

ToughONE™

Technology: **PolyJet™**



Material Description:

ToughONE™ is a PolyJet™ photopolymer material designed for functional 3D printing, delivering a balanced combination of strength, toughness, and precision. ToughONE bridges the gap between high-detail visual prototypes and durable functional parts, enabling accurate testing of form, fit, and mechanical performance.

Benefits:

- High tensile strength and impact resistance compared to standard PolyJet materials.
- Excellent surface finish and fine feature resolution typical of PolyJet™ technology.
- Balanced stiffness and elongation for durable, tough functional prototypes.
- Consistent mechanical performance with optional post-curing for enhanced properties.
- Ideal transition material from visual models to functional testing parts.

Applications:

- Functional prototypes requiring strength and toughness
- Snap-fit assemblies and enclosures
- Housings, brackets, and mechanical components
- Design verification and form-fit testing
- Low-load functional testing and validation models

Mechanical Properties

| PROPERTY | ASTM | METRIC UNITS |
|---|-----------|-----------------|
| Tensile Strength | D63804 | 38 – 42 MPA |
| Elongation Break (%) | D63805 | 45 – 55 % |
| Flexural Strength | D79003 | 55 – 64 MPA |
| Flexural Modulus | D79004 | 1600 – 1800 Mpa |
| IZOD Impact Strength (notched) | D25606 | 40 – 55 J/m |
| Heat Deflection Temperature @ 0.45 MPa/66 psi, (°C) | D64806 | 47 – 50 C |
| Shore Hardness | (Scale D) | 80 - 82 |