

3D Systems DuraForm® Flex Thermoplastic Elastomer for SLS® Systems

Category : Polymer , Rapid Prototyping Polymer , Thermoplastic , Elastomer, TPE

Material Notes:

Thermoplastic elastomer material with rubber-like flexibility and functionality. For use with all selective laser sintering SLS® systems. 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 All information provided by 3D Systems.

Order this product through the following link:

http://www.lookpolymers.com/polymer_3D-Systems-DuraForm-Flex-Thermoplastic-Elastomer-for-SLS-Systems.php

Physical Properties	Metric	English	Comments
Bulk Density	0.440 g/cc	0.0159 lb/in ³	tap; ASTM D4164

Mechanical Properties	Metric	English	Comments
Hardness, Shore A	45 - 75	45 - 75	ASTM D2240
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Tensile Strength, Ultimate	1.80 MPa	261 psi	as sintered; ASTM D638
	2.30 MPa	334 psi	infiltrated with flexseal (8-dip process); ASTM D638
Elongation at Break	110 %	110 %	ASTM D638
	151 %	151 %	ASTM D638
Tensile Modulus	0.00740 GPa	1.07 ksi	as sintered; ASTM D638
	0.00920 GPa	1.33 ksi	infiltrated with flexseal (8-dip process); ASTM D638
Flexural Modulus	0.00590 GPa	0.856 ksi	ASTM D790
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Tear Strength	0.00780 GPa	1.13 ksi	ASTM D790
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Tear Strength	15.1 kN/m	86.2 pli	Die C; initial; as sintered
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Tear Strength	15.4 kN/m	87.9 pli	Die C; initial; infiltrated with flexseal (8-dip process)
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	83.5	83.5	

Taber Abrasion, mg/1000 Cycles Mechanical Properties	Metric @Load 1.00 kg	English @Load 2.20 lb	CS-17 wheel; ASTM D4060 Comments
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Thermal Properties	Metric	English	Comments
Melting Point	192 °C	378 °F	DSC

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.30e+14 ohm-cm	1.30e+14 ohm-cm	ASTM D257
Surface Resistance	1.10e+14 ohm	1.10e+14 ohm	ASTM D257
Dielectric Constant	1.85 @Frequency 1000 Hz	1.85 @Frequency 1000 Hz	ASTM D150
Dielectric Strength	1.90 kV/mm	48.3 kV/in	ASTM D149
Dissipation Factor	0.0030 @Frequency 1000 Hz	0.0030 @Frequency 1000 Hz	ASTM D150

Descriptive Properties	Value	Comments
Bursting Strength, Straight (MPa)	0	23°C, 25mm ID x 2mm thick x 300mm long hose; No Infiltration
	0.076	23°C, 25mm ID x 2mm thick x 300mm long hose; FlexSeal Infiltration
	0.21	23°C, 25mm ID x 2mm thick x 300mm long hose; Two-Part Polyurethane Infiltration

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