

# Nanovia ABS AF :

## Aramid fiber reinforced

Nanovia ABS AF, is an aramid fibre reinforced FFF filament suited for the creation of non-conductive, shock resistant parts that are able to withstand temperatures up to 100 °C. The less abrasive and lighter aramid fibres, compared to both carbon and glass fibres, improve the material's mechanical properties and facilitate the printing process by reducing the warping phenomenon common with ABS.

### Advantages

- Lighter prints compared to native ABS
- Higher mechanical resistances compared to native ABS
- Low warping when printing (even less than with carbon fiber composites)
- Increased resistance to friction and shocks
- A less abrasive fiber compared to carbon and glass
- Can be smoothed with acetone

### Application recommendations

#### Storage

- Store in airtight container with desiccant, out of direct sunlight.
- Dehydrate for 4h at 60°C prior to printing after prolonged exposure to humidity.

#### Post treatment

- For an outdoor usage, we recommend that you paint your print or submit them to an anti UV treatment, such as our Nanovia smoothing solution. Aramid fibers and ABS are sensitive to UV radiation.

### Properties

#### 3D Printing

Extrusion temperature	240 – 260 °C	
Plate temperature	100 – 110 °C	
Enclosure temperature	90 °C	
Nozzle (minimum)	0.5 mm	
Printing speed	20 – 60 mm/s	
Diameter	1.75 & 2.85 mm	+/- 50 µm
Colour	Black	

#### Mechanical properties

##### Physical

Density	1.04 g/cm <sup>3</sup>	ISO 1183
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##### Tensile

Test performed at 1mm/min on 3D printed test specimens at 0°, along with the tension stress.

Young's modulus	2410 MPa	ISO 527-2/1A
Ultimate strength	30 MPa	ISO 527-2/1A
Elongation ultimate strength	1.7 %	ISO 527-2/1A

## Health and safety

### Printing

- We recommend printing Nanovia ABS AF in a room equipped with air extraction or by using appropriate breathing equipment. Whilst printing ABS produces a VOC derivative of styrene.

### Post treatment

- Standard PPE recommended (dust mask, gloves)

### Certifications

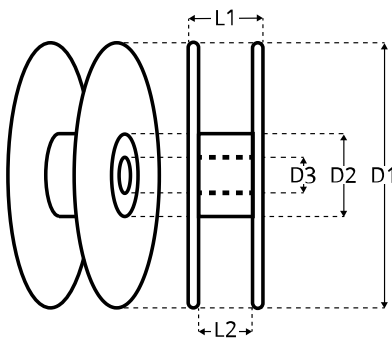
- Certification RoHS Nanovia ABS AF :



### Links

- Ultimaker Cura slicer material profile: [Download](#)

### Packaging



Vacuum packed spools, with desicant, packed in individual boxes with engraved serial number.

Other formats available on demand.

Spool	L1	L2	D1	D2	D3	Weight
500g	53	46	200	90	52	182 g
2kg	92	89	300	175	52	668 g

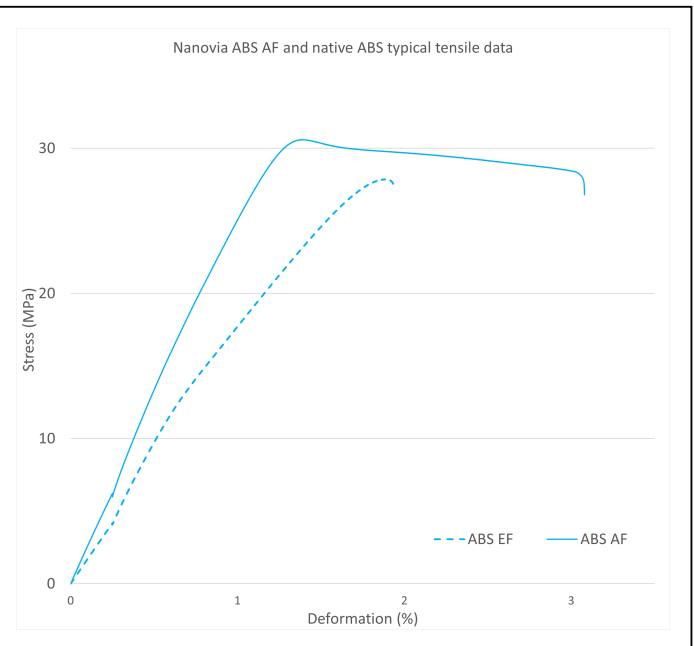
[www.nanovia.tech/ref/abs-af](http://www.nanovia.tech/ref/abs-af)

Test performed at 1mm/min on 3D printed test specimens successively at 45° and -45° per layer.

Young's modulus	1890 MPa	ISO 527-2/1A
Ultimate strength	22 MPa	ISO 527-2/1A
Elongation ultimate strength	2.4 %	ISO 527-2/1A

Test performed at 1mm/min on 3D printed test specimens at 90°, oposite to the tension stress.

Young's modulus	1860 MPa	ISO 527-2/1A
Ultimate strength	20 MPa	ISO 527-2/1A
Elongation ultimate strength	3.5 %	ISO 527-2/1A



### Impact

Charpy (notched)	17.59 kJ/m <sup>2</sup>
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### Thermal properties

Tg	110 °C
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