Shenzhen Elegoo Technology Co.,Ltd.
Technical Data Sheet

Basic Introduction

Product Name: ELEGOO ABS

Applicable Industry: Interior decorations, desktop ornaments, outdoor equipment, 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

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Pin Code: 518000

Advantages

ELEGOO ABS is resistant to water, weather, and heat. Parts made from ELEGOO ABS can maintain their shape and performance stability even in high-temperature environments, and they are not easily softened or deformed. Additionally, ELEGOO ABS exhibits high strength and impact resistance, produces minimal odor, and experiences little warping.

Recommended Printing Settings

Drying Settings Before Printing: 70 °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: 0.2, 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: 240 - 280 °C

Bed Temperature: 90 - 100 °C

Printing Speed: < 220 mm/s

Chamber Temperature: 45 - 60 °C

Support Material: Self-generated support or ABS special support

Physical Properties

Subjects	Testing Methods	Data
Density	ρ = m / v	1.05 g/cm³
Saturated Water Absorption Rate	25 °C , 55% RH, Indoor air	0.57%
Melt Index	210 °C, 2.16 kg	8.8 ± 0.3 g/10 min
Glass Transition Temperature	DSC, 10 °C/min	N / A
Crystallization Temperature	DSC, 10 °C/min	N / A
Melting Temperature	DSC, 10 °C/min	216 °C
Vicar Softening Temperature	ISO 306, GB/T 1633	86 °C
Heat Deflection Temperature 1	ISO 75, 1.80 MPa	82 °C
Heat Deflection Temperature 2	ISO 75, 0.45 MPa	85 °C

Mechanical Properties

Subjects	Testing Methods	Data
Tensile Strength (XY)	ISO 527, GB/T 1040	35 ± 2 MPa
Tensile Strength (Z)	ISO 527, GB/T 1040	29 ± 2 MPa
Young’s Modulus (XY)	ISO 527, GB/T 1040	1628 ± 154 MPa
Young's Modulus (Z)	ISO 527, GB/T 1040	1343 ± 129 MPa
Breaking Elongation Rate (XY)	ISO 527, GB/T 1040	7.2% ± 0.2%

Breaking Elongation Rate (Z)	ISO 527, GB/T 1040	6.9% ± 0.3%
Bending Strength (XY)	ISO 178, GB/T 9341	68 ± 2 MPa
Bending Strength (Z)	ISO 178, GB/T 9341	53 ± 2 MPa
Bending Modulus (XY)	ISO 178, GB/T 9341	2484 ± 115 MPa
Bending Modulus (Z)	ISO 178, GB/T 9341	2133 ± 105 MPa
Impact Strength (XY)	ISO 179, GB/T 1043	54.9 ± 3.2 kJ/m²
Impact Strength (Z)	ISO 179, GB/T 1043	9.6 ± 1.1 kJ/m²

Other Physical and Chemical Properties

Component: Terpolymer composed of acrylonitrile, butadiene and styrene

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: Slight odor

Specimen Information

Size: Refer to the following pictures.

Nozzle Temperature: 270 ℃

Bed Temperature: 90 ℃

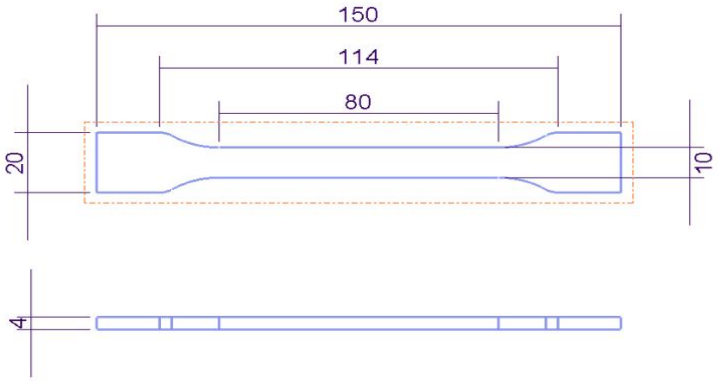
Printing Speed: 150 mm/s

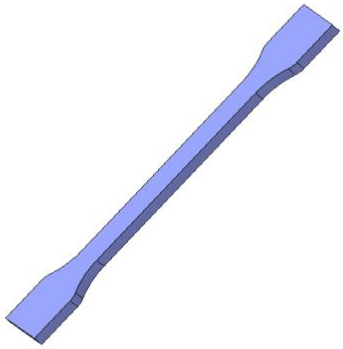
Infill Density: 100%

Infill Pattern: Concentric pattern

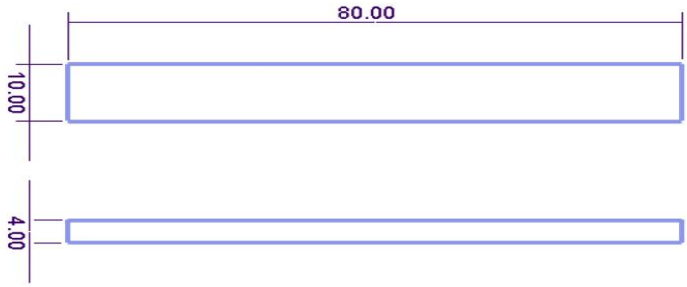
Statements: The test specimens were printed under the key parameters mentioned above. Before testing, all specimens were annealed at 80 °C for 8 hours and then placed in an indoor environment at approximately 25 °C for 24 hours.

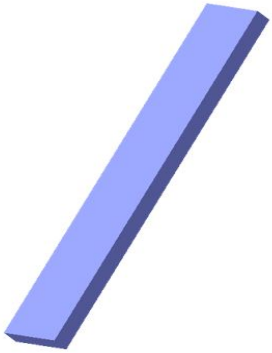
1. Tensile Testing



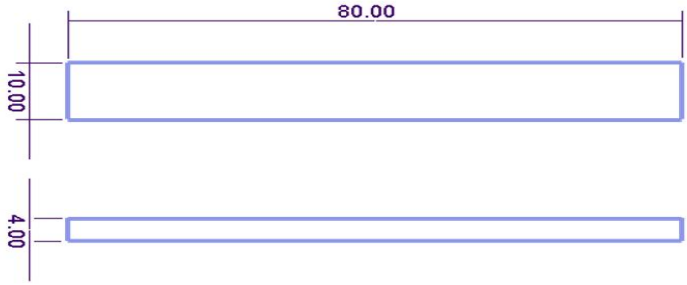


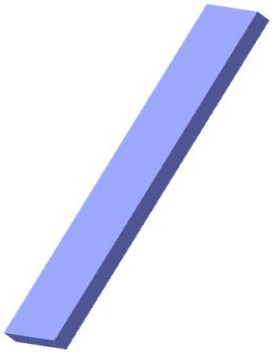
2. Bending Testing





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.