



# BEDROCK 3D Foaming TPU

Less Material. More Output.

Meet our Foaming TPU.

## Technical Documentation Sheet

version 1.0





## Technical Data Sheet

### Foaming TPU

Less Material. More Output. Meet our Foaming TPU.

BEDROCK 3D Foaming TPU filament: Unlock the performance potential of foamed prints with lightweight flexibility, leather-like surfaces, and excellent shock absorption.

#### Filament Properties

|                            |                              |  |  |  |
|----------------------------|------------------------------|--|--|--|
| Filament Diameter          | 1.75 mm                      |  |  |  |
| Average diameter Tolerance | ±0.050 mm                    |  |  |  |
| Average ovality            | <0.050 mm                    |  |  |  |
| Available Spool size       | 750 g                        |  |  |  |
| Available colors           | Graphite Black, Blue, Orange |  |  |  |

#### Spool Properties

|                |         |  |  |  |
|----------------|---------|--|--|--|
| Spool size     | 750 g   |  |  |  |
| Outer diameter | 200 mm  |  |  |  |
| Inner diameter | 50.5 mm |  |  |  |
| Width          | 55 mm   |  |  |  |

#### Recommended 3D-Print processing parameters

#### Used for test specimens

|                           |                    |                    |
|---------------------------|--------------------|--------------------|
| Printer                   | FFF printer        | Prusa MK4s         |
| Nozzle Temperature        | 240 – 250 °C       | 250 °C             |
| Build Chamber Temperature | -                  | -                  |
| Bed Temperature           | 30 °C              | 30 °C              |
| Bed Material              | Textured PEI plate | Textured PEI plate |
| Nozzle Diameter           | ≥ 0.6 mm/ 0.8 mm   | 0.6 mm             |
| Print Speed               | 40 mm/s            | 40 mm/s            |

Please check your standard and/or high-speed print profile availability for an easy start at [www.bedrock3d.com](http://www.bedrock3d.com)

**Further Recommendations**

Drying recommendations to ensure printability and best mechanical properties

No Drying required.

Warehousing

BEDROCK 3D Foaming TPU filament should be stored at 15 - 25 °C in its originally sealed package in a clean and dry environment. If the recommended storage conditions are observed the products will have a minimum shelf life of 12 months.

Mechanical properties

The reduction of material due to foaming leads to a drop of the ultimate strength, compared to a non-foamed BEDROCK 3D TPU.

| General Properties | Standard   | Average Values         |
|--------------------|------------|------------------------|
| Filament Density   | ISO 1183-1 | 1133 kg/m <sup>3</sup> |

| Tensile Properties<br>0.6-nozzle 0.5-Layer height 0.1-line width. | Standard | Average Values |              |              |
|-------------------------------------------------------------------|----------|----------------|--------------|--------------|
|                                                                   |          | XY-Direction   | XZ-Direction | ZX-Direction |
| Tensile strength                                                  | ISO 527  | 10.53 MPa      | -            | 1.88 MPa     |
| Elongation at Break                                               | ISO 527  | 368%           | -            | 192%         |
| Young's Modulus                                                   | ISO 527  | 31.4 MPa       | -            | 2.11 MPa     |

| Tensile Properties<br>0.6-nozzle 0.3-Layer height 0.6-line width. | Standard | Average Values |              |              |
|-------------------------------------------------------------------|----------|----------------|--------------|--------------|
|                                                                   |          | XY-Direction   | XZ-Direction | ZX-Direction |
| Tensile strength                                                  | ISO 527  | 16.32 MPa      | -            | 1.83 MPa     |
| Elongation at Break                                               | ISO 527  | 415%           | -            | 213%         |
| Young's Modulus                                                   | ISO 527  | 40.9 MPa       | -            | 1 MPa        |

| Hardness and Abrasion<br>0.6-nozzle 0.3-Layer height 0.6-line width. | Standard | Typical Values |
|----------------------------------------------------------------------|----------|----------------|
|----------------------------------------------------------------------|----------|----------------|

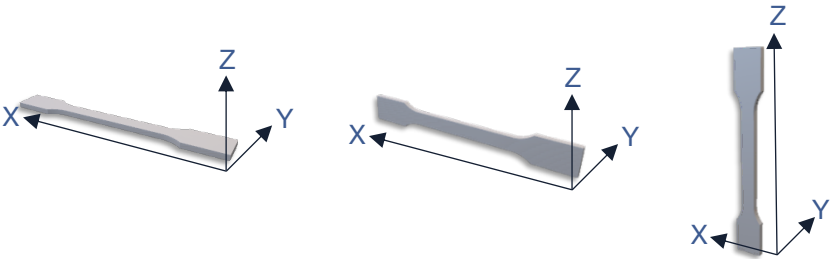
|                        |                |                       |
|------------------------|----------------|-----------------------|
| Shore Hardness A (3s)  | DIN ISO 7619-1 | 69                    |
| Shore Hardness D (15s) | DIN ISO 7619-1 | 22                    |
| Printed part density   | ISO 1183-1     | 635 kg/m <sup>3</sup> |

| Hardness and Abrasion<br>0.6-nozzle 0.5-Layer height 0.1-line width. | Standard | Typical Values |
|----------------------------------------------------------------------|----------|----------------|
|----------------------------------------------------------------------|----------|----------------|

|                        |                |                       |
|------------------------|----------------|-----------------------|
| Shore Hardness A (3s)  | DIN ISO 7619-1 | 59                    |
| Shore Hardness D (15s) | DIN ISO 7619-1 | 16                    |
| Printed part density   | ISO 1183-1     | 478 kg/m <sup>3</sup> |

### Print direction explanation

The orientation of the 3D printed part in the printer is always aligned with the longest axis first. The print direction is consistently along the Z-axis.





The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed. Values in this document are average values, measured and calculated according to the instructions in the listed standards. The used specimens are produced with the Fused Filament Fabrication method. Measured values can vary depending on used print orientation and print parameters.

Please contact us for further product information, like for example REACH, RoHS, FCS.

The safety data given in this publication is for informational purposes only and does not constitute a legally binding MSDS. The relevant MSDS can be obtained upon request from your supplier, or you may contact Forward AM Technologies Netherlands B.V. directly at [customerservice@bedrock3d.com](mailto:customerservice@bedrock3d.com)

Process materials in a well-ventilated room or use professional extraction systems.