

DuraForm[®] EX plastic

for use with all **Sinterstation[®] Pro** and **Sinterstation HiQ[™]** series SLS[®] systems

This impact-resistant plastic offers the toughness of injection-moulded polypropylene and ABS and is suitable for Rapid Manufacturing.



*DuraForm EX plastic is available in both **Natural** and **Black** colors.*

APPLICATIONS

- Complex, thin-walled ductwork
 - Motorsports
 - Aerospace
 - Unmanned air vehicles (UAV's)
- Housings and enclosures
- Impellers
- Connectors
- Consumer sporting goods
- Vehicle dashboards and grills
- Bumpers
- Snap-fit designs
- Living hinges
- Functional prototypes that require end-use performance properties
- Appropriate for low- to mid-volume Rapid Manufacturing

FEATURES

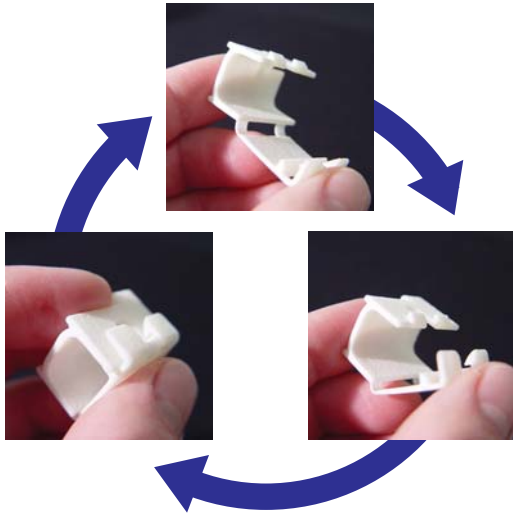
- Outstanding toughness
- Excellent impact resistance
- Repeatable mechanical properties
- Easy-to-process
- Consistent black or natural colour

BENEFITS

- Offers toughness of injection-moulded ABS and polypropylene
- Build prototypes that withstand aggressive functional testing
- Create accurate and repeatable parts as demanded by manufacturers
- Increase market opportunities through enhanced properties
- Eliminate painting by using black colour

DuraForm® EX plastic

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



Tear-resistant living hinges survive hundreds of open-close cycles.



One-part, black powder contributes to uniform black color.

TECHNICAL DATA

General Properties

MEASUREMENT	METHOD/CONDITION	VALUE
Specific Gravity	ASTM D792	1.01 g/cm ³
Moisture Absorption - 24 hours	ASTM D570	0.48%
Moisture Saturation	ASTM D570	1.15%

Mechanical Properties

MEASUREMENT	METHOD/CONDITION	VALUE
Tensile Strength, Yield	ASTM D638	37 MPa (5366 psi)
Tensile Strength, Ultimate	ASTM D638	48 MPa (6961 psi)
Tensile Modulus	ASTM D638	1517 MPa (220 ksi)
Elongation at Yield	ASTM D638	5%
Elongation at Break	ASTM D638	47%
Flexural Strength, Yield	ASTM D790	42 MPa (6091 psi)
Flexural Strength, Ultimate	ASTM D790	46 MPa (6672 psi)
Flexural Modulus	ASTM D790	1310 MPa (190 ksi)
Hardness, Shore D	ASTM D2240	74
Hardness, Rockwell L	ASTM D785	69
Hardness, Rockwell M	ASTM D785	34
Impact Strength (notched Izod, 23°C)	ASTM D256	74 J/m (1.4 ft-lb/in)
Impact Strength (unnotched Izod, 23°C)	ASTM D256	1486 J/m (27.8 ft-lb/in)
Gardner Impact	ASTM D5420	11.8 J (8.7 ft-lb)

Thermal Properties

MEASUREMENT	METHOD/CONDITION	VALUE
Heat Deflection Temperature (HDT)	ASTM D648 @ 0.45 MPa	188 °C (370 °F)
	@ 1.82 MPa	48 °C (118 °F)
Coefficient of Thermal Expansion	ASTM E831 @ 0 - 50 °C	120 µm/m-°C (66.7 µin/in-°F)
	@ 85 - 145 °C	342 µm/m-°C (190 µin/in-°F)
Specific Heat Capacity	ASTM E1269	1.75 J/g-°C (0.418 BTU/lb-°F)
Thermal Conductivity	ASTM E1225	0.51 W/m-K (3.5 BTU-in/hr-ft -°F)
Flammability	UL 94	HB

Electrical Properties

MEASUREMENT	METHOD/CONDITION	VALUE
Volume Resistivity	ASTM D257	1.3 X 10 ¹³ ohm-cm
Surface Resistivity	ASTM D257	4.9 X 10 ¹² ohm
Dissipation Factor, 1 KHz	ASTM D150	0.050
Dielectric Constant, 1 KHz	ASTM D150	4.5
Dielectric Strength	ASTM D149	18.5 kV/mm (470 kV/in)

Data was generated by building parts under typical default parameters. DuraForm EX plastic was processed on a base-level HiQ SLS system at 13 watts laser power 5 m/sec scan speed, and a powder layer thickness of 0.1 mm.

Minimum System Requirements:

It is recommended that DuraForm EX plastic be processed in a HiQ-equipped system, which includes thermal controls. Software version 3.42 or higher (Sinterstation HiQ) or software version 3.545 or higher (Sinterstation Pro) is required. SinterScan™ software is highly recommended, and is required to maximize mechanical properties.



3D Systems Europe Ltd.

Mark House, Mark Road
Hemel Hempstead
Herts HP2 7UA - UK
www.3dsystems.com

Tel: (+44) 1442 282 600
Fax: (+44) 1442 282 601
marketing.uk@3dsystems.com
Nasdaq: TDSC

3D Systems GmbH

Postfach 12 02 07
D-64239 Darmstadt
Germany

Tel: (+49) 6151 357 0
Fax: (+49) 6151 357 333
info@3dsystems-europe.com

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