

## Technical Data Sheet

### ABSGF10 Filament

ABSGF10 is an FFF 3D printing filament, which is produced using a modified ABS material reinforced with 10% glass fiber. It offers excellent dimensional stability, bending strength, and rigidity, along with outstanding heat resistance.

### Features:

Dimensional stability/High rigidity/Heat resistance.

### Properties:

| Physical Properties              | Test Method | Units   | Typical Value |
|----------------------------------|-------------|---------|---------------|
| Density                          | ISO 1183    | g/cm³   | 1.08~1.09     |
| Melt Flow Rate (MFR) (220℃/10Kg) | ISO 1133    | g/10min | 20~30         |
| Water Absorption (23℃/24h)       | ISO 62      | %       | <1            |
| Mechanical Properties            |             |         |               |
| Tensile Strength (X-Y)           | ISO 527     | Mpa     | 35.5~36.5     |
| Elongation at Break (X-Y)        | ISO 527     | %       | 3~3.5         |
| Bending Modulus (X-Y)            | ISO 178     | Mpa     | 3360~3456     |
| Bending Modulus (X-Z)            |             |         | 1805~2075     |
| Bending Strength (X-Y)           | ISO 178     | Mpa     | 81~83.5       |
| Bending Strength (X-Z)           |             |         | 45~48.6       |
| Izod Impact Strength (X-Y)       | ISO 180     | KJ/m²   | 8.2~8.6       |
| Izod Impact Strength (X-Z)       |             |         | 6~7.3         |
| Thermal Properties               |             |         |               |
| HDT@ 0.455 MPa (66 psi)          | ISO 75      | ℃       | 88            |
| Continuous Service Temperature   | IEC 60216   | ℃       | 85            |

## Testing Specimen Printing Conditions:

|                           |                                                |
|---------------------------|------------------------------------------------|
| Test Equipment            | Flashforge Guider 3 Ultra                      |
| Nozzle Diameter           | 0.4mm                                          |
| Nozzle Temperature        | 240 °C                                         |
| Printing Speed            | 200mm/s                                        |
| Infill Density            | 100%                                           |
| Infill Pattern            | Concentric                                     |
| Standard Testing Specimen | Specific dimensions are shown in Attachment 1. |

## Recommended Printing Conditions:

| Parameter                        |                                                         |
|----------------------------------|---------------------------------------------------------|
| Nozzle Temperature               | 220~260°C (240°C recommended)                           |
| Build Platform Temperature       | 100~120°C (110°C recommended)                           |
| Build Surface Material           | Tempered glass, BuildTak, Carbon fiber board            |
| Nozzle Diameter                  | φ0.4/0.6mm (φ0.4mm recommended)                         |
| Nozzle & Gear Material           | Hardened steel                                          |
| Cooling Fan                      | 0~20%                                                   |
| Layer Thickness                  | 0.12~0.3mm                                              |
| Printing Speed                   | 40~250mm/s (Higher speeds require higher temperatures.) |
| Travel Speed                     | 60~350mm/s                                              |
| Ambient Temperature for Printing | Room temperature~60°C                                   |
| Retraction Length                | 0.5~2mm                                                 |
| Retraction Speed                 | 30~50mm/s                                               |



## **Cautions:**

In order to prevent moisture absorption and contamination, supplied packaging should be kept closed and undamaged. For the same reason, partially used filaments should be re-sealed before storage.

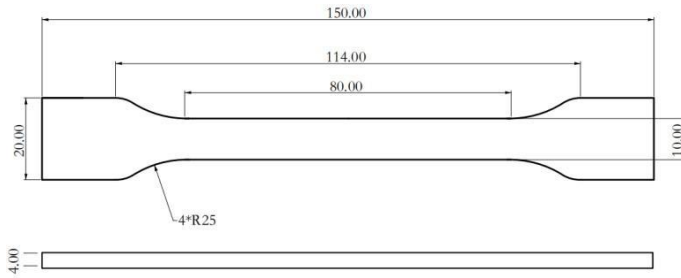
As the ABSGF10 filament absorbs moisture easily due to the added glass fiber, it should be dried before being used. Using a hot dry air oven at 80°C for at least 5 hours is recommended in order to ensure the print success rate and quality.

After the printing process, it is recommended to dry the model in the oven at 80°C for 1-3 hours to increase the strength of the model.

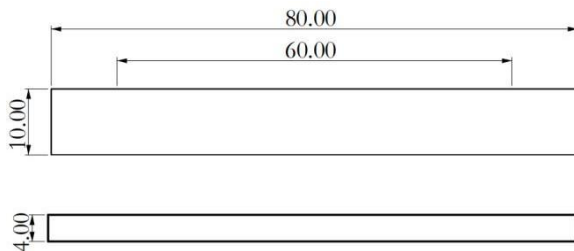
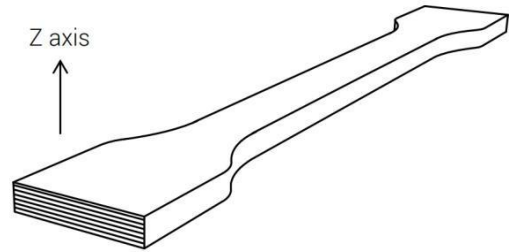
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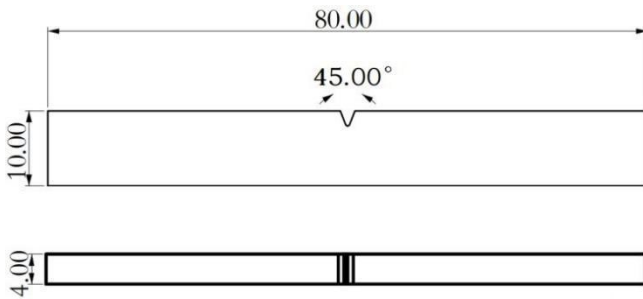
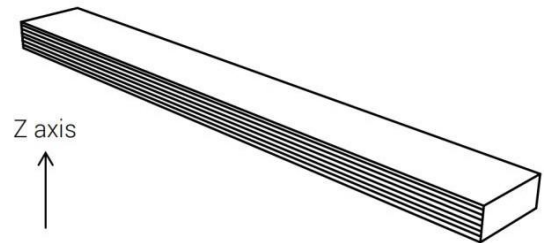
## Attachment 1: Testing Specimen Size and Printing Direction



Tensile testing specimen; ASTM D638 (ISO 527, GB/T 1040)



Flexural testing specimen; ASTM D790 (ISO 178, GB/T 9341)



Impact testing specimen; ASTM D256 (ISO 179, GB/T 1043)

