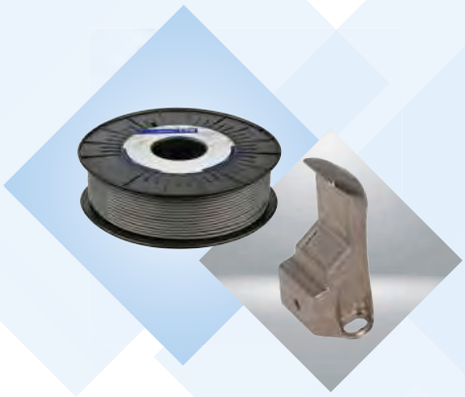
FORWARD AM
Innovating Additive Manufacturing

BASF
We create chemistry



Ultrafuse® 316L

Stainless Steel Composite Filament

Ultrafuse® 316L is a metal-polymer composite filament for the production of metal components in 316L stainless steel. It enables manufacturing using conventional Fused Filament Fabrication machines, followed by an industry-standardized debinding and sintering process. Our filament has a non-slip surface allowing it to be applied in most Bowden or direct-drive extruders. Thanks to its high flexibility, it can be fed through complex idler pulleys and multiple filament transportation systems in printers – no extra drying required.

Benefits at a Glance

- Attractive Total Cost of Ownership
- Fast material exchange
- Easily applicable filament for FFF
- Easy and affordable metal 3D printing

Example Applications

- Tooling
- Jigs and fixtures
- Functional prototypes
- Suitable for serial production to functional prototypes

Filament Properties

Filament diameter:	**1.75 mm / 2.85 mm**
Tolerances:	**±0.05 mm / ±0.075 mm**
Roundness:	**±0.05 mm / ±0.075 mm**
Bending radius:	**5 ± 1 mm / 10 ± 3 mm**
Spool length:	**250 m / 100 m**
Spool weight:	**3 kg / + 3 %**

Project Reference Chess Set

- **Description of the project and challenge:**
  - Very lightweight metal applications only possible with FFF methods
  - The high costs of subtractive methods and material waste
  - The need for material and tooling to be well suited to limited serial production

  As an example design we developed chess pieces, traditionally produced in wood or stone.
  We manufactured them additively with metal.

- **Our solutions and added value for the customer:**

  Thanks to Ultrafuse® 316L filament and our unique technology for printing these chess pieces with a low infill percentage, we enabled production of them in a highly economic and efficient way with most FFF 3D printers.

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