snapmaker | PLA Translucent

Technical Data Sheet

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1 Filament Introduction

Snapmaker PLA Translucent is a translucent filament designed for lighting and visual expression, delivering soft, uniform light diffusion that gives prints a frosted glass-like appearance under illumination. It retains PLA's easy-to-print nature, ensuring high success rates even for beginners, while its optimized formulation reduces stringing for a smooth, refined surface. Available in a variety of vibrant translucent colors, it meets diverse creative needs. Compared to standard PLA, this material is ideal for applications where both aesthetics and light effects are critical.

2 Specifications

Subjects	Data
Diameter	1.75 mm ± 0.03 mm
Net Filament Weight	1 kg
Length	337 m
Spool Material	Cardboard Spool
Spool Size	Diameter: 200 mm; Height: 66 mm

3 Recommended Printing Settings

Subjects	Data
Drying Settings Before Printing	50°C for 6 h
Printing and Storage Humidity	< 20% RH (Sealed, with Desiccant)
Nozzle Size	0.2 / 0.4 / 0.6 / 0.8 mm
Nozzle Temperature	190–230°C
Bed Type	Textured PEI Plate, Smooth PEI Plate, Graphic Effect Steel Plate (Carbon-Fiber Textured)
Bed Surface Preparation	Glue
Bed Temperature	35–70°C
Cooling Fan	ON

(continued)

Subjects	Data
Printing Speed	< 200 mm/s
Retraction Length	0.2–0.6 mm
Retraction Speed	20–30 mm/s
Chamber Temperature	25–45°C
Max Overhang Angle	60°
Max Bridging Length	≤ 30 mm
Support Material	PLA

Printing Tips

1. Drying & Storage

- **Pre-Drying:** PLA Translucent filament has low moisture sensitivity and generally does not require drying. However, pre-drying is recommended for optimal print results. The recommended setting is 50°C for 6 hours.
- **Storage:** When not in use, we recommend keeping the filament away from direct sunlight in a sealed container with desiccant.

2. Printing

- **Moisture Troubleshooting:** If you hear popping or crackling sounds during extrusion, accompanied by excessive bubbles on the print surface and reduced translucency, the filament is damp. Please dry it before printing.
- **Achieving Maximum Translucency:** If you want your prints to be highly translucent, you can apply the following *settings. (Note: Achieving glass-like transparency is inherently challenging with FDM 3D printing, especially for complex geometries.)*
  - **Reduce all speed settings and set them to the same value.** *(Note: This will increase total print time.)*
  - **Slightly increase the nozzle temperature.**
  - **Slightly lower the layer height.**

• **Slightly increase the Flow Ratio.**

• **Turn off all cooling fans** to prevent uneven shrinkage caused by over-cooling.

- **Infill Settings:**

• **For shell-like models** (e.g., translucent lampshades): Enable Spiral Vase mode for optimal clarity.

• **For solid models with a certain thickness:** Increase the infill density as needed to reduce light scattering caused by internal gaps. A 100% infill density can further reduce internal gaps but will significantly increase printing time and material consumption.

4 Properties

Physical Properties

Subjects	Testing Methods	Data
Density	ISO 1183, GB/T 1033	1.238 ± 0.002 g/cm³
Melt Index	210°C, 2.16 kg	10.65 ± 0.521 g/10 min
Melting Temperature	DSC, 10°C/min	N/A
Glass Transition Temperature	DSC, 10°C/min	60°C
Decomposition Temperature	TGA, 20°C/min	N/A
Crystallization Temperature	DSC, 10°C/min	N/A
Vicat Softening Temperature	ISO 306, GB/T 1633	62°C
Heat Deflection Temperature	ISO 75, 1.8 MPa	52.9°C
Heat Deflection Temperature	ISO 75, 0.45 MPa	54.3°C
Saturated Water Absorption Rate	23°C, 70% RH	0.41%

Mechanical Properties

Subjects	Testing Methods	Data
Young's Modulus (X-Y)	ISO 527, GB/T 1040	3433.71 ± 67.310 MPa
Young's Modulus (Z)	ISO 527, GB/T 1040	3077.50 ± 49.116 MPa
Tensile Strength (X-Y)	ISO 527, GB/T 1040	54.83 ± 1.357 MPa
Tensile Strength (Z)	ISO 527, GB/T 1040	37.00 ± 0.519 MPa
Breaking Elongation Rate (X-Y)	ISO 527, GB/T 1040	4.71 ± 1.827%
Breaking Elongation Rate (Z)	ISO 527, GB/T 1040	1.76 ± 0.175%
Bending Modulus (X-Y)	ISO 178, GB/T 9341	3295.13 ± 121.030 MPa
Bending Modulus (Z)	ISO 178, GB/T 9341	3179.77 ± 117.829 MPa

