1960~2000
Bending Strength (X-Y)	ISO 178	Mpa	80~85
Bending Strength (X-Z)			46.5~49
Izod Impact Strength (X-Y)	ISO 180	KJ/m²	4~5.5
Izod Impact Strength (X-Z)			2.5~3
Thermal Properties			
HDT@ 0.455 MPa (66 psi)	ISO 75	℃	120
Continuous Service Temperature	IEC 60216	℃	110

Testing Specimen Printing Conditions:

Test Equipment	Flashforge Guider 3 Ultra
Nozzle Diameter	0.4mm
Nozzle Temperature	250 °C
Printing Speed	250mm/s
Infill Density	100%
Infill Pattern	Concentric
Standard Testing Specimen	Specific dimensions are shown in Attachment 1.

Recommended Printing Conditions:

Parameter	
Nozzle Temperature	240~270°C (250°C recommended)
Build Platform Temperature	100~120°C (110°C recommended)
Build Surface Material	Tempered glass, BuildTak, Carbon fiber board
Nozzle Diameter	φ0.4/0.6mm (φ0.4mm recommended)
Nozzle & Gear Material	Hardened steel
Cooling Fan	0~40%
Layer Thickness	0.12~0.3mm
Printing Speed	40~250mm/s (Higher speeds require higher temperatures.)
Travel Speed	60~350mm/s
Ambient Temperature for Printing	Room temperature~60°C
Retraction Length	0.5~2mm
Retraction Speed	30~50mm/s
Recommended Support Material	Self-supporting, PVA, BVOH



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.

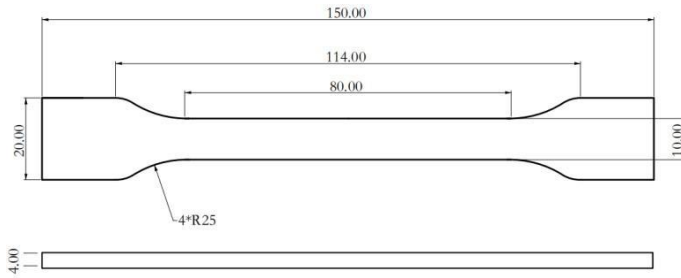
As the PCCF10 filament absorbs moisture easily due to the added carbon fiber, it should be dried before being used. Using a hot dry air oven at 100°C for at least 4 hours is recommended in order to ensure the print success rate and quality.

After the printing process, it is recommended to dry the model in the oven at 100°C for 1-3 hours to increase the strength of the model.

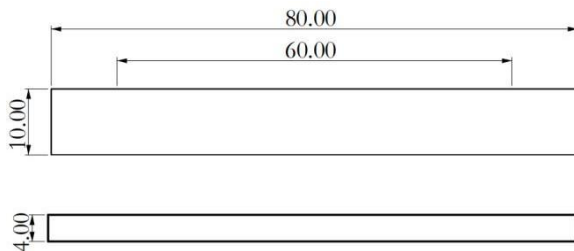
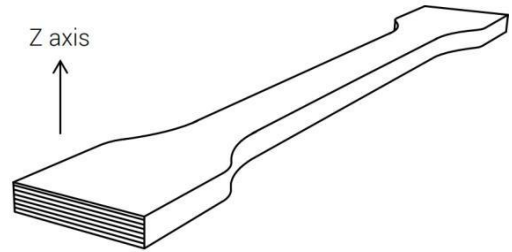
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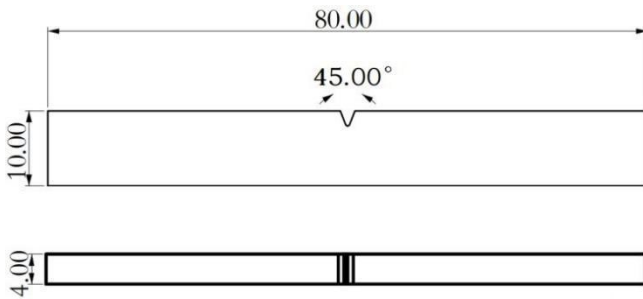
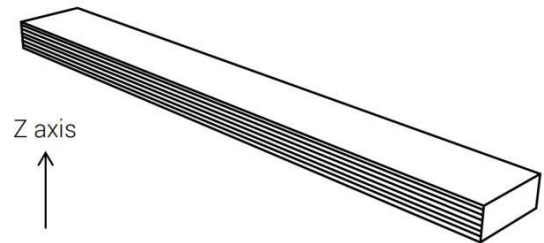
Attachment 1: Testing Specimen Size and Printing Direction



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)

