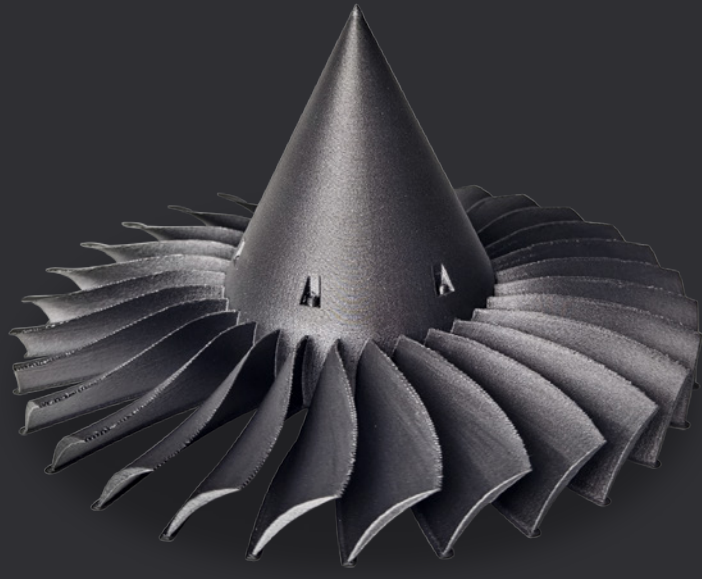


TECHNICAL DATA SHEET

V1.0



MINGDA PPS-CF10

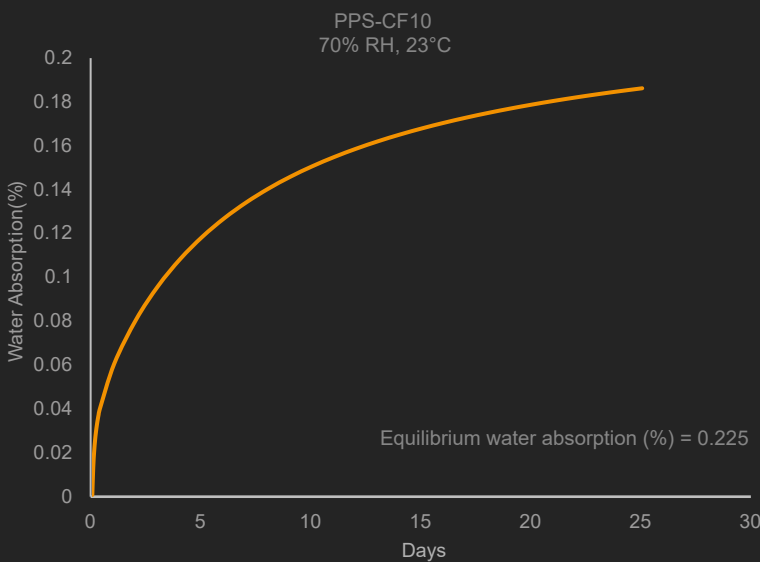
MINGDA PPS-CF10 is a carbon fiber reinforced PPS (Polyphenylene sulfide) filament, with minimal warping during printing and no need for a heated chamber. With exceptional mechanical strength, high heat resistance, chemical resistance, V0 flame retardancy, and moisture insensitivity, it's specifically designed for professionals operating in extreme conditions.

