

## Product name: Tough PLA

FormFutura Tough PLA is a 3D printer filament that is roughly 750% more impact resistant than regular PLA filaments.

Our Tough PLA filament is a performance PLA that combines durability with ABS-like strength properties and yet it is a significantly stiffer 3D printing material than ABS filaments. Tough PLA exhibits excellent layer adhesion allowing 3D printed objects to achieve similar mechanical strength properties compared to injection molding.

Properties	Typical value	Test Method	Test condition
<b>Physical</b>			
Specific gravity	1.21 g/cc	ISO 1183	-
Melt flow rate	8.75 g/10min	ISO 1133	210° C/2.16Kg
Water absorption	-	-	-
Moisture absorption	-	-	-
<b>Mechanical</b>			
Impact strength	29.8 KJ/m <sup>2</sup>	ISO 179	Charpy Notched @23° C (73° F)
Tensile strength	46 Mpa	ISO 527	@ yield
Tensile modulus	2750 Mpa	ISO 527	-
Elongation at break	-	-	-
Flexural strength	-	-	-
Flexural modulus	-	-	-
Hardness	-	-	-
<b>Thermal</b>			
Print temperature	± 215 - 225° C	-	-
Melting temperature	-	-	-
Viscat softening temp.	± 57° C	ISO 306	-
<b>Optical</b>			
Haze	-	-	-
Transmittance	-	-	-
Gloss	-	-	-

Product details, certifications and compliance		Diameter	Tolerance	Roundness
HS Code	39169090	1.75mm	± 0.05mm	≥ 95%
REACH compliant	Yes	2.85mm	± 0.10mm	≥ 95%
RoHS certified	Yes			

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