version 1.0
08/2024

Technical Data Sheet （TDS）

Hyper Speed Silk PLA

The Eryone High-Speed Silk PLA is a material with a thoroughly improved formulation, offering significantly enhanced printing speeds compared to standard silk PLA, reaching up to 500 mm/s. Additionally, its tensile strength has been notably increased, with the Z-axis tensile strength reaching 20 MPa. This high-speed silk PLA material delivers a more lustrous finish, presenting a silk-like appearance. The brightness can be controlled by adjusting the temperature and speed: higher temperatures and slower printing speeds result in increased brightness.

Part I: Suggests Printing Parameters

Parameter	Set up
Nozzle temperature	190℃-220℃
Bed temperature	55-70℃
Bed material	glass, PEI, spring steel plate
Bottom printing temperature	190℃-220℃
Sealed printing	Open Printing/closed printing
Printing speed	30-500mm/s
Drying conditions	65℃-75℃，12H

Part II: Physical Properties of Materials

Property	Testing Method	Unit	Typical Value
Density(g/cm³ at 21.5 ° C)	ASTM D792 (ISO 1183, GB/T 1033)	g/cm³	1.32
Vicat Softening Temperature(° C)	ASTM D1525 (ISO 306 GB/T 1633)	℃	56
Heat distortion temperature(° C)	ASTM D648 1.8MPa 0.45MPa	℃	50
Glass transition temperature (° C)	DSC, 10 ° C/min	℃	57
Melt Index(g/10 min)	220 ° C, 10kg 240 ° C, 2.16 kg	g/10min	20±1.5

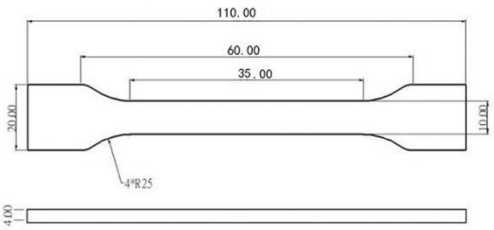
Part III: Mechanical Properties of Printed Samples

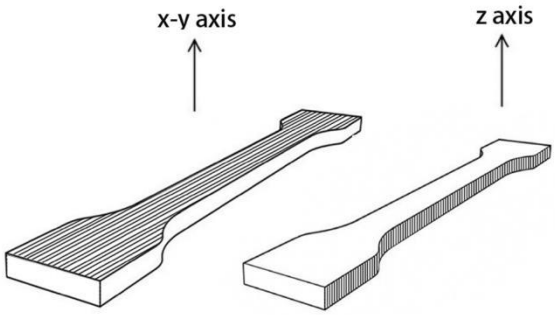
Property	Test conditions	Test standards	unit	Typical Value
Tensile strength X-Y	50mm/min	GB/T 1040.4	MPa	62.7
Elastic modulus X-Y	50mm/min	GB/T 1040.1-2006	MPa	1932.1
Elongation at break X-Y	50mm/min	GB/T 1040.4	%	2.3
Tensile strength X-Z	50mm/min	GB/T 1843	MPa	19.1
Elastic modulus X-Z	50mm/min	GB/T 1040.1-2006	MPa	1873.5
Elongation at break X-Z	50mm/min	GB/T 1040.4	%	1.9
Bending strength	2mm/min	GB/T 9341	MPa	86.7
Bending modulus	2mm/min	GB/T 9341	MPa	2917.3
Charpy Impact strenght	2.75J	GB/T 1843	kJ/m2	3.8

Note: All splines are printed under the following conditions: printing temperature=215 ° C, printing speed=80mm/s, base plate 60 ° C, filling=100%, nozzle diameter=0.4mm

TENSILE TESTING SPECIMEN

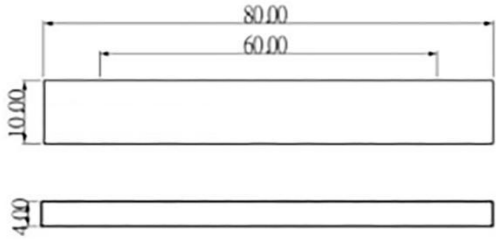
ISO 527,GB/T 1040

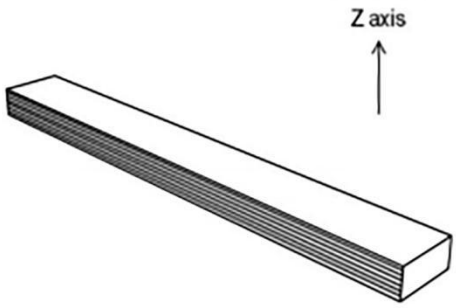




FLEXURAL TESTING SPECIMEN

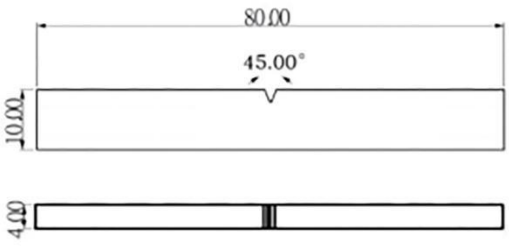
ISO 178,GB/T 9341

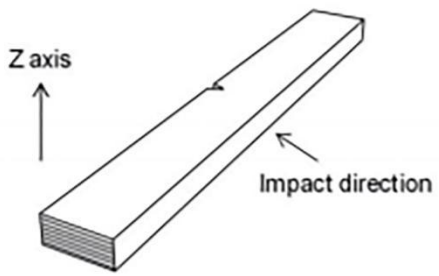




IMPACT TESTING SPECIMEN

ISO 179,GB/T 1043





Disclaimers

The values given in this data table are for reference and comparison only. They should not be used for design specifications or quality control. The actual value may vary depending on the printing conditions. The final performance of printed components depends not only on the material, but also on the component design, environmental conditions, printing conditions, and so on. Product specifications are subject to change without prior notice.