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Bending Strength (X-Y)	ISO 178, GB/T 9341	93.60 ± 0.511 MPa
Bending Strength (Z)	ISO 179, GB/T 9341	64.52 ± 0.349 MPa
Impact Strength (X-Y)	ISO 179, GB/T 1043	17.47 ± 0.615 kJ/m² 2.82±0.074 kJ/m² (Notched)
Impact Strength (Z)	ISO 179, GB/T 1043	1.65 ± 0.46 kJ/m² (Notched)

Other Physical and Chemical Properties

Subjects	Data
Odor	Odorless
Composition	Polylactic Acid (PLA)
Skin Hazards	N/A
Chemical Stability	Stable under normal conditions
Solubility	Insoluble in Water
Resistance to Acid	Weak Acids: Good
Resistance to Alkali	Non-Resistant
Resistance to Organic Solvent	Non-Resistant
Resistance to Oil and Grease	Fair
Flammability	Flammable
Combustion Products	Water, Carbon Oxides
Odor of Combustion Products	Odorless

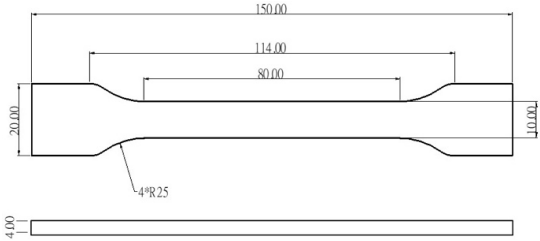
5 Specimen Test

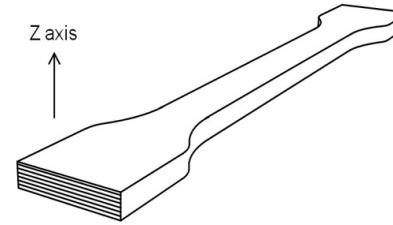
Specimen Printing Conditions

Subjects	Data
Nozzle Temperature	230°C
Bed Temperature	55°C
Printing Speed	50 mm/s
Infill Density	100%

Based on 0.4 mm nozzle. Printing conditions may vary with different nozzle diameters.

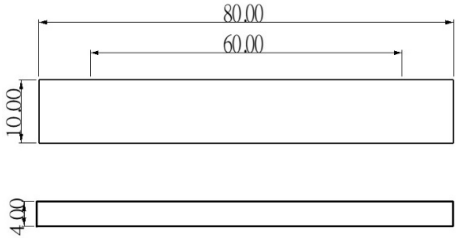
Tensile Testing Specimen

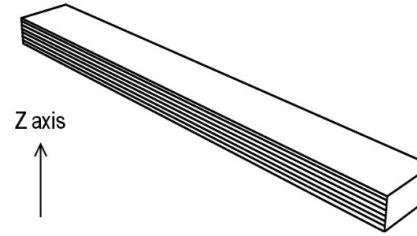




ISO 527, GB/T 1040

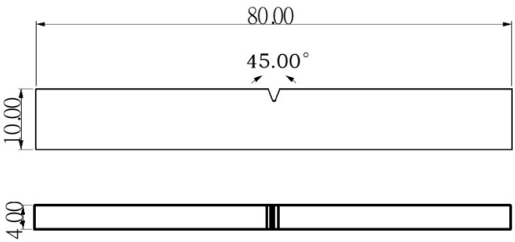
Flexural Testing Specimen

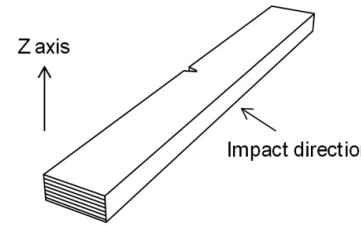




ISO 178, GB/T 9341

Impact Testing Specimen

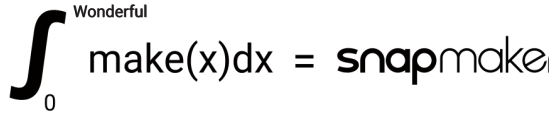




ISO 179, GB/T 1043

6 Disclaimer

The performance and printing parameters of the aforementioned filaments are obtained by Snapmaker through testing filament samples with sample 3D printers. All data provided is for reference and comparison purposes only, and does not constitute design specifications or any warranty of quality. Actual 3D printing quality and final part performance are subject to various factors including, but not limited to, printer equipment, model design, environmental conditions, and printing parameters. Users shall independently evaluate the compliance and safety of printed models and finished parts, including legal compliance, application safety, and structural reliability. Snapmaker shall not be held liable for any direct or indirect losses arising from the use of the aforementioned filaments, including equipment damage, print failure, personal injury, and property damage.



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