



DuraForm® Flex plastic

for use with all selective laser sintering SLS® systems

Thermoplastic elastomer material with rubber-like flexibility and functionality.



APPLICATIONS

- Athletic footwear and equipment
- Gaskets, hoses and seals
- Simulate thermoplastic elastomer, cast urethane, silicone and rubber parts
- “Soft-touch,” overmolded grips
- Parts requiring rubber-like flexibility and durability
- Form, fit, or functional prototypes
- Parts that require joining with adhesives
- Complex production and prototype plastic parts
- Appropriate for low- to mid-volume rapid manufacturing

FEATURES

- Durable with good tear resistance
- Vary Shore A hardness without changing material
- Easy-to-process
- Good powder recycle characteristics
- Good surface finish and feature detail

BENEFITS

- Withstands repeated bending and flexing
- Build prototypes that withstand functional testing
- Produce durable end-use parts without tooling
- DuraForm® FlexSeal infiltration offers array of colors
- Polyurethane infiltration creates watertight barrier and improves burst strength

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DuraForm FlexSeal Infiltration

FlexSeal fluid infiltration is an easy-to-use method for coloring, strengthening, and sealing DuraForm Flex parts.

DuraForm FlexSeal (1 kg containers) is available in the following colors:

24130-902	Black
24131-902	Red
24132-902	Yellow
24133-902	Blue
24136-902	Natural



FlexSeal colors can be mixed to create custom colors.

Two-Part Polyurethane Infiltration

Infiltration with a two-part polyurethane increases Shore A hardness, creates a watertight barrier, and significantly enhances the burst strength.

TECHNICAL DATA

Powder Properties

MEASUREMENT	CONDITION	VALUE
Density (tap)	ASTM D4164	0.44 g/cm ³
Melting Point: T _m	DSC	192 °C (378 °F)

Sintered Properties

MEASUREMENT	METHOD/CONDITION	AS SINTERED		INFILTRATED WITH FLEXSEAL (8-DIP PROCESS)	
		METRIC	US	METRIC	US
Mechanical Properties					
Tensile Strength, Ultimate	ASTM D638	1.8 MPa	262 psi	2.3 MPa	335 psi
Tensile Modulus	ASTM D638	7.4 MPa	1080 psi	9.2 MPa	1340 psi
Elongation at Break	ASTM D638	110%	110%	151%	151%
Flexural Modulus (@ 23 °C)	ASTM D790	5.9 MPa	860 psi	7.8 MPa	1130 psi
Initial Tear Resistance (Die C @ 23 °C)	ASTM D624	15.1 kN/m	86 lb/in	15.4 kN/m	88 lb/in
Abrasion Resistance Taber, CS-17 wheel, 1 kg load	ASTM D4060	83.5 mg (per 1000 cycles)		For applications requiring abrasion resistance, infiltration is not recommended	
Bursting Strength (Straight) @ 23 °C (25 mm ID x 2 mm thick x 300 mm long hose)	No Infiltration	0 MPa	0 psi		
	Two-Part Polyurethane Infiltration			0.21 MPa	>30 psi
	FlexSeal Infiltration			0.076 MPa	11 psi
Shore A Hardness @ 23 °C	ASTM D2240	45-75		55-80	
Electrical Properties					
Volume Resistivity	ASTM D257	1.3 x 10 ¹⁴ ohm-cm			
Surface Resistivity	ASTM D257	1.1 x 10 ¹⁴ ohm-cm			
Dissipation Factor, 1 KHz	ASTM D150	0.003			
Dielectric Constant, 1 KHz	ASTM D150	1.85			
Dielectric Strength	ASTM D149	1.9 kV/mm	47 kV/in		

Chemical Resistance - Material does not dissolve in hydrocarbons, ketones, ethers or alcohols, but may lose some mechanical properties. May swell in some solvents or solvent mixtures.

Data was generated by building parts under typical default parameters. DuraForm Flex plastic was processed on a base-level HiQ™ SLS system at 9 watts laser power, 200 inches/sec (5 m/sec) scan speed, and a powder layer thickness of 0.004 inches (0.1mm).



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