



# FilaTough Filament

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## FilaTough – Unbreakable Heat Resistant 3D Printing Filament

In most of the engineering projects having such properties like mechanical strength, toughness, flexibility, temperature resistance and chemical resistance is very essential. It's very hard to get all these properties in one material and most of the filaments which they can provide such extreme characteristics are usually hard to print and in most of the cases they need special setup in your printer like high temperature extruder, high temperature heated bed, environment-controlled printing and remarkably low printing speeds. And all these will result consuming more time and energy and higher maintenance and lower productivity.

Our goal at Filatech was to bring the most wanted engineering properties in one material which can be easily printed like PLA and ABS with no special print setup requirements, such properties like excellent performance in wide range of temperature up to 130 °C which is comparable with PC along with a perfect balance between hardness and flexibility to achieve an unbreakable material for your engineering projects. This all came into one product branded as **FilaTough**.

**FilaTough** is an engineering compound filament which provides high toughness, excellent balance between hardness and flexibility, superior high temperature resistance and high chemical resistance to a wide range of the chemicals.

**FilaTough** doesn't need any special setup in your 3D printer or any environment-controlled printing.

**FilaTough** withstands up to 130°C of working temperature (similar to PC) with superior high impact resistance which makes it unbreakable material.

**FilaTough** does not contain hazardous chemicals like Styrene which is in ABS or Bisphenol in PC.

Our FilaTough filaments for 3D Printing are available in a wide range of colors in both 1.75mm and 2.85mm diameter.

### OPTIONS:

Size:	1.75	mm +/- 0.03 mm
	2.85	mm +/- 0.03 mm
Color:	Full Color Range (Special Colors By Order)	
Packaging:	0.5	Kg Spools
	1.0	Kg Spools
	30	gr Loops (Sample/3D Pen)

### FEATURES:

- Engineering compound
- Low melting point for easier printing
- Lower shrinkage rate
- Higher HDT up to 130 °C
- Excellent balance of hardness and flexibility
- Good tensile strength
- Resistant to oil and chemicals
- Excellent printing quality at low process temperature
- Easy to Print in ordinary 3D printers
- Extra low moisture absorption
- Styrene Free
- Bisphenol-A Free
- Shall be printed with no cooling (Fan Off)

### SPECIFICATIONS:

Filament Material:	FilaTough	
Specific Gravity:	1.29	gr/cm <sup>3</sup>
Size:	1.75	mm +/- 0.03 mm
	2.85	mm +/- 0.03 mm

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Printing Information: Extruder: 220 – 240 °C  
Bed: 50 – 60 °C  
Working Temperature: Up to 130 °C

## ENGINEERING PROPERTIES:

Properties	Test Method	Unit	Value
Specific Gravity	ASTM D792	gr/cm <sup>3</sup>	1.3
Hardness	ASTM D2240	Shore D	63
Moisture Absorption Factor	ASTM D570	%	<0.2
Tensile Strength @ 100% <i>50mm/min (2 inch/min)</i>	ASTM D638	kgf/cm <sup>2</sup>	215
Tensile Strength @ 200% <i>50mm/min (2 inch/min)</i>	ASTM D638	kgf/cm <sup>2</sup>	220
Tensile Strength @ 300% <i>50mm/min (2 inch/min)</i>	ASTM D638	kgf/cm <sup>2</sup>	220
Elongation @ Break <i>50mm/min (2 inch/min)</i>	ASTM D638	%	>400
Flexural Strength <i>2.8mm/min</i>	ASTM D790	kgf/cm <sup>2</sup>	195
Izod Impact Test <i>Notched @ 23 °C</i>	ASTM D256	J/m	No Break
Heat Distortion Temperature <i>@0.455 Mpa (66 psi)</i>	ASTM D648	°C	130
Melting Temperature	ASTM 3418	°C	210

## CERTIFICATES:

Management : BS EN ISO 9001:2015  
Quality: CE (CE-2924)  
Environment: RoHS (UQ-5724)