

# DuraForm HST<sup>®</sup> Plastic

for use with Sinterstation<sup>®</sup> HiQ (SLS) Systems



**Fiber-reinforced plastic composite for real-world functional use and low-volume manufacturing.**



## Applications

- Housings and enclosures
- Impellers
- Connectors
- Consumer sporting goods
- Functional prototypes that approach end-use performance properties
- Parts requiring machining or joining with adhesives
- Parts requiring stiffness
- Thermally stressed parts

## Features

- High specific stiffness
- Elevated temperature resistance
- Good powder recycling characteristics
- Easy-to-process
- Excellent surface finish

## Benefits

- Excels in load bearing applications at higher temperatures
- Produce durable end-use parts without tooling
- Build prototypes that withstand functional testing
- Create accurate and repeatable parts as demanded by manufacturers
- Sandable and paintable finished part surfaces

# DuraForm HST<sup>®</sup> Plastic



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- Rainer Neumann, GM, 4D Concepts GmbH



Description of part goes right here under picture



Description of part goes right here under picture

## Technical Data

### General Properties

### DuraForm<sup>®</sup> HST10 Plastic

MEASUREMENT	METHOD/CONDITION	METRIC	U.S.
Specific Gravity	ASTM D792	g/cm <sup>3</sup>	g/cm <sup>3</sup>
Moisture Absorption-24 hours	ASTM D570	%	%

### Mechanical Properties

MEASUREMENT	METHOD/CONDITION	METRIC	U.S.
Tensile Strength, Yield	ASTM D638	MPa	psi
Tensile Strength, Ultimate	ASTM D638	MPa	psi
Tensile Modulus	ASTM D638	MPa	ksi
Elongation at Yield	ASTM D638	%	%
Elongation at Break	ASTM D638	%	%
Flexural Strength, Yield	ASTM D790	N/A*	N/A*
Flexural Strength, Ultimate	ASTM D790	MPa	psi
Flexural Modulus	ASTM D790	MPa	ksi
Hardness, Shore D	ASTM D2240		
Impact Strength (notched Izod, 23 °C)	ASTM D256	J/m	ft - lb/in
Impact Strength (unnotched Izod, 23 °C)	ASTM D256	J/m	ft - lb/in
Gardner Impact	ASTM D5420	58 °C (136 °F)	ft - lb

### Thermal Properties

MEASUREMENT	METHOD/CONDITION	METRIC	U.S.
Heat Deflection Temperature (HDT)	ASTM D638 @0.45 MPa @1.82 MPa	°C	°F
		°C	°F
Coefficient of Thermal Expansion	ASTM E831 @0-50 °C @85-145 °C	µm/m - °C	µin/in - °F
		µm/m - °C	µin/in - °F
Specific Heat Capacity	ASTM E1269	J/g-°C	µin/in-°F
Thermal Conductivity	ASTM E1225	%	BTU-in/hr-ft <sup>2</sup> -°F
Flammability	UL 94	HB	HB

### Electrical Properties

MEASUREMENT	METHOD/CONDITION	METRIC	U.S.
Volume Resistivity	ASTM D257	ohm - cm	ohm - cm
Surface Resistivity	ASTM D257	ohm	ohm
Dissipation Factor, 1KHz	ASTM D150		
Dielectric constant, 1KHz	ASTM D150		
Dielectric Strength	ASTM D149	kV/mm	kV/in

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

Data was generated by building parts under typical default parameters. DuraForm<sup>®</sup> HST10 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).



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