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 good appearance
- Automotive styling parts where a metallic look is needed (knobs, bezzels 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.

DuraForm® ProX® AF+

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

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-ft²- °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	1.09×10^{14}	4.29×10^{13}
Surface Resistivity (ohm)	ASTM D257	1.33×10^{13}	1.33×10^{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

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.

3D SYSTEMS

www.3dsystems.com