TECHNICAL DATA SHEET

V1.0

FIBERON

By polymaker

FIBERON™ ASA-CF08

Fiberon™ ASA-CF08 is an easy-to-print, multi-colored outdoor material. It has far more printability than ordinary ASA and has better mechanical properties by adding 8% carbon fiber. It also has heat resistance close to 100°C, which is the first choice of outdoor reinforcement material.

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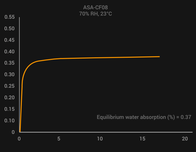
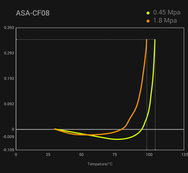
PHYSICAL PROPERTIES

PROPERTY	TESTING METHOD	TYPICAL VALUE
Density	ISO1183, GB/T1033	1.09 g/cm³ at 23°C
Melt index	240°C, 5 kg	13.9 g/10min
Flame retardancy	UL 94, 1.5mm	HB
Surface Resistivity (Ω)	ANSI ESD S11.11	OL, >10^{13} Ω

MOISTURE ABSORPTION CURVE



HDT CURVE



THERMAL PROPERTIES

PROPERTY	TESTING METHOD	TYPICAL VALUE
Glass transition temp.	DSC, 10°C/min	106.6°C
Melting temperature	DSC, 10°C/min	N/A
Crystallization temp.	DSC, 10°C/min	N/A
Decomposition temp.	TGA, 20°C/min	328.4°C
Vicat softening temp.	ISO 306, GB/T 1633	110.8°C
Heat deflection temp.	ISO 75 1.8MPa	97.3°C
Heat deflection temp.	ISO 75 0.45MPa	103.0°C

MECHANICAL PROPERTIES

PROPERTY	TESTING METHOD	TYPICAL VALUE
Young's modulus (X-Y)	ISO 527, GB/T 1040	3611.7 ± 181.1 MPa
Young's modulus (Z)		1903.8 ± 71.0 MPa
Tensile strength (X-Y)	ISO 527, GB/T 1040	43.5 ± 0.7 MPa
Tensile strength (Z)		25.0 ± 0.4 MPa
Elongation at break (X-Y)	ISO 527, GB/T 1040	1.8 ± 0.1%
Elongation at break (Z)		2.7 ± 0.2%
Bending modulus (X-Y)	ISO 178, GB/T 9341	3265.0 ± 56.5 MPa
Bending modulus (Z)		1743.4 ± 59.9 MPa
Bending strength (X-Y)	ISO 306, GB/T 1633	69.1 ± 1.62 MPa
Bending strength (Z)		46.5 ± 0.8 MPa
Charpy impact strength (X-Y) notched	ISO 179, GB/T 1043	5.5 ± 0.14 kJ/m²
Charpy impact strength (X-Y)un-notched		11.0 ± 0.5 kJ/m²
Charpy impact strength (Z) un-notched		11.9 ± 0.9 kJ/m²

RECOMMENDED PRINTING CONDITIONS

Nozzle temperature	260-280 °C	Printing speed	Up to 350mm/s
Build plate temperature	90-100°C	Drying temp. and time	90 °C/6H
Chamber temperature	Room temp.	Annealing temp. and time	N/A
Cooling fan	OFF		

PolySupport™ for PA12

Recommended support material

NOTE

Abrasion of the brass nozzle happens frequently when printing Fiberon™ ASA-CF08. Normally, the life of a brass nozzle would be approximately 5h. A wear-resistance nozzle, such as hardened steel and ruby nozzle, is highly recommended to be used with Fiberon™ ASA-CF08.

Fiberon™ ASA-CF08 is sensitive to moisture and should always be stored and used under dry conditions (relative humidity below 20%).

Fiberon™ ASA-CF08 may release odors during printing. Please place the printer in a well-ventilated area, and an enclosed printer is recommended for printing.

After printing it is recommended to wait for the parts to cool naturally before removing them.

Fiberon™ ASA-CF08 contains 8% carbon fiber as reinforcement, the filament itself is easy to be brittle, please make sure that the bending diameter is more than 60mm when using it.

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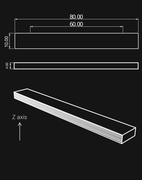
HOW TO MAKE SPECIMENS

Printing temperature	270°C	Infill	100%
Bed temperature	90°C	Shell	2
Top & bottom layer	3	Cooling fan	OFF

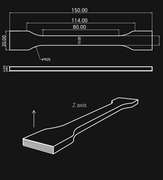
FLEXURAL TESTING SPECIMEN

ASTM D638 (ISO 527, GB/T 1040)



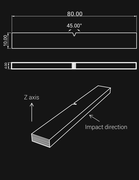
TENSILE TESTING SPECIMEN

ASTM D638 (ISO 527, GB/T 1040)



IMPACT TESTING SPECIMEN

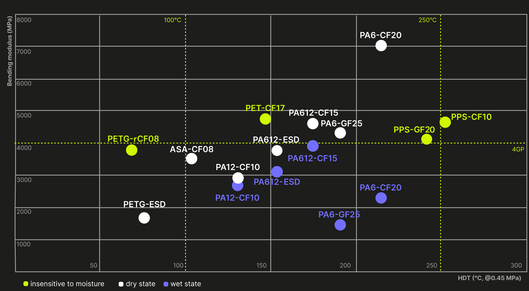
ASTM D638 (ISO 179, GB/T 1043)



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 determining the safety, lawfulness, technical suitability, and disposal/ recycling practices of Polymaker materials for the intended application. Polymaker makes no warranty of any kind, unless announced separately, to the fitness for any use or application. Polymaker shall not be made liable for any damage, injury or loss induced from the use of Polymaker materials in any application.

FIBERON

MATERIALS COMPARISON

Heat resistance - Stiffness