Shenzhen Elegoo Technology Co.,Ltd.

Technical Data Sheet

Basic Introduction

Product Name: ELEGOO PET-CF

Applicable Industry: Interior decorations, desktop accessories, outdoor equipments, engineering parts etc.

Manufacturer: Shenzhen Elegoo Technology Co.,Ltd.

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Product Advantages

ELEGOO PET-CF features high strength and high rigidity, low moisture absorption, high dimensional accuracy, good stability and low warpage. It has a matte surface texture that can mask layer lines and resist abrasion. After annealing, its heat resistance can reach up to 194 °C, making it ideal for components requiring heat resistance, low moisture absorption, dimensional stability and high performance.

Recommended Printing Settings

Drying Settings Before Printing: 80 °C, 8 h (Air Drying Oven)

Printing Humidity: ≤20 % RH (sealed with desiccant)

Storage Humidity: ≤20 % RH (sealed with desiccant)

Printer Type: Enclosed-frame, open-frame

Nozzle Material: Hardened steel

Nozzle Size: 0.4, 0.6, 0.8 mm

Plate Type: Textured PEI plate, smooth PEI plate or other plates

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Plate Surface Pretreatment: Applying the glue

Nozzle Temperature: 260 -290℃

Bed Temperature: 80-100℃

Printing Speed: < 100 mm/s

Chamber Temperature: 45-60℃

Support Material: Self-generated support or PET special support

Physical Properties

Subjects	Testing Methods	Test Data
Density	ρ = m / v	1.32 g/cm³
Saturated water absorption rate	25 °C，55% RH，indoor air	0.33%
Melt index	250 °C，2.16 kg	50.2 ± 3.6 g/10 min
Glass transition temperature	DSC，10 °C/min	85 °C
Crystallization temperature	DSC，10 °C/min	N / A
Melting temperature	DSC，10 °C/min	255 °C
Vicat softening temperature	ISO 306，GB/T 1633	102 °C
Heat deflection temperature 1	ISO 75，1.80 MPa	112 °C
Heat deflection temperature 2	ISO 75，0.45 MPa	194 °C

Mechanical Properties

Subjects	Testing Methods	Test Data
Tensile strength (XY)	ISO 527，GB/T 1040	84 ± 3 MPa
Tensile strength (Z)	ISO 527, GB/T 1040	40 ± 2 MPa
Young's modulus (XY)	ISO 527，GB/T 1040	4522 ± 160 MPa
Young's modulus (Z)	ISO 527，GB/T 1040	1983 ± 144 MPa
Breaking elongation rate (XY)	ISO 527，GB/T 1040	6.3% ± 1.2%
Breaking elongation rate (Z)	ISO 527，GB/T 1040	4.1% ± 0.7%
Bending strength (XY)	ISO 178，GB/T 9341	136 ± 2 MPa

Bending strength (Z)	ISO 178，GB/T 9341	52 ± 2 MPa
Bending modulus (XY)	ISO 178，GB/T 9341	5589 ± 154 MPa
Bending modulus (Z)	ISO 178，GB/T 9341	2448 ± 105 MPa
Impact strength (XY)	ISO 179，GB/T 1043	40.2 ± 2.5 kJ/m²
Impact strength (Z)	ISO 179，GB/T 1043	5.8 ± 2 kJ/m²

Chemical and Other Properties

Component: PET and carbon fiber

Skin Irritation: No

Chemical stability: Stable at normal temperature

Resistance to Water: Resistant

Resistance to Oil and Grease: Resistant to most kinds of oil and grease

Resistance to Organic Solvent: Not resistant to some kinds of organic solvents

Resistance to Acid: Good

Resistance to Alkali: Good

Flammability: Yes

Odor During Printing: Nearly odorless

Specimen Information

Size: Refer to the following pictures.

Nozzle Temperature: 270 ℃

Bed Temperature: 100 ℃

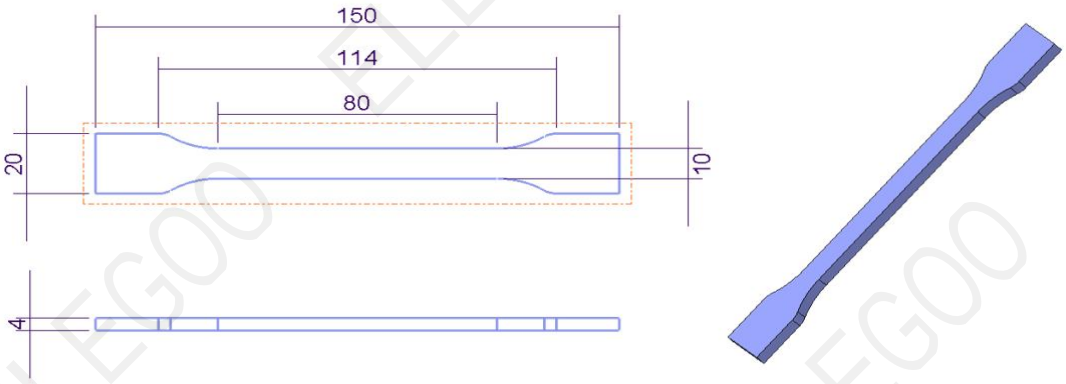
Printing Speed: 100 mm/s

Infill Density: 100%

Infill Pattern: Concentric pattern

Statements: The test specimens were printed under the key parameters mentioned above. Before testing, all specimens were annealed at 85 °C for 8 hours and then placed in an indoor environment at approximately 25 °C for 24 hours.

1. **Tensile Testing**



2. **Bending Testing**



3. **Impact Testing**



Disclaimer

The above properties data is obtained by ELEGOO through testing with standard samples, standard methods, and specific equipment, and is for reference and comparison only. The actual performance of 3D printed products depends not only on the characteristics used but also on many factors, such as the moisture absorption of the filaments, the printer, environmental conditions, model characteristics, printing parameters, etc.

When using the ELEGOO FDM 3D printing filaments, users are responsible for the legality, safety, and performance of the printing. ELEGOO is not responsible for the usage scenarios, or any damage or injury that occurs during using our filaments.