Shenzhen Elegoo Technology Co.,Ltd.
Technical Data Sheet

Basic Introduction

Product Name: ELEGOO PLA Plus

Applicable Industry: Interior decorations, desktop accessories, and toys 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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Advantages

ELEGOO PLA Plus is manufactured by renewable plant resources, such as corn starch. It is characterised by its eco-friendliness, ease of printing and forming, low shrinkage, wide range of colours, as well as high strength and toughness.

Recommended Printing Settings

Drying Settings Before Printing: 55 °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, open-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: 200 - 230 °C

Bed Temperature: 35 - 65 °C

Printing Speed: < 280 mm/s

Chamber Temperature: 20 - 45 °C

Support Material: Self-generated support or PLA special support

Physical Properties

Subjects	Testing Methods	Data
Density	ρ = m / v	1.30 g/cm³
Saturated Water Absorption Rate	25 °C , 55% RH, Indoor air	0.39%
Melt Index	190 °C, 2.16 kg	7.9 ± 1.1 g/10 min
Glass Transition Temperature	DSC, 10 °C/min	61 °C
Crystallization Temperature	DSC, 10 °C/min	N / A
Melting Temperature	DSC, 10 °C/min	161 °C
Vicar Softening Temperature	ISO 306, GB/T 1633	63 °C
Heat Deflection Temperature 1	ISO 75, 1.80 MPa	53 °C
Heat Deflection Temperature 2	ISO 75, 0.45 MPa	56 °C

Mechanical Properties

Subjects	Testing Methods	Data
Tensile Strength (XY)	ISO 527, GB/T 1040	38 ± 2 MPa
Tensile Strength (Z)	ISO 527, GB/T 1040	24 ± 2 MPa
Young’s Modulus (XY)	ISO 527, GB/T 1040	2026 ± 128 MPa
Young's Modulus (Z)	ISO 527, GB/T 1040	1553 ± 112 MPa
Breaking Elongation Rate (XY)	ISO 527, GB/T 1040	7.9% ± 1.6%
Breaking Elongation Rate (Z)	ISO 527, GB/T 1040	5.9 % ± 1.9 %

Bending Strength (XY)	ISO 178, GB/T 9341	74 ± 4 MPa
Bending Strength (Z)	ISO 178, GB/T 9341	44 ± 3 MPa
Bending Modulus (XY)	ISO 178, GB/T 9341	2979 ± 156 MPa
Bending Modulus (Z)	ISO 178, GB/T 9341	2582 ± 115 MPa
Impact Strength (XY)	ISO 179, GB/T 1043	65.5 ± 3.6 kJ/m²
Impact Strength (Z)	ISO 179, GB/T 1043	7.6 ± 1.1 kJ/m²

Other Physical and Chemical Properties

Component: Polylactic acid

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: Not resistant

Resistance to Alkali: Not resistant

Flammability: Yes

Odor During Printing: Odorless

Specimen Information

Size: Refer to the following pictures.

Nozzle Temperature: 220 ℃

Bed Temperature: 55 ℃

Printing Speed: 150 mm/s

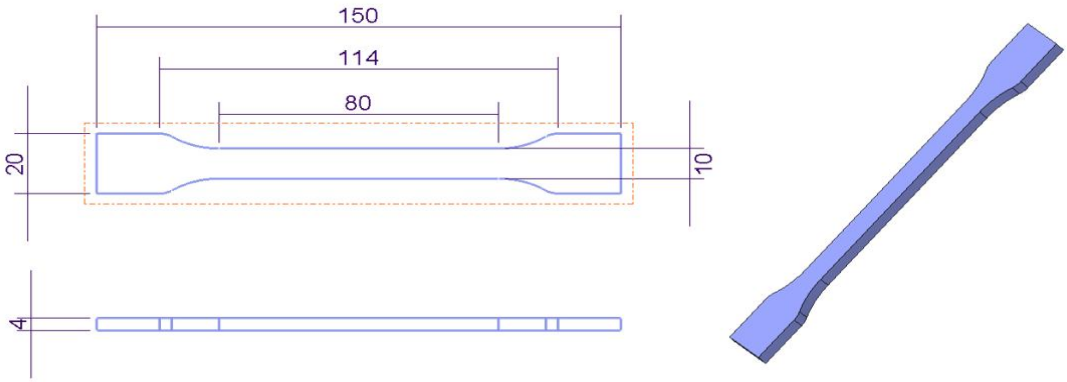
Infill Density: 100%

Infill Pattern: Concentric pattern

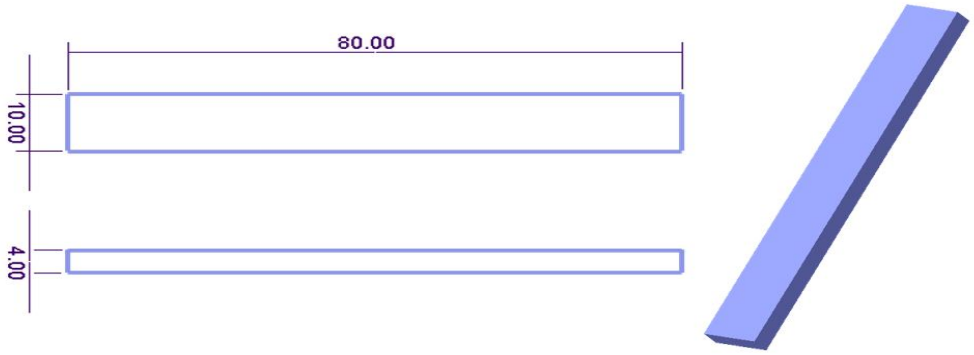
Statements: The test specimens were printed under the key parameters mentioned above. Before testing, all specimens

were annealed at 55 °C for 8 hours and then placed in an indoor environment at approximately 25 °C for 24 hours.

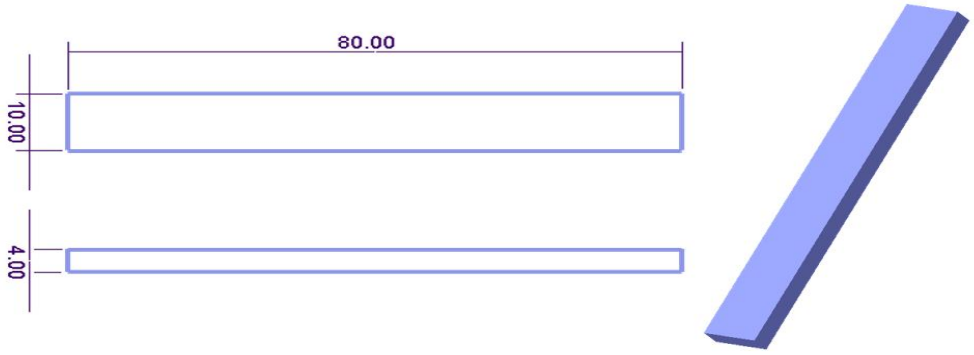
1. Tensile Testing



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.