

Technical Data Sheet

PA6-GF20 Filament

PA6-GF20 is an FFF 3D printing filament, which is produced using a modified PA6 material reinforced with 20% glass fiber. It offers excellent dimensional stability and rigidity, along with easy printability.

Features:

High rigidity/High strength/Dimensional stability.

Properties:

Physical Properties	Test Method	Units	Typical Value
Density	ISO 1183	g/cm³	1.31~1.32
Melt Index (MFR) (250°C/2.16Kg)	ISO 1133	g/10min	3~6
Water Absorption (23°C/24h)	ISO 62	%	<1
Mechanical Properties			
Tensile Strength (X-Y)	ISO 527	Mpa	98.9~107.3
Elongation at Break (X-Y)	ISO 527	%	6.08~7.32
Bending Modulus (X-Y)	ISO 178	Mpa	200~203.5
Bending Modulus (X-Z)			57.5~59.7
Bending Strength (X-Y)	ISO 178	Mpa	5545~5879
Bending Strength (X-Z)			1582~1653
Izod Impact Strength (X-Y)	ISO 180	KJ/m²	14.5~15.6
Izod Impact Strength (X-Z)			3.5~4.7
Thermal Properties			
HDT@ 0.455 MPa (66 psi)	ISO 75	°C	180

Testing Specimen Printing Conditions:

Test Equipment	Flashforge Guider 3 Ultra
Nozzle Diameter	0.4mm
Nozzle Temperature	270 °C
Printing Speed	150mm/s
Infill Density	100%
Infill Pattern	Concentric
Standard Testing Specimen	Specific dimensions are shown in Attachment 1.

Recommended Printing Conditions:

Parameter	
Nozzle Temperature	250~300°C (270°C recommended)
Build Platform Temperature	80~110°C (90°C recommended)
Build Surface Material	Tempered glass, BuildTak, Carbon fiber board
Nozzle Diameter	φ0.4/0.6mm
Nozzle & Gear Material	Hardened steel
Cooling Fan	0~50%
Layer Thickness	0.12~0.3mm
Printing Speed	40~200mm/s (Higher speeds require higher temperatures.)
Travel Speed	60~300mm/s
Ambient Temperature for Printing	Room temperature~80°C
Retraction Length	0.5~2mm
Retraction Speed	20~40mm/s
Recommended Support Material	Self-supporting



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.

In case the filament has become wet, it should be dried before being used. Using a hot dry air oven at 100°C for at least 6 hours is recommended in order to ensure the print success rate and quality.

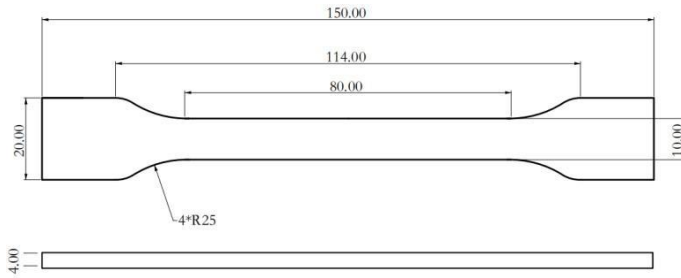
If PA6-GF20 is used as the support material for itself, please remove the support structure as soon as the model cools down. Otherwise, the support structure can be bonded to the model, which will make the support hard to remove.

After the printing process, it is recommended to dry the model in the oven at 80-100°C for 1-3 hours to increase the strength of the model.

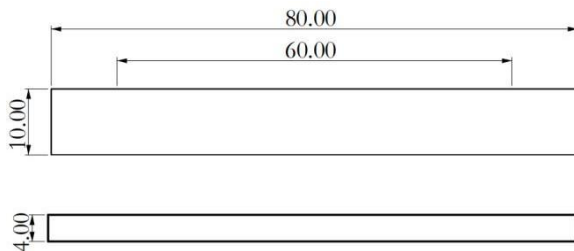
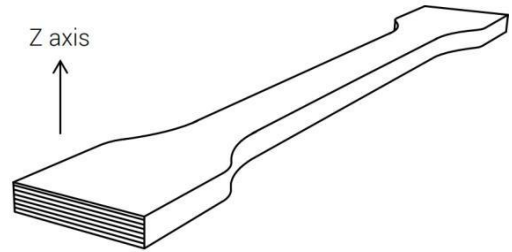
Disclaimer:

Since the conditions of use and applicable laws may vary from place to place and from time to time, customers are responsible for determining whether the products and product information in this document are suitable for customers to use, and ensuring that their workplaces and methods of handling products comply with applicable laws and other governments regulations. Our company does not assume any responsibility or obligation for the information in this document, nor does it provide any guarantee. All implied warranties regarding the saleability of the product or the applicability for a particular purpose under this document are expressly excluded here.

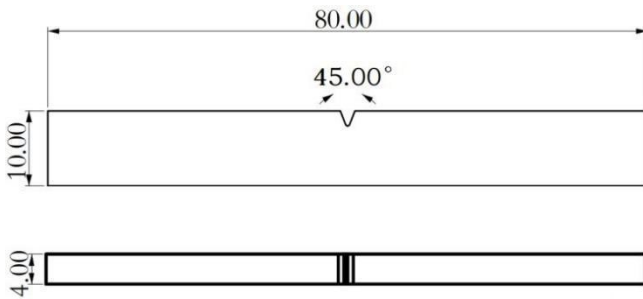
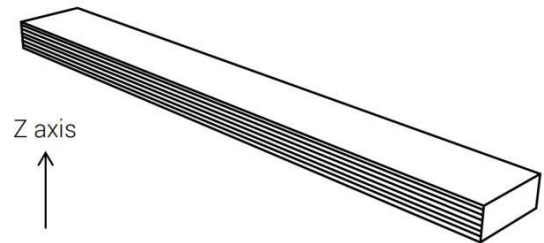
Attachment 1: Testing Specimen Size and Printing Direction



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)

