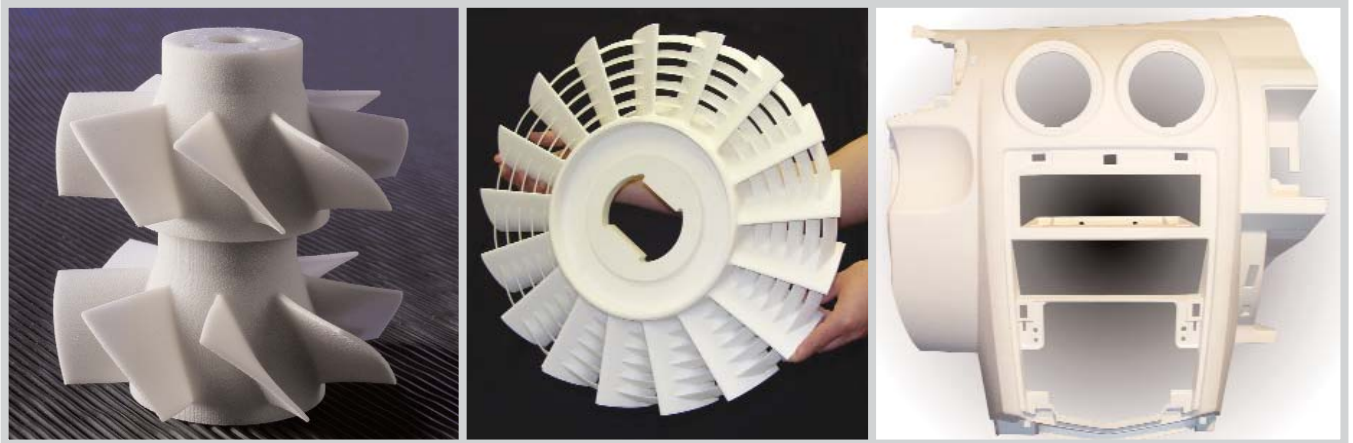




DuraForm® PA plastic

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

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



APPLICATIONS

- Complex, thin-wall ductwork
 - Motorsports
 - Aerospace
- Housings and enclosures
- Impellers and connectors
- Consumer sporting goods
- Vehicle dashboards and grilles
- Snap-fit designs
- Functional prototypes that approach end-use performance properties
- Appropriate for low- to mid-volume rapid manufacturing
- Medical applications requiring USP Class VI compliance, or biocompatibility
- Parts requiring machining or joining with adhesives
- Complex production and prototype plastic parts
- Form, fit, or functional prototypes

FEATURES

- Excellent surface resolution and feature detail
- Easy-to-process
- Compliant with USP Class VI testing
- Compatible with autoclave sterilisation
- Good chemical resistance and low moisture absorption

BENEFITS

- Balanced mechanical properties and processability
- Build prototypes that withstand functional testing
- Produce durable end-use parts without tooling
- Create accurate and repeatable parts as demanded by manufacturers
- Machinable and paintable for demonstration parts

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TECHNICAL DATA

General Properties

MEASUREMENT	METHOD/CONDITION	VALUE
Specific Gravity	ASTM D792	1.00 g/cm ³
Moisture Absorption - 24 hours	ASTM D570	0.07 %

Mechanical Properties

MEASUREMENT	METHOD/CONDITION	VALUE
Tensile Strength, Yield	ASTM D638	N/A*
Tensile Strength, Ultimate	ASTM D638	43 MPa (6237 psi)
Tensile Modulus	ASTM D638	1586 MPa (230 ksi)
Elongation at Yield	ASTM D638	N/A*
Elongation at Break	ASTM D638	14 %
Flexural Strength, Yield	ASTM D790	N/A*
Flexural Strength, Ultimate	ASTM D790	48 MPa (6962 psi)
Flexural Modulus	ASTM D790	1387 MPa (201 ksi)
Hardness, Shore D	ASTM D2240	73
Impact Strength (notched Izod, 23°C)	ASTM D256	32 J/m (0.6 ft-lb/in)
Impact Strength (unnotched Izod, 23°C)	ASTM D256	336 J/m (6.3 ft-lb/in)
Gardner Impact	ASTM D5420	2.7 J (2.0 ft-lb)

Thermal Properties

MEASUREMENT	METHOD/CONDITION	VALUE
Heat Deflection Temperature (HDT)	ASTM D648 @ 0.45 MPa	180 °C (356 °F)
	@ 1.82 MPa	95 °C (203 °F)
Coefficient of Thermal Expansion	ASTM E831 @ 0 - 50 °C	62.3 µm/m-°C (34.6 µin/in-°F)
	@ 85 - 145 °C	124.6 µm/m-°C (69.2 µin/in-°F)
Specific Heat Capacity	ASTM E1269	1.64 J/g-°C (0.392 BTU/lb-°F)
Thermal Conductivity	ASTM E1225	0.70 W/m-K (4.86 BTU-in/hr-ft ² -°F)
Flammability	UL 94	HB

Electrical Properties

MEASUREMENT	METHOD/CONDITION	VALUE
Volume Resistivity	ASTM D257	5.9 x 10 ¹³ ohm-cm
Surface Resistivity	ASTM D257	7.0 x 10 ¹³ ohm
Dissipation Factor, 1 KHz	ASTM D150	0.044
Dielectric Constant, 1 KHz	ASTM D150	2.73
Dielectric Strength	ASTM D149	17.3 kV/mm (439 kV/in)

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

Data was generated by building parts under typical default parameters. DuraForm PA 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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