www.3dmingda.com

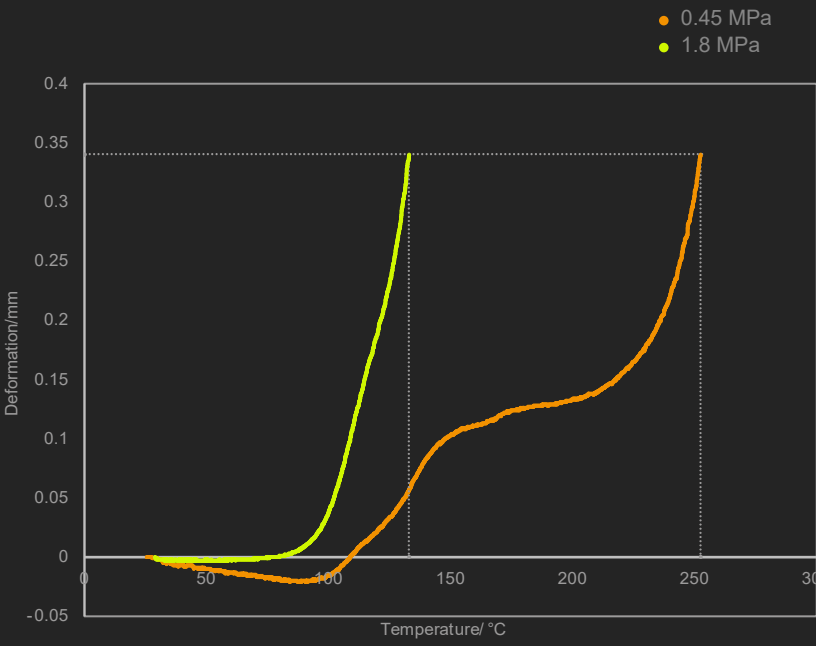
PHYSICAL PROPERTIES

PROPERTY	TESTING METHOD	TYPICAL VALUE
Density	ISO1183, GB/T1033	1.29 g/cm ³ at 23°C
Melt index	300°C, 2.16 kg	26.2 g/10min
Flame retardancy	UL 94, 1.5mm	V0
Surface Resistivity (Ω)	ANSI ESD S11.11	OL, >10 ² Ω

MOISTURE ABSORPTION CURVE



HDT CURVE



THERMAL PROPERTIES

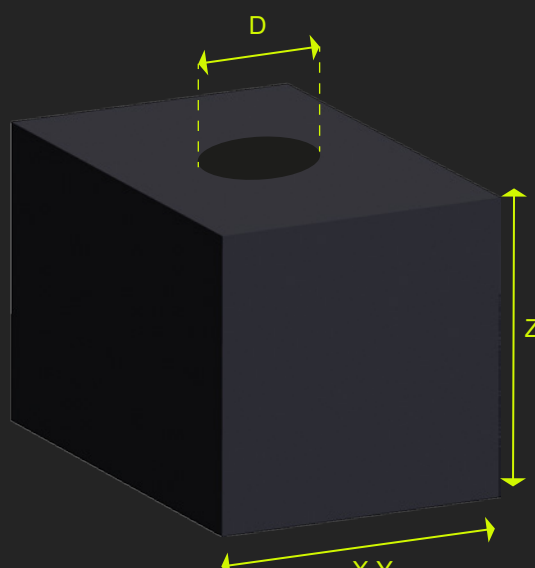
PROPERTY	TESTING METHOD	TYPICAL VALUE
Glass transition temp.	DSC, 10°C/min	97.7 °C
Melting temperature	DSC, 10°C/min	279.7 °C
Crystallization temp.	DSC, 10°C/min	218.8 °C
Decomposition temp.	TGA, 20°C/min	502.7 °C
Vicat softening temp.	ISO 306, GB/T 1633	267.5 °C
Heat deflection temp.	ISO 75 1.8MPa	133.0 °C
Heat deflection temp.	ISO 75 0.45MPa	252.5 °C

MECHANICAL PROPERTIES

PROPERTY	TESTING METHOD	TYPICAL VALUE
Young's modulus (X-Y)	ISO 527, GB/T 1040	5446.7 ± 149.0 MPa
Young's modulus (Z)		2790.0 ± 152.6 MPa
Tensile strength (X-Y)	ISO 527, GB/T 1040	59.4 ± 1.3 MPa
Tensile strength (Z)		32.0 ± 5.1 MPa
Elongation at break (X-Y)	ISO 527, GB/T 1040	1.4 ± 0.1%
Elongation at break (Z)		1.6 ± 0.2%
Bending modulus (X-Y)	ISO 178, GB/T 9341	4646.9 ± 136.9 MPa
Bending modulus (Z)		2619.3 ± 155.3 MPa
Bending strength (X-Y)	ISO 178, GB/T 9341	94.3 ± 1.9 MPa
Bending strength (Z)		30.0 ± 5.2 MPa
Charpy impact strength (X-Y) notched	ISO 179, GB/T 1043	5.3 ± 0.2 kJ/m ²
Charpy impact strength (X-Y) un-notched		11.4 ± 0.7 kJ/m ²
Charpy impact strength (Z) un-notched		4.1 ± 1.3 kJ/m ²

*All specimens were annealed at 125°C for 16h.

