version 1.0
08/2024

Technical Data Sheet (TDS)

PA12-CF

Eryone PA12-CF is which is specially designed for 3D FDM printer. As a specific product used in 3D printing, our product shows excellent mechanical and physical properties after printed as a part.With low water absorption and easier printing, the printed parts exhibit higher dimensional accuracy, excellent heat resistance up to 185°C, as well as outstanding oil and chemical corrosion resistance, making them suitable for applications such as chemical corrosion-resistant pipelines and automotive fuel system components.The carbon fiber content is approximately 20%.

Part I: Suggests Printing Parameters

Parameter	Set up
Nozzle temperature	260-290 ℃
Bed temperature	80-100℃
Bed material	glass, PEI, spring steel plate
Bottom printing temperature	/
Sealed printing	Closed printing
Printing speed	30-100mm/s
Drying conditions	80~85℃, 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	1.06
Vicat Softening Temperature(° C)	ASTM D1525 (ISO 306 GB/T 1633)	℃	/
Heat distortion temperature(° C)	ASTM D648 0.45MPa	℃	185
Glass transition temperature (° C)	DSC, 10 ° C/min	℃	/
Melt Index(g/10 min)	210 ° C, 2.16kg. D1238	g/10min	13.5-16.4

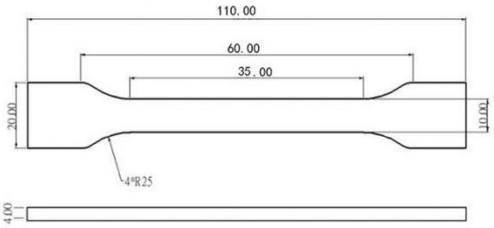
Part III: Mechanical Properties of Printed Samples

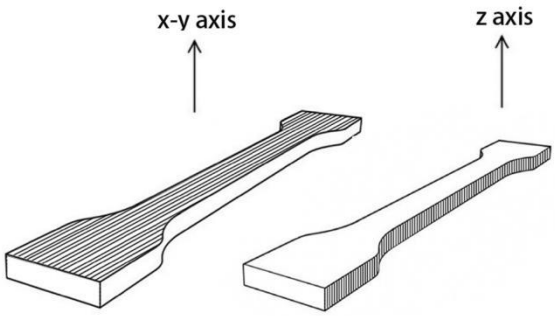
Property	Test conditions	Test standards	unit	Typical Value
Tensile strength X-Y	50mm/min	GB/T 1040.2	MPa	58-63
Tensile strength X-Z	50mm/min	GB/T 1040.2	MPa	14-16
Tensile Modulus X-Y	5mm/min	D3638	MPa	495-592
Elongation X-Y	5mm/min	D3638	%	14.8-17.1
Bending strength X-Y	2mm/min	D790	MPa	96-102
Bending modulus X-Y	2mm/min	D790	MPa	3193-3484
Charpy Impact strenght	2.75J	GB/T 1843	kJ/m2	16.4-19.2

Note: All splines are printed under the following conditions: printing temperature=280 ° C, printing speed=60mm/s, base plate 100 ° C, filling=100%, nozzle diameter=0.4mm

TENSILE TESTING SPECIMEN

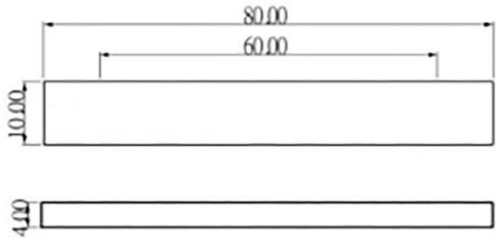
ISO 527,GB/T 1040

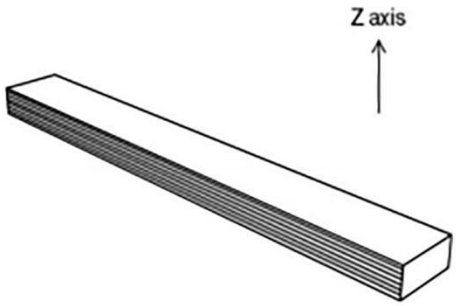




FLEXURAL TESTING SPECIMEN

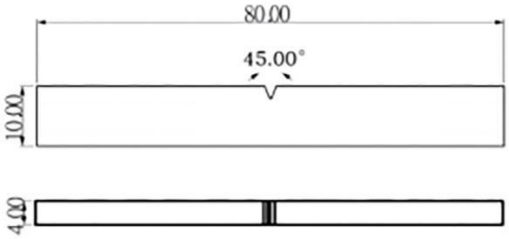
ISO 178,GB/T 9341

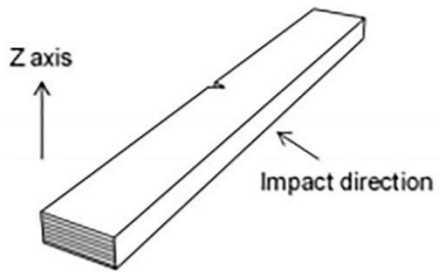




IMPACT TESTING SPECIMEN

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.