Shenzhen Elegoo Technology Co.,Ltd.
Technical Data Sheet

Basic Introduction

Product Name: ELEGOO PAHT - CF

Applicable Industry: Interior decorations, prototype manufacturing, and engineering components etc.

Manufacturer: Shenzhen Elegoo Technology Co.,Ltd.

Manufacturer Address: 101, No. 30, Dahe Industrial Zone, Guancheng Community, Guanhu Street, Longhua District, Shenzhen, Guangdong Province, China

Tel: +86-0755-21005141

Pin Code: 518000

Advantages

The ELEGOO PAHT-CF is specifically designed for extreme environments and high-performance requirements. It features exceptional strength and stiffness, along with excellent heat resistance. Inheriting the outstanding wear and chemical resistance typical of the nylon, this filament is ideal for functional parts used in various complex working conditions.

Recommended Printing Settings

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

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

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

Printer Type: Enclosed-frame

Nozzle Size: 0.4, 0.6, 0.8 mm

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

Plate Surface Pretreatment: Applying the glue

Nozzle Temperature: 260 - 290 °C

Bed Temperature: 90 - 110 °C

Printing Speed: < 300 mm/s

Chamber Temperature: 45 - 60 °C

Physical Properties

Subjects	Testing Methods	Data
Density	ρ = m / v	1.08 g/cm³
Saturated Water Absorption Rate	25 °C , 55% RH, Indoor air	0.79%
Melt Index	280 °C, 2.16 kg	28.0 ± 0.8 g/10 min
Glass Transition Temperature	DSC, 10 °C/min	68 °C
Crystallization Temperature	DSC, 10 °C/min	N / A
Melting Temperature	DSC, 10 °C/min	225 °C
Vicar Softening Temperature	ISO 306, GB/T 1633	225 °C
Heat Deflection Temperature 1	ISO 75, 1.80 MPa	172 °C
Heat Deflection Temperature 2	ISO 75, 0.45 MPa	194 °C

Mechanical Properties

Subjects	Testing Methods	Data
Tensile Strength (XY)	ISO 527, GB/T 1040	87 ± 3 MPa
Tensile Strength (Z)	ISO 527, GB/T 1040	41 ± 1 MPa
Young’s Modulus (XY)	ISO 527, GB/T 1040	2019 ± 125 MPa
Young's Modulus (Z)	ISO 527, GB/T 1040	1288 ± 90 MPa
Breaking Elongation Rate (XY)	ISO 527, GB/T 1040	14.2% ± 1.1%
Breaking Elongation Rate (Z)	ISO 527, GB/T 1040	5.2% ± 1.3%

Bending Strength (XY)	ISO 178, GB/T 9341	138 ± 3 MPa
Bending Strength (Z)	ISO 178, GB/T 9341	63 ± 3 MPa
Bending Modulus (XY)	ISO 178, GB/T 9341	5089 ± 54 MPa
Bending Modulus (Z)	ISO 178, GB/T 9341	2048 ± 105 MPa
Impact Strength (XY)	ISO 179, GB/T 1043	70.4 ± 3.4 kJ/m²
Impact Strength (Z)	ISO 179, GB/T 1043	19.4 ± 3.1 kJ/m²

Other Physical and Chemical Properties

Component: Nylon 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: Resistant

Resistance to Alkali: Resistant

Flammability: Yes

Odor During Printing: Odorless

Specimen Information

Size: Refer to the following pictures.

Nozzle Temperature: 290 ℃

Bed Temperature: 110 ℃

Printing Speed: 100 mm/s

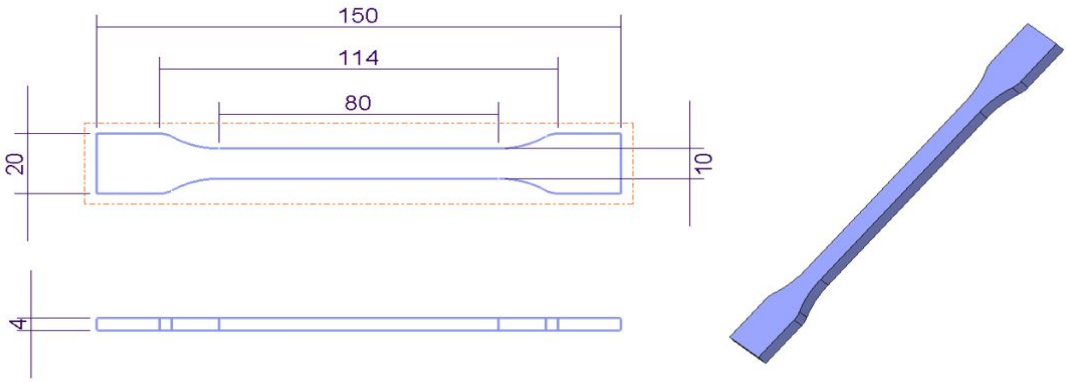
Infill Density: 100%

Infill Pattern: Concentric pattern

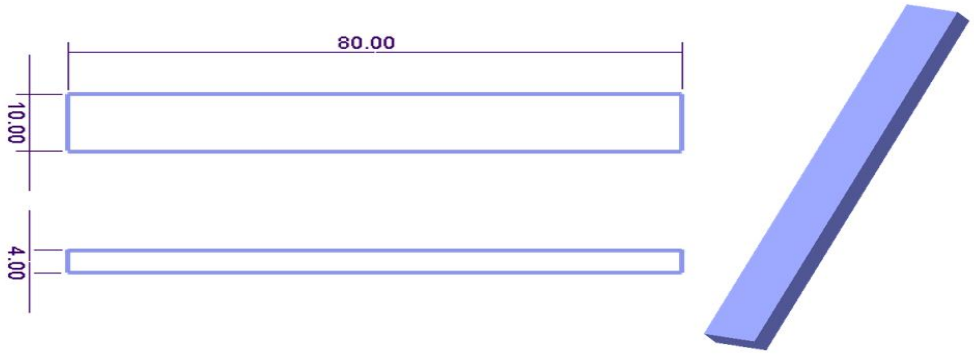
Statements: The test specimens were printed under the key parameters mentioned above. Before testing, all specimens

were annealed at 80 °C for 8 hours and then placed in an indoor environment at approximately 25 °C for 24 hours.

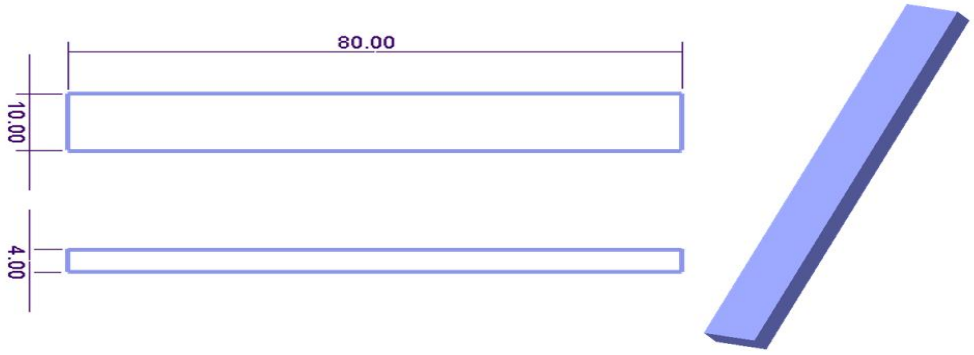
1. Tensile Testing



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.