

# DuraForm® Flex

Thermoplastic Elastomer

3D Systems

Message:

A durable, rubber-like material with good tear resistance and burst strength

Applications

Gaskets, hoses and seals

Athletic footwear

Ear molds

"Soft-touch," over molded grips

Features

Rubber-like flexibility

Durable and tear-resistant

Resists harsh environments

Good long-term stability

Excellent surface finish and feature detail

Create colored parts using standard infiltrants

Benefits

Rapidly produce parts with the look and feel of rubber and thermoplastic elastomers

Eliminate the time and cost of casting, machining or other secondary processes

Address broad applications requiring rubber-like flexibility and durability

Address end-use applications requiring long-term stability

Minimal finishing required

Reduced cost per part

General Information	
Features	Durable
	Good Flexibility
	Good Stability
	Good Surface Finish
	Good Tear Strength
	Soft
Uses	Footwear
	Gaskets
	Hose
	Mold Making
	Overmolding
	Prototyping
	Rubber Replacement
	Seals
Appearance	Black
	Blue
	Natural Color
	Red

Yellow

Forms	Powder		
Processing Method	3D Printing, Laser Sintering/Melting		
Physical	Nominal Value	Unit	Test Method
Density <sup>1</sup>	0.440	g/cm <sup>3</sup>	ASTM D4164
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness			ASTM D2240
Shore A <sup>2</sup>	55 to 80		
Shore A <sup>3</sup>	45 to 75		
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			ASTM D638
-- <sup>4</sup>	7.40	MPa	
-- <sup>5</sup>	9.20	MPa	
Tensile Strength			ASTM D638
Break <sup>6</sup>	2.30	MPa	
Break <sup>7</sup>	1.80	MPa	
Tensile Elongation			ASTM D638
Break <sup>8</sup>	150	%	
Break <sup>9</sup>	110	%	
Flexural Modulus			ASTM D790
23°C <sup>10</sup>	5.90	MPa	
23°C <sup>11</sup>	7.80	MPa	
Taber Abrasion Resistance (1000 Cycles, 1000 g, CS-17 Wheel)	83.5	mg	ASTM D4060
Elastomers	Nominal Value	Unit	Test Method
Tear Strength <sup>12</sup>			ASTM D624
23°C <sup>13</sup>	15.4	kN/m	
23°C <sup>14</sup>	15.1	kN/m	
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity <sup>15</sup>	1.1E+14	ohms	ASTM D257
Volume Resistivity <sup>16</sup>	1.3E+14	ohms · cm	ASTM D257
Dielectric Strength <sup>17</sup>	1.9	kV/mm	ASTM D149
Dielectric Constant <sup>18</sup> (1 kHz)	0.00300		ASTM D150
Dissipation Factor <sup>19</sup> (1 kHz)	3.0E-3		ASTM D150
Additional Information	Nominal Value	Unit	
Burst Strength <sup>20</sup>			
As Sintered, No infiltration : 23°C	0.00	MPa	
FlexSeal Infiltration : 23°C	0.0760	MPa	
Two-Part Polyurethane Infiltration : 23°C	0.210	MPa	
NOTE			
1.	Tap		

2.	Infiltrated with FlexSeal (8 Dip Process)
3.	As Sintered
4.	As Sintered
5.	Infiltrated with FlexSeal (8 Dip Process)
6.	Infiltrated with FlexSeal (8 Dip Process)
7.	As Sintered
8.	Infiltrated with FlexSeal (8 Dip Process)
9.	As Sintered
10.	As Sintered
11.	Infiltrated with FlexSeal (8 Dip Process)
12.	Die C
13.	Infiltrated with FlexSeal (8 Dip Process)
14.	As Sintered
15.	As Sintered
16.	As Sintered
17.	As Sintered
18.	As Sintered
19.	As Sintered
20.	25 mm ID x 2 mm thick x 300 mm long hose

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#### Recommended distributors for this material

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