SHRINKAGE TESTING



	MODEL SIZE	AFTER PRINTING	AFTER ANNEALING
X-Y	40mm	39.95mm	39.96mm
Z	40mm	39.94mm	39.90mm
Diameter	10mm	9.79mm	9.79mm

*Model infill 30%

RECOMMENDED PRINTING CONDITIONS

Nozzle temperature	310-350 °C
Build plate temperature	80-90 °C
Chamber temperature	Room temp.
Cooling fan	OFF

Printing speed	Up to 300mm/s
Drying temp. and time	100 °C/10H
Annealing temp. and time	125 °C/16H

NOTE

Abrasion of the brass nozzle happens frequently when printing MINGDA PPS-CF10. A wear-resistance nozzle, such as hardened steel and ruby nozzle, is highly recommended to be used with MINGDA PPS-CF10. MINGDA PPS-CF10 should always be stored and used under dry conditions (relative humidity below 20%).

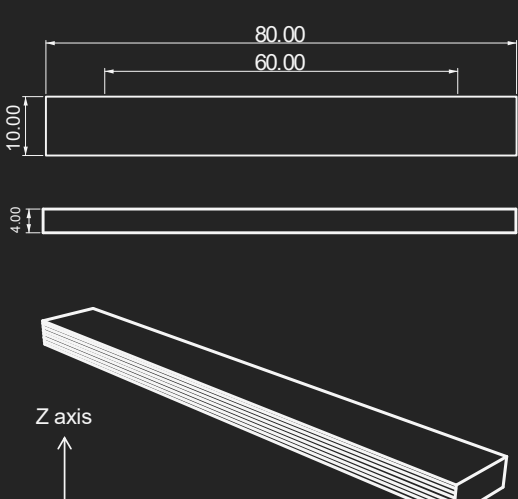
HOW TO MAKE SPECIMENS

Printing temperature	330-350 °C
Bed temperature	90 °C
Top & bottom layer	3

Infill	100%
Shell	2
Cooling fan	OFF

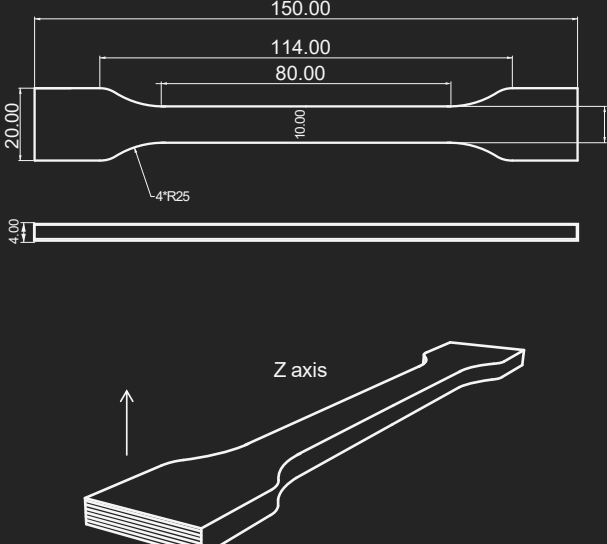
FLEXURAL TESTING SPECIMEN

ASTM D638 (ISO 527, GB/T 1040)



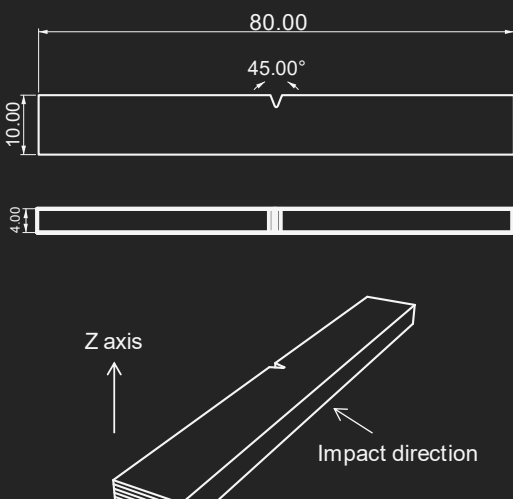
TENSILE TESTING SPECIMEN

ASTM D638 (ISO 527, GB/T 1040)



IMPACT TESTING SPECIMEN

ASTM D638 (ISO 179, GB/T 1043)



DISCLAIMER

The typical values presented in this data sheet are intended for reference and comparison purposes only. They should not be used for design specifications or quality control purposes. Actual values may vary significantly with printing conditions. End- use performance of printed parts depends not only on materials, but also on part design, environmental conditions, printing conditions, etc. Product specifications are subject to change without notice. Each user is responsible for the safety, lawfulness, technical suitability, and disposal/ recycling practices of MINGDA materials for the intended application. MINGDA makes no warranty of any kind, unless announced separately, to the fitness for any use or application. MINGDA shall not be made liable for any damage, injury or loss induced from the use of MINGDA materials in any application.