

SLS MATERIAL SPECIFICATIONS

Nylon 12 GF

Highlights

- Excellent mechanical stiffness
- Elevated temperature resistance
- Dimensionally stable

Applications

- Housings and enclosures
- Consumer sporting goods
- Complex prototype plastic parts
- Form, fit, or functional prototypes
- Parts requiring stiffness

TYPICAL PHYSICAL PROPERTIES

| Property | Test Method | English | Metric |
|---|--------------------------|---------------------------------|---------------------------------|
| Color/Appearance | Visual | Light Grey | Light Grey |
| Density | DIN 53466 | 0.050 lb/in ³ | 1.25 g/cm ³ |
| Elongation at Break | ASTM D638 | 1.4 - 6% | 1.4 - 6% |
| Flexural Modulus | ASTM D790 | 320,000 - 450,000 psi | 2,200 - 3,100 MPa |
| Heat Deflection Temperature @ 264 psi | ASTM D648 | 273°F | 134°C |
| Heat Deflection Temperature @ 66 psi | ASTM D648 | 354°F | 179°C |
| Izod Impact Strength (method A, notched) | ASTM D256 | 0.8 - 3.75 ft-lb/in | 40 - 200 J/m |
| Izod Impact Strength (un-notched) | ASTM D256 | 2.3 - 2.8 ft-lb/in | 120 - 150 J/m |
| Tensile Modulus | ASTM D638 | 480,000 - 590,000 psi | 4,070 - 3,300 MPa |
| Tensile Strength | ASTM D638 | 3,900 - 6,500 psi | 27 - 45 MPa |
| Coefficient of Thermal Expansion: 77°F-212°F (25-100°C) | ASTM E831 | 61.4 10 ⁻⁶ µin/in°F | 110.5 10 ⁻⁶ µm/m°C |
| Coefficient of Thermal Expansion: 212°F-338°F (100-170°C) | ASTM E831 | 87.7 10 ⁻⁶ µin/in°F | 157.8 10 ⁻⁶ µm/m°C |
| Volume Resistivity (22°C, 50%RH, 500V) | ASTM D257-93 | 2.0 x 10 ¹⁴ ohm x cm | 2.0 x 10 ¹⁴ ohm x cm |
| Surface Finish | Up-facing surface finish | 6.5 µm RA | 6.5 µm RA |

The material properties provided herein are for reference purposes only. Actual values may vary significantly as they are dramatically affected by part geometry and process parameters. Material specifications are subject to change with out notice.