



DuraForm[®] GF Plastic

For use with all selective laser sintering SLS systems.

General Properties

MEASUREMENT	CONDITION	METRIC	U.S.
Specific Gravity (g/cm ³)	ASTM D792	1.49	1.49
Moisture Absorption - 24 hours	ASTM D570	0.22%	0.22%

Mechanical Properties

MEASUREMENT	CONDITION	METRIC	U.S.
Tensile Strength, yield (MPa psi)	ASTM D638	27	3916
Tensile Strength, ultimate (MPa psi)	ASTM D638	26	3771
Tensile Modulus (MPa ksi)	ASTM D638	4068	590
Elongation at Break (%)	ASTM D638	1.4	1.4
Flexural Strength, ultimate (MPa psi)	ASTM D790	37	5366
Flexural Modulus (MPa ksi)	ASTM D790	3106	450
Hardness, Shore D	ASTM D2240	77	77
Impact Strength Notched Izod, 23 °C Unnotched Izod, 23 °C	ASTM D256	41 J/m 123 J/m	0.8 ft-lb/in 2.3 ft-lb/in
Gardner Impact (J ft. - lb)	ASTM D5420	4.5	3.3

Thermal Properties

MEASUREMENT	CONDITION	METRIC	U.S.
Heat Deflection Temperature	ASTM D 648 @ 0.45 MPa @ 1.82 MPa	179 °C 134 °C	354 °F 273 °F
Coefficient of Thermal Expansion	ASTM D 648 @ 0 - 50 °C @ 85 - 145 °C	62.3 µm/m - °C 124.6 µm/m - °C	34.6 µin/in - °F 69.2 µin/in - °F
Specific Heat Capacity	ASTM E1269	1.09 J/g - °C	0.261 BTU/lb - °F
Thermal Conductivity	ASTM E1225	0.47 W/m-K	3.26 BTU- in/hr-ft ² - °F
Flammability	UL 94	HB	HB

Electrical Properties

MEASUREMENT	CONDITION	METRIC	U.S.
Volume Resistivity (ohm - cm)	ASTM D257	3.2 x 10 ¹¹	3.2 x 10 ¹¹
Surface Resistivity (ohm)	ASTM D257	3.2 x 10 ¹¹	3.2 x 10 ¹¹
Dissipation Factor, 1KHz	ASTM D150	0.177	0.177
Dielectric Constant, 1 KHz	ASTM D150	6.27	6.27
Dielectric Strength (kV/mm kV/in)	ASTM D149	8.7	221

Data was generated by building parts under typical default parameters. DuraForm GF plastic was processed on a base-level Sinterstation HiQ SLS system at 13 watts laser power, 200 inches/sec [5 m/sec] scan speed, and a powder layer thickness of 0.004 inches [0.1 mm].

Features

- Excellent mechanical stiffness
- Elevated temperature resistance
- Dimensionally stable
- Easy-to-process
- Nice surface finish

Benefits

- Excels in load bearing applications at higher temperatures
- Prototypes and end-use parts without tooling
- Accurate and repeatable parts
- Machinable and paintable for demonstration parts
- Improved isotropic shrinkage due to glass filler

Applications

- Housings and enclosures
- Consumer sporting goods
- Appropriate for low- to mid-volume rapid manufacturing
- Parts requiring machining or joining with adhesives
- Complex production and prototype plastic parts
- Form, fit or functional prototypes
- Parts requiring stiffness
- Thermally stressed parts

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