POLYNOVA
3D PRINTING MATERIALS

PLA2+

A202

Available Color

Technical Data Sheet

High impact resistance, high elongation at break, high bonding strength and high printing accuracy.The toughness is better than PETG, and it has good printability , suitable for printing mechanical parts with toughness and precision requirements .

Material Status	Mass Production		
Characteristics	• High toughness • Multiple color • Excellent printability		
Applications	• Mechanical engineering	• The automobile industry	• Electrical and electronic
Form	• Filament		
Processing method	• 3D Print, FDM Print		

	Testing	Method	Typical value
Physical Properties			
Density	ISO 1183,GB/T 1033	1.24	g/cm3
Melt Flow Index	ISO 1133	3.91	210°C/2.16kg
Mechanical Properties			
Tensile Strength (X-Y)	ISO 527,GB/T 1040	48.20	MPa
Tensile Strength (Z)		43.93	MPa
Elongation at Break (X-Y)	ISO 527,GB/T 1040	5.11	%
Elongation at Break (Z)		4.91	%
Young'Modulus (X-Y)	ISO 527,GB/T 1040	3036	MPa
Young'Modulus (Z)		2683.67	MPa
Bending Strength (X-Y)	ISO 178,GB/T 9341	82.60	MPa
Bending Strength (Z)		2713.39	MPa
Bending Modulus (X-Y)	ISO 178,GB/T 9341	3392.60	MPa
Bending Modulus (Z)		70.28	MPa
Impact strength (X-Y)	ISO 179,GB/T 1043	19.8	KJ/m2
Impact strength (Z)		N/A	
Thermal Properties			
Heat distortion Temperature	ISO 75 0.45MPa°C	59.3	°C
Glass Transition	DSC,10°C/min	62	°C
Melting Point	DSC,10°C/min	150	°C
Electrical Properties			
Surface Resistance	DIN IEC 60093	N/A	

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Recommended printing parameters	
Print Temperature	200-220°C
Build Platform	40-60°C
Cool Fan	On
Printing Speed	100-300mm/s

Based on 0.4 mm nozzle and Simplify 3D v.4.1.2. Printing conditions may vary with different nozzle diameters

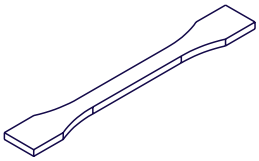
Drying Recommendations

The samples for the general test need to be dried at 55°C for at least 4 hours before printing.

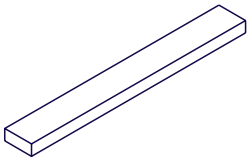
Precautions:

Remote printing needs to reduce the printing speed (≤40mm/s) to prevent potential feeding issue

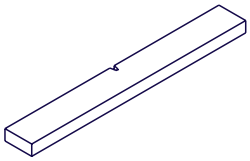
Mechanical Properties



Tensile testing specimen GB/T 1040
Testing specimen GB/T 1043



Bending testing specimen GB/T 9341



Impact

The physical properties, mechanical properties, thermal properties, and electrical properties of the line are obtained based on the injection molding spline test.

Print test condition:	
Print Temperature	200°C
Build Platform Temperature	55°C
Outline/Perimeter Shells	4
Top/Bottom Layers	4
Infill Percentage	20%
Cool Fan	100%
Printing speed	45mm/s

Based on 0.4 mm nozzle and Simplify 3D v.4.1.2.

Notice

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