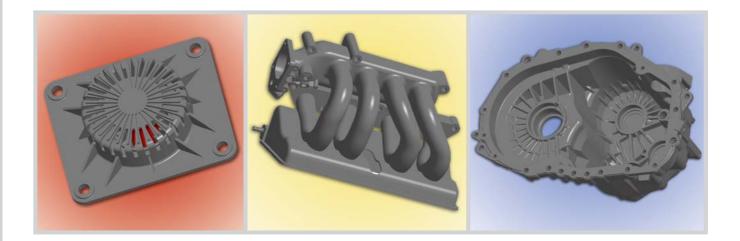


DuraForm® GF plastic

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

3D SYSTEMS

TRANSFORM YOUR PRODUCTS

DuraForm® GF plastic

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

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)
	ASTM D256 ASTM D5420	123 J/m (2.3 ft-lb/in) 4.5 J (3.3 ft-lb)
Gardner Impact		, ,
Gardner Impact Thermal Properties	ASTM D5420	4.5 J (3.3 ft-lb)
Gardner Impact Thermal Properties MEASUREMENT	ASTM D5420 METHOD/CONDITION	. ,
Gardner Impact Thermal Properties	ASTM D5420 METHOD/CONDITION ASTM D648	4.5 J (3.3 ft-lb)
Gardner Impact Thermal Properties MEASUREMENT	ASTM D5420 METHOD/CONDITION ASTM D648 @ 0.45 MPa	4.5 J (3.3 ft-lb) VALUE 179 °C (354 °F)
Gardner Impact Thermal Properties MEASUREMENT Heat Deflection Temperature (HDT)	ASTM D5420 METHOD/CONDITION ASTM D648 @ 0.45 MPa @ 1.82 MPa	4.5 J (3.3 ft-lb)
Gardner Impact Thermal Properties MEASUREMENT	ASTM D5420 METHOD/CONDITION ASTM D648 @ 0.45 MPa @ 1.82 MPa ASTM E831	4.5 J (3.3 ft-lb) VALUE 179 °C (354 °F) 134 °C (273 °F)
Gardner Impact Thermal Properties MEASUREMENT Heat Deflection Temperature (HDT)	ASTM D5420 METHOD/CONDITION ASTM D648 @ 0.45 MPa @ 1.82 MPa	4.5 J (3.3 ft-lb) VALUE 179 °C (354 °F)
Gardner Impact Thermal Properties MEASUREMENT Heat Deflection Temperature (HDT)	ASTM D5420 METHOD/CONDITION ASTM D648 @ 0.45 MPa @ 1.82 MPa ASTM E831 @ 0 - 50 °C	4.5 J (3.3 ft-lb) VALUE 179 °C (354 °F) 134 °C (273 °F) 82.6 μm/m-°C (45.9 μin/in-°F)
Gardner Impact Thermal Properties MEASUREMENT Heat Deflection Temperature (HDT) Coefficient of Thermal Expansion	ASTM D5420 METHOD/CONDITION ASTM D648 @ 0.45 MPa @ 1.82 MPa ASTM E831 @ 0 - 50 °C @ 85 - 145 °C	4.5 J (3.3 ft-lb) VALUE 179 °C (354 °F) 134 °C (273 °F) 82.6 μm/m-°C (45.9 μin/in-°F) 179.2 μm/m-°C (99.6 μin/in-°F) 1.09 J/g-°C (0.261 BTU/lb-°F)
Gardner Impact Thermal Properties MEASUREMENT Heat Deflection Temperature (HDT) Coefficient of Thermal Expansion Specific Heat Capacity	ASTM D5420 METHOD/CONDITION ASTM D648 @ 0.45 MPa @ 1.82 MPa ASTM E831 @ 0 - 50 °C @ 85 - 145 °C ASTM E1269	4.5 J (3.3 ft-lb) VALUE 179 °C (354 °F) 134 °C (273 °F) 82.6 μm/m-°C (45.9 μin/in-°F) 179.2 μm/m-°C (99.6 μin/in-°F) 1.09 J/g-°C (0.261 BTU/lb-°F)
Gardner Impact Thermal Properties MEASUREMENT Heat Deflection Temperature (HDT) Coefficient of Thermal Expansion Specific Heat Capacity Thermal Conductivity Flammability	ASTM D5420 METHOD/CONDITION ASTM D648 @ 0.45 MPa @ 1.82 MPa ASTM E831 @ 0 - 50 °C @ 85 - 145 °C ASTM E1269 ASTM E1225	4.5 J (3.3 ft-lb) VALUE 179 °C (354 °F) 134 °C (273 °F) 82.6 μm/m-°C (45.9 μin/in-°F) 179.2 μm/m-°C (99.6 μin/in-°F) 1.09 J/g-°C (0.261 BTU/lb-°F) 0.47 W/m-K (3.26 BTU-in/hr-ft ² -°F
