

Technical Data Sheet

PA6-CF Filament

PA6-CF is an FFF 3D printing filament produced from a polycaprolactam-modified material containing 10% carbon fiber. It exhibits excellent dimensional stability and strength, very good rigidity, and can be used in non-heated chamber FFF 3D printers. It possesses outstanding tensile and flexural strength and can be used continuously for extended periods at ambient temperatures up to 180°C.

Main features:

Dimensionally stable / High strength / High rigidity / Temperature resistant

Main Specifications:

Physical Properties	Test Means		
Density	ISO 1183	g/cm ³	1.20~1.23
MFR(250°C/2.16Kg)	ISO 1133	g/10min	3~6
Moisture Absorption(23°C/24h)	ISO 62	%	<1
Mechanical Properties			
Tensile strength (X-Y)	ISO 527	Mpa	63~67
Elongation at break (X-Y)	ISO 527	%	16.5~17.5
Flexural Modulus (X-Y)	ISO 527	Mpa	4300~4800
Flexural Strength (X-Y)	ISO178	Mpa	140~145
Impact Strength (X-Y)	ISO180	KJ/m ²	11.5~13.5
Thermodynamic Properties			
HDT@ 0.455 MPa(66 psi)	ISO75	°C	200
Continuous Use Temperature	IEC 60216	°C	180

Test Sample Printing Conditions:

3D Printer	Guider IIS
Nozzle Diameter	0.4mm
Nozzle Temperature	285 °C
Printing Speed	50mm/s
Layer	1.2mm
Infill	100%
Standard Printed Sample	See blew attachment

Recommended Printing Parameters:

Parameters	
Nozzle Temperature	270~300°C(recommend 285°C)
Bed Temperature	90~120°C(recommend 100°C)
Bed Materials	Tempered glass, BuildTak, Carbon fiber board
Nozzle Diameter	φ 0.4/0.6mm(recommend φ 0.4mm)
Nozzle and Gear	High strength steel
Model Cooling Fan	OFF
Layer	0.18~0.3mm
Printing Speed	40~60mm/s(recommend 50mm/s)
Idle Speed	60~120mm/s
Printing Environmental Temperature	Room temperature ~65°C
Retraction Distance	2~4mm
Retraction Speed	30~50mm/s
Supporting Materials	Self-support

Note:

To prevent moisture absorption and contamination, the packaging of filament should be

kept airtight and undamaged until they are opened for use. For the same reason, some used filament should be resealed before storage.

It is recommended to dry the filament in a hot air oven at 80°C for at least 12 hours to ensure the success rate and quality of the printed model.

recommended to dry it in an oven at 80-100 °C for 1~3 hours to increase the strength of the model.

Disclaimer:

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Attachment: Test sample dimensions and printing direction

