

# Selective Laser Sintering (SLS®) Material Selection Guide



Materials									
DuraForm® Flex	DuraForm® EX	DuraForm® PA	DuraForm® FR100	CastForm® PS	DuraForm® GF	DuraForm® HST	DuraForm® PRO	DuraForm® PRO X	

Material Property									
<b>Rigid/Durable-Stiff</b>						●●●●	●●●●●		
<b>Non-Rigid/Durable-Tough</b>		●●●●	●●●●	●●●●				●●●●	●●●●
<b>High-Temperature Resistance</b>		●●●	●●●	●●●		●●●●	●●●●	●●●	●●●
<b>Elastomeric/Rubber-like</b>	●●●●●								
<b>High Elongation</b>	●●●●●	●●●●	●●●	●●●				●●●	●●●
<b>High-Impact Strength</b>		●●●●●	●●●●	●●●●		●●●	●●●●	●●●●	●●●●
<b>USP Class VI Compliant</b>			●●●●●					●●●●●	
<b>Accuracy</b>	●●●●	●●●●	●●●●●	●●●	●●●●●	●●●●●	●●●●●	●●●●	●●●●●
<b>Surface Finish</b>	●●●	●●●●	●●●●	●●●	●●●	●●●	●●●	●●●●●	●●●●●
<b>Color</b>	Black, Red, Yellow, Blue, Natural	Off-White or Black	Off-White	Off-White	White	Pale Grey	Pale Grey	Off-White	Off-White

Recommended Applications									
<b>Production Parts</b>		●●●●●	●●●●●			●●●●●	●●●●●	●●●●	●●●●●
<b>Parts with Snap Fits/Living Hinges</b>		●●●●●	●●●●	●●●●				●●●●	●●●●
<b>Automotive Design</b>		●●●●	●●●●●			●●●●	●●●●	●●●●	●●●●●
<b>Aerospace Parts &amp; Ducting</b>		●●●●●	●●●●	●●●●●		●●●●	●●●●●	●●●●	●●●●
<b>Medical Applications</b>			●●●●●					●●●●●	
<b>Jigs/Fixtures/Tools</b>		●●●	●●●●			●●●●●	●●●●●	●●●●	●●●●
<b>Flame Retardant</b>				●●●●●					
<b>Investment Casting Patterns</b>					●●●●●				
<b>Gaskets, Seals and Hoses</b>	●●●●●								

Ranking: A five-star rating is superior—ratings are relative to other materials presented.

**RATING SYSTEM** { ●●●●● = BEST  
●●●● = BETTER  
●●● = GOOD

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DuraForm <sup>®</sup> Flex (as sintered)	DuraForm <sup>®</sup> EX	DuraForm <sup>®</sup> PA	DuraForm <sup>®</sup> FR100	CastForm <sup>®</sup> PS	DuraForm <sup>®</sup> GF	DuraForm <sup>®</sup> HST	DuraForm <sup>®</sup> PRO		

Material Property									
<b>Density (Sintered Part)</b>	ASTM 792	-	1.01 g/cm <sup>3</sup>	1.03 g/cm <sup>3</sup>	0.46 g/cm <sup>3</sup>	0.86 g/cm <sup>3</sup>	1.49 g/cm <sup>3</sup>	1.20 g/cm <sup>3</sup>	0.93 g/cm <sup>3</sup>
<b>Flexural Modulus (MPa)</b>	ASTM D790	5.9	1310	1387	1462	-	3106	4400-4550	1256
<b>Flexural Strength, Ultimate (MPa)</b>	ASTM D790	48	46	48	46	-	37	83-89	52.2
<b>Tensile Modulus (MPa)</b>	ASTM D638	5.9	1517	1586	1880	1604	4068	5475-5725	1441
<b>Tensile Strength, Ultimate (MPa)</b>	ASTM D638	1.8	48	43	32	2.84	26	48-51	41.1
<b>Elongation at Break</b>	ASTM D638	110 %	47 %	14 %	20 %	-	1.4 %	4.5 %	12.3 %
<b>Impact Strength (J/m)</b> Notched Izod, 23 °C Unnotched Izod, 23 °C	ASTM D256	- -	74 1486	32 336	49 371	< 11 14	41 123	37.4 310	33
<b>Heat Deflection Temperature</b>	ASTM D648 @ 0.45 MPa @ 1.82 MPa	- -	188 °C 48 °C	180 °C 95 °C	194 °C 70 °C	- -	179 °C 134 °C	184 °C 179 °C	172 °C -
<b>Flammability</b>	UL 94	-	HB	HB	V-0	-	HB	HB	-
<b>Hardness, Shore D</b>	ASTM D2240	45-75	74	73	73	-	77	75	73

**USA**  
Tel: +1 803.326.3900  
[moreinfo@3dsystems.com](mailto:moreinfo@3dsystems.com)

**UK**  
Tel: (+44) 1442 282 600  
[info@3dsystems-europe.com](mailto:info@3dsystems-europe.com)

**Germany, Scandinavia,  
Eastern Europe, Middle East**  
Tel: (+49) 6151 357 0  
[info@3dsystems-europe.com](mailto:info@3dsystems-europe.com)

**Asia-Pacific**  
Melbourne Tel: +61 3 9819 4422  
Sydney Tel: +61 2 9516 5571  
[3dprinters.asiapac@3dsystems.com](mailto:3dprinters.asiapac@3dsystems.com)

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