



Fibreheart™ PET-GF

Flat Dark Earth

Olive Green

White

Black



siraya.tech

Siraya Tech PET-GF is a high-performance, 15% glass-fiber-reinforced filament designed for superior strength, UV resistance, and low moisture absorption.

It ensures exceptional dimensional stability with minimal warping, making it the ideal solution for durable, heat-resistant, and high-precision parts in outdoor or industrial environments.

Ideal for:

- Industrial Prototypes
- Durable, UV-stable tools.
- Drones/Robotics
- Automotive Parts
- Heat-resistant components.
- Mechanical Assemblies

Property Data

Mechanical Properties	Unannealed	Annealed	Method
Tensile Stress at Break (X-Y)	67 MPa	71 MPa	ASTM D638
Young's Modulus (X-Y)	4300 MPa	4200 MPa	ASTM D638
Elongation at Break (X-Y)	2.95 %	2.85 %	ASTM D638
Tensile Stress at Break (Z)	36	-	ASTM D638
Young's Modulus (Z)	3500	-	ASTM D638
Elongation at Break (Z)	1.2	-	ASTM D638
Charpy impact strength	14 KJ/m^2	7.5 KJ/m^2	ISO 179
Bending Strength	100 MPa	119 MPa	ISO 178
Bending Modulus	3280 MPa	3810 MPa	ISO 178
HDT Method A (1.80 MPa)	74 °C	105 °C	ISO 75
HDT Method B (0.45 MPa)	78 °C	134.1 °C	ISO 75

Other Properties	Value	Method
Vicat softening temperature	150 °C	ISO 306
Glass Transition Temperature	135 °C	ASTM D3418
Melting Point	250 °C	ASTM D3418
Filament Density	1.3 g/cm³	ISO 1183
Water Absorption	0.5%	ISO 62 Method 1

Work Flow

Preparing for Printing

Drying	Dry at 100-120°C for 4-6 hours
Nozzle Diameter	0.4-1.0mm
Nozzle Material	Hardened steel or higher grade
Recommended Build Surface	PEI or coat with PVP glue stick
Printer requirements	Enclosure (Prevent warping and cracking)

*Note:

- Only dry if filament shows signs of moisture.
- Drying is not required for the first unpacking unless the vacuum packing becomes damp.

Printing with Fibreheart PET-CF

Nozzle Temperature	300°C
Build Plate Temperature	80°C
Raft Separation Distance	0.08-0.12mm
Cooling Fan Speed	OFF
Print Speed	30-120mm/s
Max Extrusion Volumetric Speed	20mm/s at 320°C
Retraction Distance	1-3mm
Retraction Speed	1800-3600mm/min

Work Flow

Moisture Management

Storage Tip	Recommendation
Sealed Packaging	Store in a sealed aluminum foil bag to prevent moisture.
Use Desiccants	Add desiccants to absorb moisture and keep the material dry.
Avoid Sunlight & Heat	Keep away from direct sunlight and high temperatures to prevent degradation.
Temperature Control	Store at room temperature; avoid extreme heat or cold.

Annealing Process

Key points	Processing
Advantages	Increase HDT and hardness. It is not a required step and should only be done as needed.
Time	4 hours
Temp	95°C
Process	Dip the parts in white aluminum oxide sand and place in an oven or food dehydrator.

Work Flow

Troubleshooting Common Issues

Issue	Stringing
Reason	1. Printing temperature is too high 2. Retraction setting is improper
Solution	1. Reduce the printing temperature by 5-10°C. 2. Increase the retraction distance and speed to effectively pull the filament away from the nozzle

Issue	Popping sounds and poor surface quality
Reason	Moisture influence. When the filament is damp, the high temperature during printing will cause the moisture to evaporate, forming bubbles or popping sounds during extrusion.
Solution	1. Dry PET-GF in oven set at 100-120°C for 4-6 hours 2. Store the filament in a sealed bag with desiccants