Gardner Impact Thermal Properties MEASUREMENT Heat Deflection Temperature (HDT) Coefficient of Thermal Expansion Specific Heat Capacity Thermal Conductivity Flammability Electrical Properties	ASTM D5420 METHOD/CONDITION ASTM D648 @ 0.45 MPa @ 0.45 MPa @ 1.82 MPa ASTM E831 @ 0 - 50 °C @ 85 - 145 °C ASTM E1269 ASTM E1225 UL 94	4.5 J (3.3 ft-lb) VALUE 179 °C (354 °F) 134 °C (273 °F) 82.6 μm/m-°C (45.9 μin/in-°F) 179.2 μm/m-°C (99.6 μin/in-°F) 1.09 J/g-°C (0.261 BTU/lb-°F) 0.47 W/m-K (3.26 BTU-in/hr-ft ² -°F HB
Gardner Impact Thermal Properties MEASUREMENT Heat Deflection Temperature (HDT) Coefficient of Thermal Expansion Specific Heat Capacity Thermal Conductivity Flammability Electrical Properties MEASUREMENT	ASTM D5420 METHOD/CONDITION ASTM D648 @ 0.45 MPa @ 0.45 MPa @ 1.82 MPa ASTM E831 @ 0 - 50 °C @ 85 - 145 °C ASTM E1269 ASTM E1225 UL 94 METHOD/CONDITION	4.5 J (3.3 ft-lb) VALUE 179 °C (354 °F) 134 °C (273 °F) 82.6 μm/m-°C (45.9 μin/in-°F) 179.2 μm/m-°C (99.6 μin/in-°F) 1.09 J/g-°C (0.261 BTU/lb-°F) 0.47 W/m-K (3.26 BTU-in/hr-ft ² -°F HB VALUE
Gardner Impact Thermal Properties MEASUREMENT Heat Deflection Temperature (HDT) Coefficient of Thermal Expansion Specific Heat Capacity Thermal Conductivity Flammability Electrical Properties MEASUREMENT Volume Resistivity	ASTM D5420 METHOD/CONDITION ASTM D648 @ 0.45 MPa @ 0.45 MPa @ 1.82 MPa ASTM E831 @ 0 - 50 °C @ 85 - 145 °C ASTM E1269 ASTM E1225 UL 94 METHOD/CONDITION ASTM D257	4.5 J (3.3 ft-lb) VALUE 179 °C (354 °F) 134 °C (273 °F) 82.6 μm/m-°C (45.9 μin/in-°F) 179.2 μm/m-°C (99.6 μin/in-°F) 1.09 J/g-°C (0.261 BTU/lb-°F) 0.47 W/m-K (3.26 BTU-in/hr-ft ² -°F HB VALUE 3.2 x 10 ¹¹ ohm-cm
Gardner Impact Thermal Properties MEASUREMENT Heat Deflection Temperature (HDT) Coefficient of Thermal Expansion Specific Heat Capacity Thermal Conductivity Flammability Electrical Properties MEASUREMENT Volume Resistivity Surface Resistivity	ASTM D5420 METHOD/CONDITION ASTM D648 @ 0.45 MPa @ 1.82 MPa ASTM E831 @ 0 - 50 °C @ 85 - 145 °C ASTM E1269 ASTM E1225 UL 94 METHOD/CONDITION ASTM D257 ASTM D257	4.5 J (3.3 ft-lb) VALUE 179 °C (354 °F) 134 °C (273 °F) 82.6 μm/m-°C (45.9 μin/in-°F) 179.2 μm/m-°C (99.6 μin/in-°F) 1.09 J/g-°C (0.261 BTU/lb-°F) 0.47 W/m-K (3.26 BTU-in/hr-ft ² -°F HB VALUE 3.2 x 10 ¹¹ ohm-cm 3.2 x 10 ¹¹ ohm
Gardner Impact Thermal Properties MEASUREMENT Heat Deflection Temperature (HDT) Coefficient of Thermal Expansion Specific Heat Capacity Thermal Conductivity Flammability Electrical Properties MEASUREMENT Volume Resistivity	ASTM D5420 METHOD/CONDITION ASTM D648 @ 0.45 MPa @ 0.45 MPa @ 1.82 MPa ASTM E831 @ 0 - 50 °C @ 85 - 145 °C ASTM E1269 ASTM E1225 UL 94 METHOD/CONDITION ASTM D257	4.5 J (3.3 ft-lb) VALUE 179 °C (354 °F) 134 °C (273 °F) 82.6 μm/m-°C (45.9 μin/in-°F) 179.2 μm/m-°C (99.6 μin/in-°F) 1.09 J/g-°C (0.261 BTU/lb-°F) 0.47 W/m-K (3.26 BTU-in/hr-ft ² -°F HB VALUE 3.2 x 10 ¹¹ ohm-cm

*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].



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