

Siraya Tech Fibreheart ABS-CF

Black



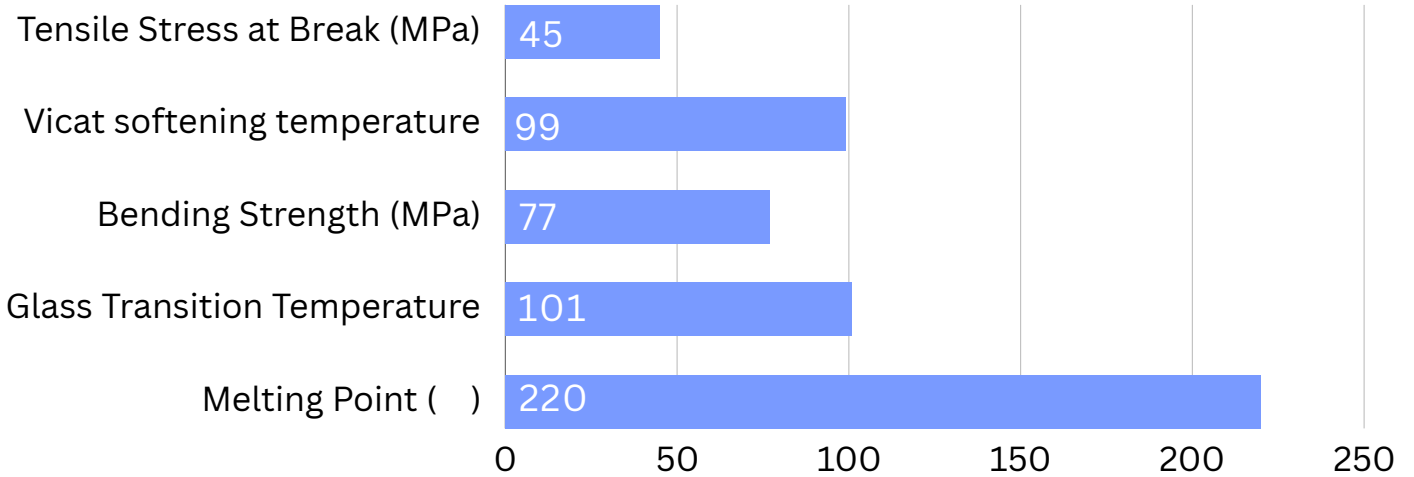
PRODUCT INTRODUCTION

- **Unrivaled Strength:** 10% chopped carbon fibers ABS-CF offers superior toughness, impact resistance, and stability, exceeding standard ABS Carbon Fiber unlike competitors using powdered recycled carbon fiber.
- **Heat and Chemical Resistant:** Performs excellently under high temperatures and chemical exposure, ideal for demanding industrial applications.
- **Precision Printing:** Carbon fibers enhance rigidity, ensuring dimensional stability, minimal warping, and low odor.
- **Lightweight Durability:** Perfect balance of strength and weight, great for drones, automotive parts, and sports equipment.
- **Versatile Applications:** Suitable for intricate prototypes to industrial parts, ideal for professional and hobbyist use with strong mechanical properties.

APPLICATIONS

- Aerospace: Lightweight, durable drone and RC aircraft components
- Automotive: Heat-resistant under-hood parts and interior components
- Industrial: Robust tooling, jigs, and fixtures for manufacturing
- Consumer Goods: High-performance sporting equipment and protective gear
- Robotics: Strong, precise mechanical parts for automation projects
- Medical: Customized prosthetics and orthotics prototypes

Property Data



Mechanical Properties	Measure	Method
Tensile Stress at Break (MPa)	45	ASTM D638
Young's Modulus (MPa)	3520	ASTM D638
Elongation at Break(%)	3	ASTM D638
Charpy impact strength (KJ/m ²)	8	-
Bending Strength (MPa)	77	-
Bending Modulus (MPa)	3310	-

Other Properties	Measure	Method
Vicat softening temperature °C	99	ISO 306
Glass Transition Temperature	101	-
Melting Point (C)	220	-
HDT	94°C/ 99°C	Method A/B (1.80/ 0.45 MPa)
Filament Density g/cm ³	1.06	ISO 1183

Work Flow

Preparing for Printing

(1) Printer Compatibility

Siraya Tech ABS-CF is optimized for FDM printers equipped with direct drive extruders, which provide enhanced filament control crucial for successful carbon fiber-reinforced printing. A harden steel nozzle is recommended.

(2) Print Bed Preparation

A clean, level print bed is essential. The recommended build plate temperature ranges from 100°C to 110°C. Compatible build surfaces include glass, and PEI film

(3) Enclosure

An enclosure is crucial for maintaining consistent printing temperatures. If your device has a heated chamber, maintain temperatures between 60-80°C to help release residual stress during printing and prevent warping and cracking.

Print Setting for Fibreheart ABS-CF

(1) Temperature Settings

Nozzle temperature: 250-270°C

Build plate temperature: 100-110°C

(2) Print Speed

Printing speeds can range from 30-120 mm/s. Start at lower speeds and gradually increase for optimal results.

(3) Nozzle

Recommended nozzle diameter: ≥ 0.4 mm

(4) Retraction Settings

Retraction distance: 1-5 mm

Retraction speed: 1800-3600 mm/min

Work Flow

Print Setting for Fibreheart ABS-CF

(5) Build Platform Material

Glass, and PEI film are recommended for best adhesion with application of glue stick or coating.

(6) Cooling Fan

Run cooling fans at 0-30% speed to maintain print quality while ensuring proper layer adhesion.

Moisture Management

Carbon fiber reinforced ABS filaments are susceptible to moisture absorption, which can affect print quality.

(1) Storage

Store the filament in its original moisture-resistant packaging when not in use. Using a dry box with desiccant is recommended for prolonged storage.

(2) Drying Filament

If print quality degradation is observed after long-term exposure to air, dry the filament at 70-80°C for 4-6 hours before printing. Only dry if the filament is damp.

Additional Recommendations

1. Keep the printer in a well-ventilated area during printing, even though this filament has lower odor compared to similar products.
2. The Raft separation distance should be set to 0.16-0.18 mm when using support structures.
3. For optimal results, use 100% infill with $\pm 45^\circ$ infill angles for functional parts requiring maximum strength.

Contact US

- If you have any questions, please feel free to contact our support at support@siraya.tech.
- You can also post in the [Siraya Tech Facebook user group](#), where many enthusiastic and experienced experts will also help you. We will also reply to the post, which can also help other printers with the same problem.