PLA Datasheet

Overview

Designed for versatile prototyping and functional parts, PLA filament is a perfect material for hobbyists, educators, and engineers creating concept models, architectural mock-ups, and display pieces.

As-printed Part's Tolerance: ±300μm or 0.3%

Maximum Printing Size: 256*256*256mm

Infill Options: 15%, 30%, 50%, 65%, 85%, 100%

Color Options: 40+

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Material Properties

Density Properties	Metric	Test Standard
Density	1.21-1.23g/cm³	ISO 1183
Rheological Properties	**Metric**	**Test Standard**
Melt Flow Rate (MFR)	5-10g/10min	ISO 1133
Thermal Properties	**Metric**	**Test Standard**
Heat Deflection Temperature (HDT)	59℃	ISO 75
Vicat Softening Temperature (VST)	73℃	ISO 306

Mechanical Properties

Tensile Test:

Tensile Strength Metric	Infill	Coordinate Axes	Test Standard
42-48Mpa	100%	X-Y axes	ISO527
48-52Mpa	100%	X-Z axes	ISO527
26-29Mpa	100%	Z-X axes	ISO527
Tensile Modulus Metric	**Infill**	**Coordinate Axes**	**Test Standard**
2800-3100Mpa	100%	X-Y axes	ISO527
2900-3100Mpa	100%	X-Z axes	ISO527
2300-2600Mpa	100%	Z-X axes	ISO527
Elongation at Break Metric	**Infill**	**Coordinate Axes**	**Test Standard**
10-15%	100%	X-Y axes	ISO527
10-20%	100%	X-Z axes	ISO527
3-5%	100%	Z-X axes	ISO527

Flexural Test:

Flexural Strength Metric	Infill	Coordinate Axes	Test Standard
73-80Mpa	100%	X-Y axes	ISO178
81-84Mpa	100%	X-Z axes	ISO178
46-54Mpa	100%	Z-X axes	ISO178
Flexural Modulus Metric	**Infill**	**Coordinate Axes**	**Test Standard**
3000-3200Mpa	100%	X-Y axes	ISO178
3200-3300Mpa	100%	X-Z axes	ISO178
2300-2700Mpa	100%	Z-X axes	ISO178

Impact Test:

Un-notched Impact Strength Metric	Infill	Coordinate Axes	Test Standard
19-23KJ/m²	100%	X-Y Axes	ISO179
24-28KJ/m²	100%	X-Z Axes	ISO179

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4-14KJ/m²	100%	Z-X Axes	ISO179
Notched Impact Strength Metric	**Infill**	**Coordinate Axes**	**Test Standard**
4-6KJ/m²	100%	X-Y Axes	ISO179
4-7KJ/m²	100%	X-Z Axes	ISO179
2-3KJ/m²	100%	Z-X Axes	ISO179

Pros

With consistent extrusion and strong layer adhesion, FDM printed PLA delivers precise, stiff parts with crisp details that's easy to sand or paint. Its low warp tendency and biodegradable, odor-free composition also make it an excellent choice for desktop prototyping and educational environments.

Cons

PLA prints can soften or deform when exposed to temperatures above 60 °C, making them unsuitable for high-heat applications. Its hygroscopic nature also causes the filament to absorb moisture from the air.

Applications

Concept Prototypes Architectural Scale Models Educational Tools

Decorative Items Cosplay props, masks, and costume accessories

Customized Consumer Goods Holiday Decorations DIY Household Fixtures

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