# Shenzhen Elegoo Technology Co.,Ltd.
# Technical Data Sheet

## Basic Introduction

Product Name: ELEGOO PLA PRO

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

The ELEGOO PLA Pro is manufactured by renewable plant resources such as corn starch, which makes it an eco-friendly product. It offers easy printing and forming, low shrinkage, and a wide range of colour options.

## 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: 180 - 210 °C

Bed Temperature: 35 - 65 °C

Printing Speed: < 300 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 | 1.24 g/cm³ |
| Saturated Water Absorption Rate | 25 °C , 55% RH, Indoor air | 0.4% |
| Melt Index | 190 °C, 2.16 kg | 7.2 ± 1.3 g/10 min |
| Glass Transition Temperature | DSC, 10 °C/min | 62 °C |
| Crystallization Temperature | DSC, 10 °C/min | N / A |
| Melting Temperature | DSC, 10 °C/min | 162 °C |
| Vicar Softening Temperature | ISO 306, GB/T 1633 | 62 °C |
| Heat Deflection Temperature 1 | ISO 75, 1.80 MPa | 52 °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 | 32 ± 2 MPa |
| Tensile Strength (Z) | ISO 527, GB/T 1040 | 18 ± 3 MPa |
| Young’s Modulus (XY) | ISO 527, GB/T 1040 | 2002 ± 132 MPa |
| Young's Modulus (Z) | ISO 527, GB/T 1040 | 1490 ± 122 MPa |
| Breaking Elongation Rate (XY) | ISO 527, GB/T 1040 | 9.7% ± 2.3% |
| Breaking Elongation Rate (Z) | ISO 527, GB/T 1040 | 8.7% ± 1.3% |

| | | |
|---|---|---|
| Bending Strength (XY) | ISO 178, GB/T 9341 | 66 ± 3 MPa |
| Bending Strength (Z) | ISO 178, GB/T 9341 | 45 ± 2 MPa |
| Bending Modulus (XY) | ISO 178, GB/T 9341 | 2964 ± 169 MPa |
| Bending Modulus (Z) | ISO 178, GB/T 9341 | 2419 ± 154 MPa |
| Impact Strength (XY) | ISO 179, GB/T 1043 | 30.2 ± 2.3 kJ/m² |
| Impact Strength (Z) | ISO 179, GB/T 1043 | 7.8 ± 1.6 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

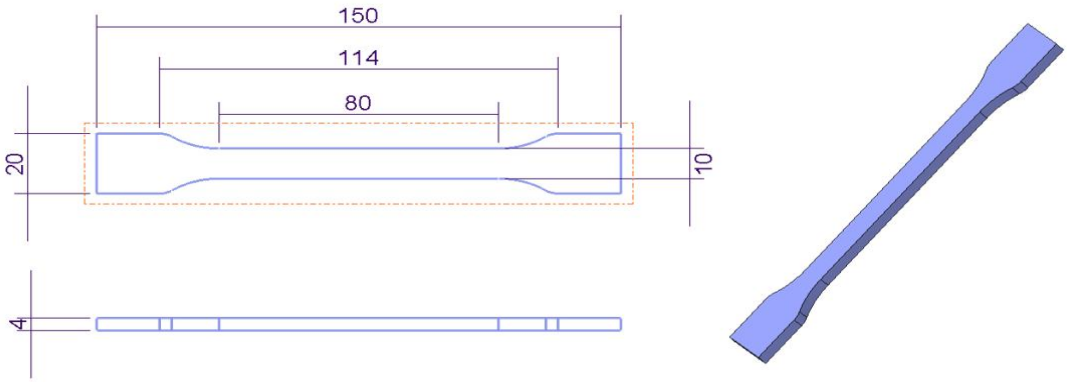
Infill Density: 100%

Infill Pattern: Concentric pattern

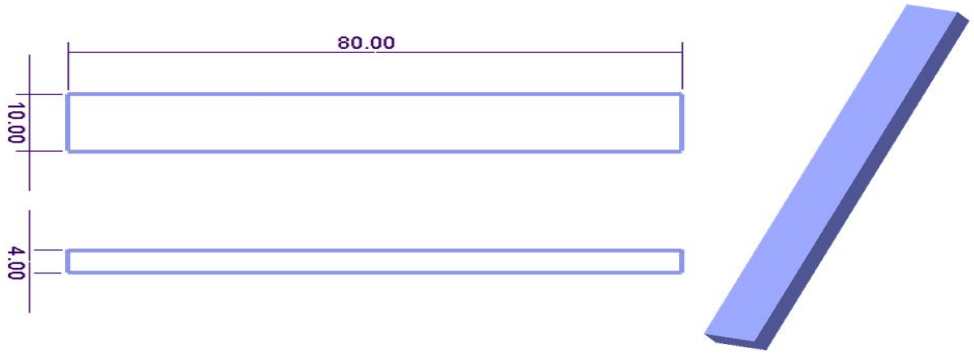
Statements: The test specimens were printed under the key parameters mentioned above. Before testing, all specimens

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

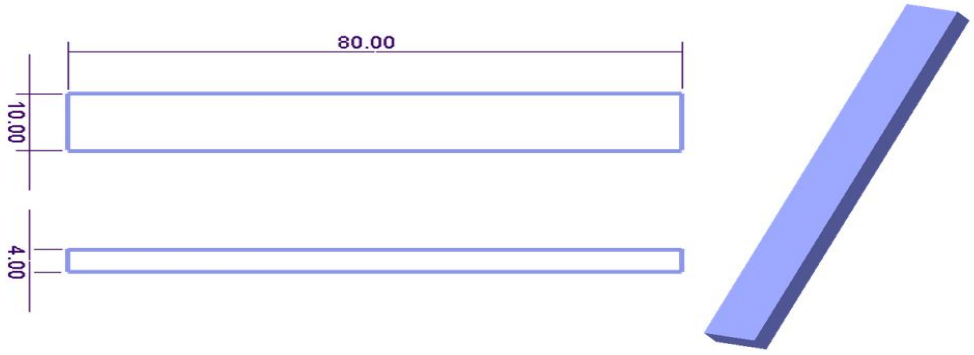
## 1. Tensile Testing




## 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.