



FIBERON

By  polymaker

# TECHNICAL DATA SHEET

V1.0



## FIBERON™ ASA-CF08

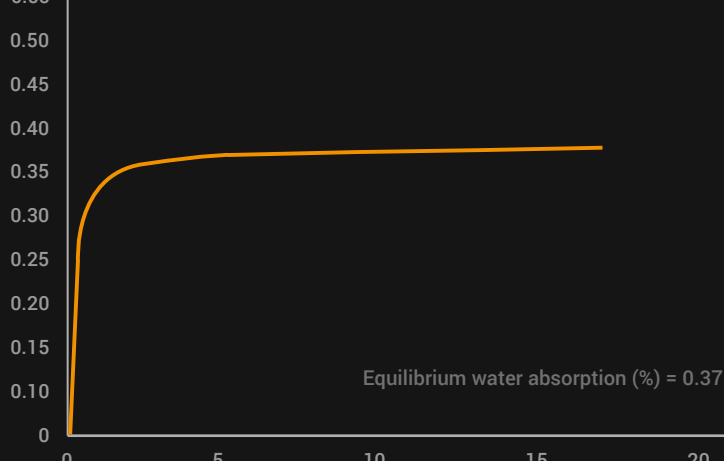
Fiberon™ ASA-CF08 is an easy-to-print, multi-colored outdoor material. It has far more printability than ordinary ASA and has better mechanical properties by adding 8% carbon fiber. It also has heat resistance close to 100°C, which is the first choice of outdoor reinforcement material.

[WWW.FIBERON3D.COM](http://WWW.FIBERON3D.COM)

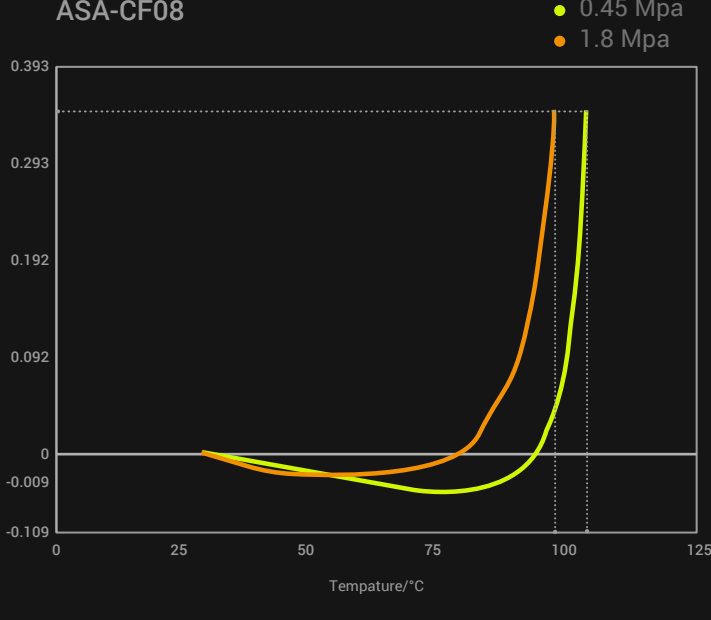
## PHYSICAL PROPERTIES

| 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 <sup>12</sup> 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 |
| Build plate temperature | 90-100°C   |
| Chamber temperature     | Room temp. |
| Cooling fan             | OFF        |

|                          |               |
|--------------------------|---------------|
| Printing speed           | Up to 350mm/s |
| Drying temp. and time    | 90 °C/6H      |
| Annealing temp. and time | N/A           |



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 9h. A wear-resistance nozzle, such as hardened steel and ruby nozzle, is highly recommended to be used with Fiberon™ ASA-CF08.

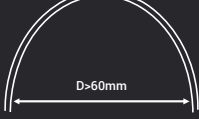
Fiberon™ ASA-CF08 is sensitive to moisture and should always be stored and used under dry conditions (relative humidity below 20%).

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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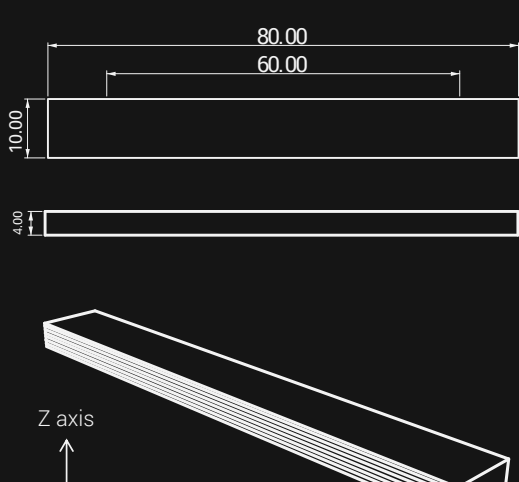
## HOW TO MAKE SPECIMENS

|                      |       |
|----------------------|-------|
| Printing temperature | 270°C |
| Bed temperature      | 90°C  |
| Top & bottom layer   | 3     |

|             |      |
|-------------|------|
| Infill      | 100% |
| Shell       | 2    |
| Cooling fan | OFF  |

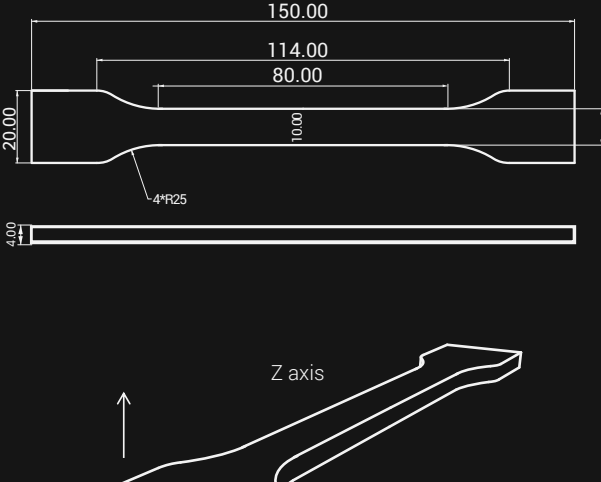
### FLEXURAL TESTING SPECIMEN

ASTM D638 (ISO 527, GB/T 1040)



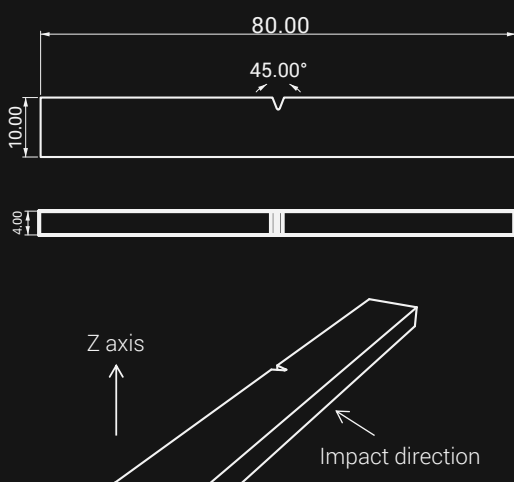
### TENSILE TESTING SPECIMEN

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 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.



## MATERIALS COMPARISON

Heat resistance - Stiffness

