



DuraForm[®] ProX[®] HST Composite

Selective Laser Sintering (SLS)

Composite material with high stiffness and thermal resistance for use with ProX SLS printers.

General Properties

MEASUREMENT	CONDITION	METRIC	U.S.
Sintered Part Density (g/cm ³)	Internal	1.12	1.12

Mechanical Properties

MEASUREMENT	CONDITION	METRIC	U.S.
Tensile Strength, Ultimate (MPa psi)	D638	44	6340
Tensile Modulus (MPa ksi)	D638	4123	600
Elongation at Break (MPa ksi)	D638	4.3 %	4.3 %
Flexural Strength, Ultimate (MPa ksi)	D790	75	10.8
Flexural Modulus (MPa psi)	D790	3430	497
Hardness, Shore D	D2240	73	73
Impact Strength @ 0.12" (J/m ft-lb/in)	D256		
Notched izod, 23 °C		55	1.0
Unnotched izod, 23 °C		307	5.8

* All data generated using 3D Systems recommended recycle rates

Thermal Properties

MEASUREMENT	CONDITION	METRIC	U.S.
Heat Deflection Temperature @ 0.45 Mpa @ 1.82 Mpa	D648	183 °C 171 °C	361 °F 340 °F
Coefficient of Thermal Expansion (µm/m-°C µin/in-°F) @ 0-50 °C @ 85-145 °C	E831	153.4 330.4	47.4 96.5
Thermal Conductivity (W/m-K BTU-in/hr-ft ² -°F)	E1530	0.29	2.0

Electrical Properties

MEASUREMENT	CONDITION	METRIC	U.S.
Volume Resistivity (Ω-cm)	D257	1.53x10 ¹⁵	1.53x10 ¹⁵
Surface Resistivity (Ω/sq)	D257	1.53x10 ¹⁵	1.53x10 ¹⁵
Dissipation Factor, 1 KHz	D150	0.049	0.049
Dielectric Constant, 1 KHz	D150	2.95	2.95
Dielectric Strength (kV/mm kV/in)	D149	16.5	419

Features

- Proprietary mineral-filled composite
- Exceptional rigidity
- Elevated temperature resistance

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

Applications

UAV structural components, housings and enclosures, impellers, connectors, consumer sporting goods, automotive/under the hood, jigs and fixtures.



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