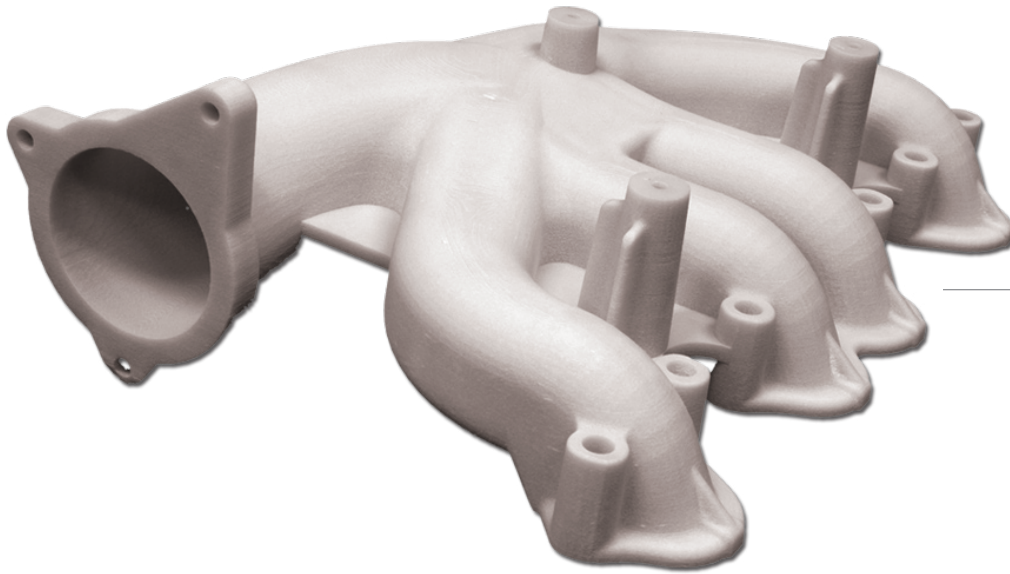


DuraForm® HST Composite



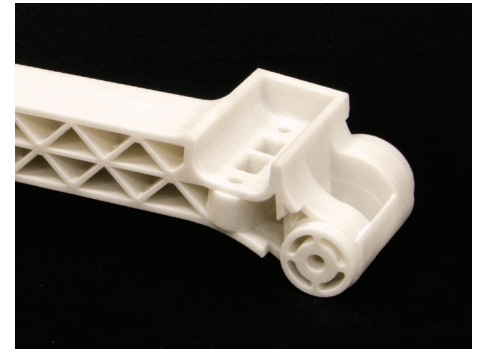
Manifold built with stiff and durable DuraForm® HST Composite.

Applications

- Functional prototypes and end-use parts that require high stiffness and/or elevated thermal resistance
- Typical Applications include:
 - UAV structural components
 - Housings and enclosures
 - Impellers
 - Connectors
 - Consumer sporting goods

Features

- High specific stiffness
- Elevated temperature resistance
- Anisotropic mechanical properties just like fiber-filled, injection molded materials
- Non-conductive and RF transparent
- Easy-to-finish surface



Benefits

- Functional prototypes can be tested in "real life" environments
- Complex end-use parts can be economically manufactured in low-to-medium volumes
- Excels in load-bearing applications at higher temperatures
- Attractive surface finish

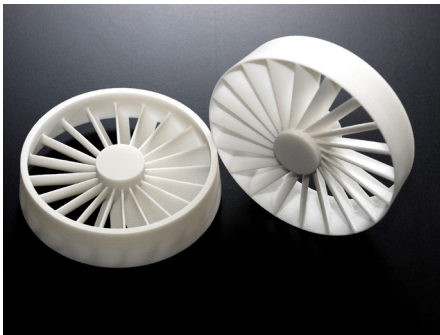
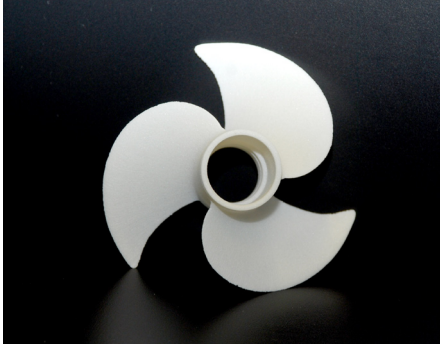


PROTOFACTURING

DuraForm® HST Composite

For use with all Sinterstation® Pro and Sinterstation® HiQ™ series SLS® Systems

Technical Data



PROTOFACTURING

Prototyping Group Inc.
3537 Ashby
Saint Laurent, QC, H4R 2K3
t: (514) 448-4220
f: (514) 866-0147

General Properties

Measurement	Condition	Metric	U.S.
Specific Gravity	ASTM D792	1.20 g/cm ³	1.20 g/cm ³

Mechanical Properties

Measurement	Condition	Metric	U.S.
Tensile Strength, Yield	ASTM D638	N/A*	N/A*
Tensile Strength, Ultimate	ASTM D638	48-51 MPa	7050-7350 psi
Tensile Modulus	ASTM D638	5475-5725 MPa	795-831 ksi
Elongation at Yield	ASTM D638	N/A	N/A
Elongation at Break	ASTM D638	4.5 %	4.5 %
Flexural Strength, Yield	ASTM D790	N/A	N/A
Flexural Strength, Ultimate	ASTM D790	83-89 MPa	12000 - 12900 psi
Flexural Modulus	ASTM D790	4400-4550 MPa	638-660 ksi
Hardness, Shore D	ASTM D2240	75	75
Impact Strength (notched Izod, 23 °C)	ASTM D256	37.4 J/m	0.7 ft-lb/in
Impact Strength (unnotched Izod, 23 °C)	ASTM D256	310 J/m	5.8 ft-lb/in
Gardner Impact	ASTM D5420	5 J	3.7 ft-lb

Thermal Properties

Measurement	Condition	Metric	U.S.
Heat Deflection Temperature (HDT)	ASTM D648 @ 0.45 MPa @ 1.82 MPa	184 °C 179 °C	363 °F 355 °F
Coefficient of Thermal Expansion	ASTM E831 @ 0 - 50 °C @ 85 - 145 °C	138.3 µm/m-°C 267.2 µm/m-°C	76.8 µin/in-°F 148.4 µin/in-°F
Specific Heat Capacity	ASTM E1269	1.503 J/g-°C	0.359 BTU/lb-°F
Flammability (3 mm)	UL 94	HB	HB

Electrical Properties

Measurement	Condition	Metric	U.S.
Volume Resistivity	ASTM D257	6.7 x 10 ¹⁵ ohm-cm	6.7 x 10 ¹⁵ ohm-cm
Surface Resistivity	ASTM D257	5.2 x 10 ¹⁵ ohm	5.2 x 10 ¹⁵ ohm
Dissipation Factor, 1 KHz	ASTM D150	0.028	0.028
Dielectric Constant, 1 KHz	ASTM D150	3.14	3.14
Dielectric Strength	ASTM D149	18.5 kV/mm	470 kV/in

* N/A = Not Applicable

Data was generated by building parts using 100% virgin powder under typical default parameters. DuraForm® HST Composite was processed on a Sinterstation® HiQ™ + HS SLS® System at 25 watts laser power, 10 m/sec [400 inches/sec] scan speed, and a powder layer thickness of 0.1 mm [0.004 inches].

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www.prototyping.com

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