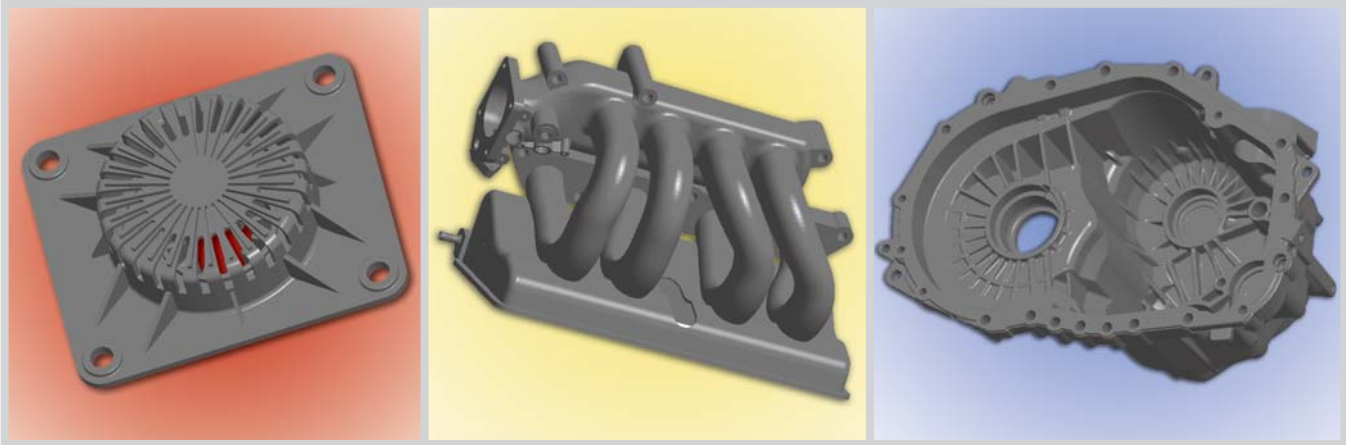
DuraForm® GF plastic

for use with all selective laser sintering (SLS®) systems

Glass-filled polyamide (nylon) material for real-world physical testing and functional use.



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

FEATURES

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

BENEFITS

- Excels in load bearing applications at higher temperatures
- Build prototypes and end-use parts without tooling
- Create accurate and repeatable parts as demanded by manufacturers
- Machinable and paintable for demonstration parts
- Improved isotropic shrinkage due to glass filler

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TECHNICAL DATA

General Properties

MEASUREMENT	METHOD/CONDITION	VALUE
Specific Gravity	ASTM D792	1.49 g/cm^3
Moisture Absorption - 24 hours	ASTM D570	0.22 %

Mechanical Properties

MEASUREMENT	METHOD/CONDITION	VALUE
Tensile Strength, Yield	ASTM D638	27 MPa (3916 psi)
Tensile Strength, Ultimate	ASTM D638	26 MPa (3771 psi)
Tensile Modulus	ASTM D638	4068 MPa (590 ksi)
Elongation at Yield	ASTM D638	1.4 %
Elongation at Break	ASTM D638	1.4 %
Flexural Strength, Yield	ASTM D790	N/A*
Flexural Strength, Ultimate	ASTM D790	37 MPa (5366 psi)
Flexural Modulus	ASTM D790	3106 MPa (450 ksi)
Hardness, Shore D	ASTM D2240	77
Impact Strength (notched Izod, 23°C)	ASTM D256	41 J/m (0.8 ft-lb/in)
Impact Strength (unnotched Izod, 23°C)	ASTM D256	123 J/m (2.3 ft-lb/in)
Gardner Impact	ASTM D5420	4.5 J (3.3 ft-lb)

Thermal Properties

MEASUREMENT	METHOD/CONDITION	VALUE
Heat Deflection Temperature (HDT)	ASTM D648	
	@ 0.45 MPa	179 °C (354 °F)
	@ 1.82 MPa	134 °C (273 °F)
Coefficient of Thermal Expansion	ASTM E831	
	@ 0 - 50 °C	82.6 µm/m-°C (45.9 µin/in-°F)
	@ 85 - 145 °C	179.2 µm/m-°C (99.6 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

Electrical Properties

MEASUREMENT	METHOD/CONDITION	VALUE
Volume Resistivity	ASTM D257	3.2 x 10^{11} ohm-cm
Surface Resistivity	ASTM D257	3.2 x 10^{11} ohm
Dissipation Factor, 1 KHz	ASTM D150	0.177
Dielectric Constant, 1 KHz	ASTM D150	6.27
Dielectric Strength	ASTM D149	8.7 kV/mm (221 kV/in)

*N/A = Data not applicable for this test condition

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].

TRANSFORM YOUR PRODUCTS

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PN 70716 Issue Date - 21 Nov 2006