

3D Systems DuraForm® EX Impact-Resistant Plastic for SLS® Systems

Category : Polymer , Rapid Prototyping Polymer

Material Notes:

This impact-resistant plastic offers the toughness of injection-molded polypropylene and ABS and is suitable for Rapid Manufacturing. For use with all Sinterstation® Pro and Sinterstation HiQ™ series SLS® systems. Applications: Complex, thin-wall ductwork, Motorsports, Aerospace, Unmanned air vehicles (UAV's), Housings and enclosures, Impellers, Connectors, Consumer sporting goods, Vehicle dashboards and grilles, Bumpers, Snap-fit designs, Living hinges, Functional prototypes that require end-use performance properties. Appropriate for low- to mid-volume rapid manufacturing. All information provided by 3D Systems.

Order this product through the following link:

http://www.lookpolymers.com/polymer_3D-Systems-DuraForm-EX-Impact-Resistant-Plastic-for-SLS-Systems.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.01 g/cc	1.01 g/cc	ASTM D792
Water Absorption	0.48 % @Time 86400 sec	0.48 % @Time 24.0 hour	ASTM D570
Water Absorption at Saturation	1.15 %	1.15 %	ASTM D570

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell L	69	69	ASTM D785
Hardness, Rockwell M	34	34	ASTM D785
Hardness, Shore D	74	74	ASTM D2240
Tensile Strength, Ultimate	48.0 MPa	6960 psi	ASTM D638
Tensile Strength, Yield	37.0 MPa	5370 psi	ASTM D638
Elongation at Break	47 %	47 %	ASTM D638
Elongation at Yield	5.0 %	5.0 %	ASTM D638
Tensile Modulus	1.517 GPa	220.0 ksi	ASTM D638
Flexural Strength	46.0 MPa	6670 psi	ASTM D790
Flexural Yield Strength	42.0 MPa	6090 psi	ASTM D790
Flexural Modulus	1.31 GPa	190 ksi	ASTM D790
Izod Impact, Notched	0.740 J/cm @Temperature 23.0 °C	1.39 ft-lb/in @Temperature 73.4 °F	ASTM D256
	14.86 J/cm	27.84 ft-lb/in	

Izod Impact, Unnotched Mechanical Properties		Metric @ Temperature 23.0 °C	English @ Temperature 73.4 °F	ASTM D256 Comments
Gardner Impact		11.8 J	8.70 ft-lb	ASTM D5420

Thermal Properties	Metric	English	Comments
CTE, linear	120 µm/m-°C	66.7 µin/in-°F	ASTM E831
	@Temperature 0.000 - 50.0 °C	@Temperature 32.0 - 122 °F	
	342 µm/m-°C	190 µin/in-°F	ASTM E831
	@Temperature 85.0 - 145 °C	@Temperature 185 - 293 °F	
Specific Heat Capacity	1.75 J/g-°C	0.418 BTU/lb-°F	ASTM E1269
Thermal Conductivity	0.510 W/m-K	3.54 BTU-in/hr-ft²-°F	ASTM E1225
Deflection Temperature at 0.46 MPa (66 psi)	188 °C	370 °F	ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	48.0 °C	118 °F	ASTM D648
Flammability, UL94	HB	HB	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.30e+13 ohm-cm	1.30e+13 ohm-cm	ASTM D257
Surface Resistance	4.90e+12 ohm	4.90e+12 ohm	ASTM D257
Dielectric Constant	4.5	4.5	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
Dielectric Strength	18.5 kV/mm	470 kV/in	ASTM D149
Dissipation Factor	0.050	0.050	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	

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