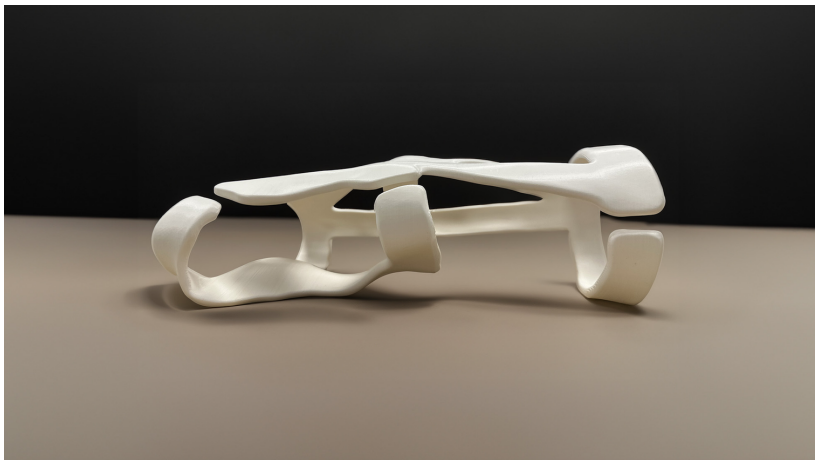
Tough PLA

STANDARD PLASTICS FOR FDM 3D PRINTING



MATERIAL NAME
Tough PLA

COLOR
Multi Color

PROCESS
FDM

PRODUCT DESCRIPTION

PLA Tough+ is a toughened and modified FDM material based on PLA. Compared with ordinary PLA, it is more resistant to falling and less likely to break. It also retains the advantages of easy printing, low cost and stable surface effect. It is suitable for rapid prototyping, educational models and light-load functional prototypes.

TYPICAL APPLICATIONS

- Low-cost rapid prototyping
- Functional prototype testing
- Appearance display
- Assembly testing

PRODUCT SAFETY

Thermoplastic printed parts should be handled according to normal workshop safety practices. Avoid high heat, open flames, and inhalation of fumes generated during post-processing or overheating.

PRODUCT DELIVERY & WAREHOUSING

- **STORAGE**
  Store parts in a dry, cool, and clean environment away from direct sunlight and high heat. Keep the material sealed before processing.

- **TRANSPORTATION**
  Pack parts securely to prevent warping, scratching, and impact. Protect from moisture and temperature swings during transit.

PROPERTIES OF PRINTED MATERIAL

Properties	Test Method	Value
Density (g/cm3)	ISO 1183	1.21 g/cm3
Water Absorption (%)	ISO 62	0.27%
Hardness	ISO 868	Shore D 81
Tensile strength (MPa)	ISO 527	XY: 34.9±1 Z: 20.9±1 MPa
Tensile modulus (MPa)	ISO 527	XY: 1860±70 Z: 1920±20 MPa
Elongation at break	ISO 527	XY: 9.4±2.3 Z: 9.3±3%
Flexural strength (MPa)	ISO 178	XY: 65±1 Z: 54±4 MPa
Flexural modulus (MPa)	ISO 178	XY: 2140±80 Z: 2066±100 MPa
Heat deflection temperature @ 0.45 MPa (deg C)	ISO 75	HDT @ 0.45 MPa: 61 deg C
Heat deflection temperature @ 1.8 MPa (deg C)	ISO 75	HDT @ 1.8 MPa: 58 deg C
Impact strength notched	ISO 179	XY: 80.6 ± 9.5 Z: 25.9 ± 3.3 KJ/m²; ISO 179 (Charpy)

Tips: Want to explore a wider range of materials? Check out *https://www.unionfab.com/materials*