FLASHFORGE 3D PRINTER

Technical Data Sheet

PLACF10 Filament

PLACF10 is a FFF 3D printing filament, which is produced using a polylactic acid modified material containing 10% carbon fiber. PLACF10 has excellent dimensional stability, bending strength and rigidity, and is as easy to print as PLA filament.

Features:

Dimensional stability/High strength/High rigidity.

Properties:

Physical Properties	Test Method	Units	Typical Value
Density	ISO 1183	g/cm3	1.26~1.27
Melt Index MFR (190℃/2.16Kg)	ISO 1133	g/10min	10~15
Water Absorption (23℃/24h)	ISO 62	%	< 0.5
Mechanical Properties			
Tensile Strength (X-Y)	ISO 527	Mpa	40~45
Elongation at Break (X-Y)	ISO 527	%	11.5~13.5
Modulus of Elasticity (X-Y)	ISO 527	Mpa	1100~1300
Bending Strength (X-Y)	ISO 178	Mpa	85~95
Izod Impact Strength (X-Y)	ISO 180	KJ/m²	8.5~9.5
Thermal Properties			
HDT@ 0.455 MPa (66 psi)	ISO 75	℃	60
Continuous Service Temperature	IEC 60216	℃	55

Testing Specimen Printing Conditions:

Test Equipment	Guider IIs (Flashforge)
Nozzle Diameter	0.4mm
Nozzle Temperature	210 °C
Printing Speed	60mm/s
Wall Thickness	1.2mm
Infill	100%
Standard Testing Specimen	Specific dimensions are shown in Attachment 1

Note: The above test parameter data are obtained from actual printing, and the printed model has not been annealed.

Recommended Printing Conditions:

Parameter	
Nozzle Temperature	200~230℃ (210℃ recommended)
Build Platform Temperature	30~60℃ (50℃ recommended)
Build Surface Material	Tempered glass, BuildTak, Carbon fiber board
Nozzle Diameter	ϕ0.4/0.6mm (ϕ0.4mm recommended)
Nozzle&Gear Material	High-strength steel
Cooling Fan	50~100%
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℃
Retraction Length	1~2mm
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.

Because of the addition of carbon fiber, PLACF10 filament absorbs moisture more easily than PLA filament, so it should be dried before being used. Using a hot dry air oven at 60℃ for at least 5 hours is recommended in order to ensure the success rate and quality of the printed model.

After the printing process, it is recommended to dry the model in an oven at 60℃ for 1-3 hours in order to increase the strength of the model.

Disclaimer:

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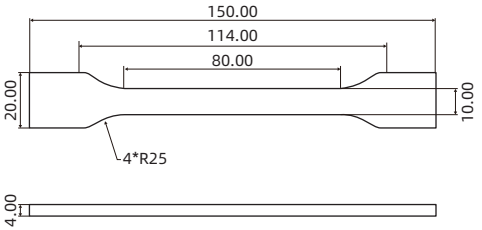
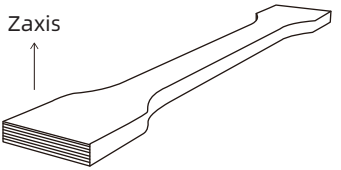
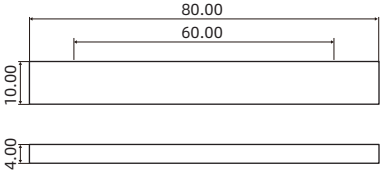
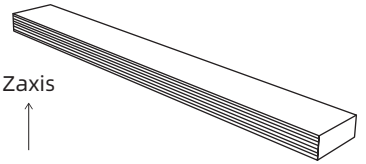
Attachment 1:
Testing Specimen Size and Printing Direction



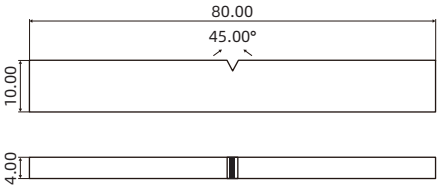


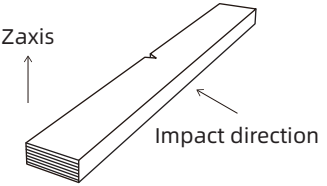
Tensile testing specimen; ASTM D638 (ISO 527, GB/T 1040)





Flexural testing specimen; ASTM D790 (ISO 178, GB/T 9341)





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