



DuraForm® ProX® AF+

DuraForm ProX AF+ is an aluminum filled nylon 12 plastic that produces parts with high stiffness and a metallic appearance

General Properties

MEASUREMENT	CONDITION	METRIC	U.S.
Sintered Part Density @ 23 °C	ASTM D792	1.31 g/cc	0.047 lbs/in ³
Moisture Absorption @ 23 °C	ASTM D570	0.25 %	0.25 %

Mechanical Properties

MEASUREMENT	CONDITION	METRIC	U.S.
Tensile Strength Yield, Ultimate (MPa psi)	ASTM D638	37.0	5350
Tensile Modulus (MPa ksi)	ASTM D638	4340	630
Elongation at Break (%)	ASTM D638	3	3
Flexural Strength, Ultimate (MPa psi)	ASTM D790	64	9260
Flexural Modulus (MPa ksi)	ASTM D790	3710	538
Hardness, Shore D	ASTM D2240	78	78
Impact Strength (J/m ft-lb/in) Notched Izod Unnotched Izod	ASTM D256	54 255	1.0 4.8

Features

- Excellent surface finish
- Easily machined and polished for the addition of press fits, tappings or other uses
- Repeatable mechanical properties for consistent prints time after time
- High stiffness for rigid functional assemblies
- Improved recyclability for an aluminum filled powder

Benefits

- Aesthetic metallic surface finish directly off the printer
- Complex designs can have a metallic look with functional strength at an affordable cost
- High rigidity ideal for jigs and fixtures
- Excellent stiffness to weight ratio
- Lower cost per part due to higher recyclability

Applications

- Housing and enclosures
- Plastic parts requiring a metallic finish and a good appearance
- Automotive styling parts where a metallic look is needed (knobs, bezels etc.)
- High rigidity components
- Wind tunnel testing parts where stiffness and light weight are needed

The parts used to generate the above data were generated by building parts using 70% virgin powder using default parameters on a ProX® SLS 500 printer.



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Thermal Properties

MEASUREMENT	CONDITION	METRIC	U.S.
Heat Deflection Temperature @ 0.45 MPa @ 1.82 MPa	D648	182 °C 174 °C	360 °F 345 °F
Coefficient of Thermal Expansion (0-145 °C) (µm/m-°C µin/in-°F)	E831	145	81
Specific Heat Capacity @ 23 °C (J/g-°C BTU/lb-°F)	E1269	1.44	0.34
Thermal Conductivity (W/m-K in/hr-ft ² -°F)	E1530	0.42	2.91
Flammability	UL 94	HB	HB

Electrical Properties

MEASUREMENT	CONDITION	METRIC	U.S.
Volume Resistivity (ohms-cm ohms-in)	ASTM D257	1.09 x 10 ¹⁴	4.29 x 10 ¹³
Surface Resistivity (ohm)	ASTM D257	1.33 x 10 ¹³	1.33 x 10 ¹³
Dissipation Factor, 1 KHz	ASTM D150	0.0121	0.0121
Dielectric Constant, 1 KHz	ASTM D150	2.6	2.6
Dielectric Strength (kV/mm kV/mil)	ASTM D149	3	77



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