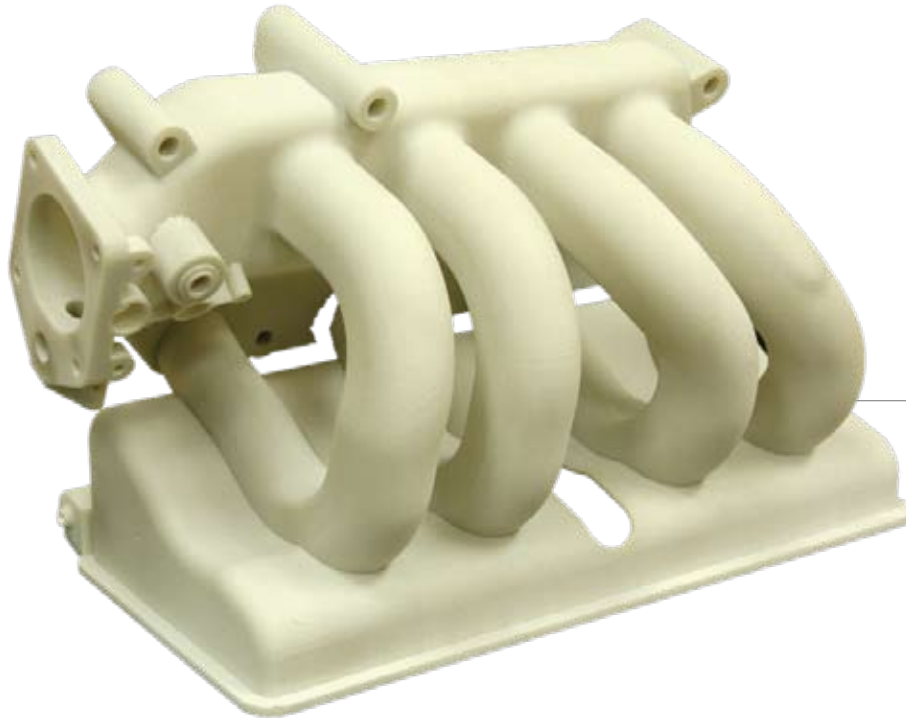


# DuraForm® GF Plastic



BDSYSTEMS™



*DuraForm GF plastic for rugged thermoplastic testing*

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

## Applications

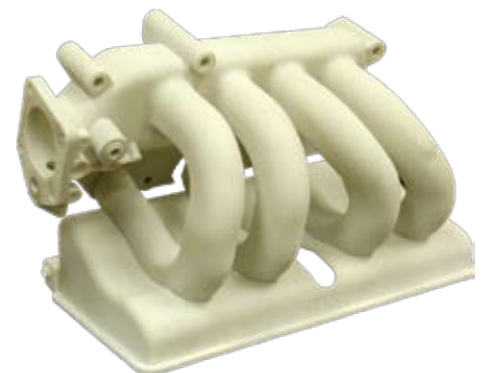
- Durable prototypes that require elevated stiffness and heat resistance
- Low to mid volume direct manufacturing of end-use parts
- Enclosures and housings that require more stiffness
- Aircraft and motorsports parts
- Sporting goods

## Features

- Excellent mechanical stiffness
- Elevated temperature resistance
- Dimensionally stable
- Compatible with autoclave sterilization

## Benefits

- Durable
- Functional
- Economical
- Design for manufacturability
- Eliminate tooling time and cost
- Versatile application capability



# DuraForm<sup>®</sup> GF Plastic

for use with all selective laser sintering SLS<sup>®</sup> Systems

## Technical Data

### General Properties

Measurement	Condition	Metric	U.S.
Density	ASTM D792	1.49 g/cm <sup>3</sup>	1.49 g/cm <sup>3</sup>
Moisture Absorption-24 hours	ASTM D570	0.22%	0.22%

### Mechanical Properties

Measurement	Condition	Metric	U.S.
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%	1.4%
Elongation at Break	ASTM D638	1.4%	1.4%
Flexural Strength, Yield	ASTM D790	N/A*	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	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	Condition	Metric	U.S.
Heat Deflection Temperature (HDT) * *	ASTM D648 @ 0.45 MPa @ 1.82 MPa	179 °C 134 °C	354 °F 273 °F
Coefficient of Thermal Expansion	ASTM E831 @ 0 - 50 °C @ 85 - 145 °C	82.6 µm/m - °C 179.2 µm/m - °C	45.9 µin/in - °F 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 <sup>2</sup> - °F
Flammability	UL 94	HB	HB

### Electrical Properties

Measurement	Condition	Metric	U.S.
Volume Resistivity	ASTM D257	3.2 x 10 <sup>11</sup> ohm - cm	3.2 x 10 <sup>11</sup> ohm - cm
Surface Resistivity	ASTM D257	3.2 x 10 <sup>11</sup> ohm	3.2 x 10 <sup>11</sup> ohm
Dissipation Factor, 1KHz	ASTM D150	0.177	0.177
Dielectric constant, 1KHz	ASTM D150	6.27	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<sup>®</sup> GF Plastic was processed on a base-level Sinterstation HiQ SLS<sup>®</sup> 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).



3D Systems Corporation  
333 Three D Systems Circle  
Rock Hill, SC 29730 U.S.A.

Tel: 803.326.4080  
Toll-free: 800.889.2964  
Fax: 803.324.8810

moreinfo@3dsystems.com  
www.3dsystems.com  
NYSE: DDD

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