

# MATERIAL SELECTION GUIDE FOR SELECTIVE LASER SINTERING – SLS

	DuraForm® TPU	DuraForm® Flex	DuraForm® EX	DuraForm® PA	DuraForm® GF	DuraForm® HST	CastForm® PS	DuraForm® ProX® PA	DuraForm® ProX® GF	DuraForm® ProX® HST
<b>MATERIAL PROPERTY</b>										
Flexible/durable					●●●●	●●●●●			●●●●	●●●●●
Non-rigid/durable-tough			●●●●	●●●●				●●●●		
Elastomeric/rubber-like	●●●●●	●●●●●								
High-temperature resistance			●●●	●●●	●●●●	●●●●		●●●	●●●●	●●●●●
High elongation	●●●●●	●●●●●	●●●●	●●●				●●●		
High-impact strength			●●●●●	●●●●	●●●	●●●●		●●●●	●●●●	●●●●
Accuracy	●●●●	●●●●	●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●
Surface finish	●●●	●●●	●●●●	●●●●	●●●	●●●	●●●	●●●●●	●●●	●●●
Color	White	White	Black or White	White	Pale grey	Pale grey	White	White	Pale grey	Pale grey

<b>RECOMMENDED APPLICATIONS</b>										
Production parts	●●●●		●●●●●	●●●●●	●●●●●	●●●●●		●●●●●	●●●●●	●●●●●
Parts with snap fits/living hinges			●●●●●	●●●●				●●●●		
Automotive design			●●●●	●●●●●	●●●●	●●●●		●●●●●	●●●●	●●●●
Aerospace parts and ducting			●●●●●	●●●●	●●●●	●●●●●		●●●●	●●●●	●●●●●
Medical applications				●●●●●				●●●●●		
Jigs/fixtures/tools			●●●	●●●●	●●●●●	●●●●●		●●●●	●●●●●	●●●●●
Investment casting patterns							●●●●●			
Gaskets, seals and hoses	●●●●●	●●●●●								
Footwear	●●●●●	●●●●								

**Ranking:** Ratings are relative to other materials presented.

\* Please see the product datasheet for more detailed information.

**RATING SYSTEM** 

		DuraForm <sup>®</sup> TPU	DuraForm <sup>®</sup> Flex	DuraForm <sup>®</sup> EX	DuraForm <sup>®</sup> PA	DuraForm <sup>®</sup> GF	DuraForm <sup>®</sup> HST	CastForm <sup>®</sup> PS	DuraForm <sup>®</sup> ProX <sup>®</sup> PA	DuraForm <sup>®</sup> ProX <sup>®</sup> GF	DuraForm <sup>®</sup> ProX <sup>®</sup> HST
<b>MATERIAL PROPERTY</b>											
<b>Density (sintered part)</b>	ASTM 792	0.78 g/cm <sup>3</sup>	-	1.01 g/cm <sup>3</sup>	1.03 g/cm <sup>3</sup>	1.49 g/cm <sup>3</sup>	1.20 g/cm <sup>3</sup>	0.86 g/cm <sup>3</sup>	0.95 g/cm <sup>3</sup>	1.33 g/cm <sup>3</sup>	1.12 g/cm <sup>3</sup>
<b>Flexural Modulus (MPa)</b>	ASTM D790	6.0	5.9	1310	1387	3106	4400-4550	-	1650	3123	3427
<b>Flexural Strength, ultimate (MPa)</b>	ASTM D790	-	48	46	48	37	83-89	-	63	62	75
<b>Tensile Modulus (MPa)</b>	ASTM D638	5.3	5.9	1517	1586	4068	5475-5725	1604	1770	3723	4123
<b>Tensile strength, Ultimate (MPa)</b>	ASTM D638	2.0	1.8	48	43	26	48-51	2.84	47	45	44
<b>Elongation at break</b>	ASTM D638	200 %	110 %	47 %	14 %	1.4 %	4.5 %	-	22 %	2.8 %	4.3 %
<b>Impact strength (J/m)</b> Notched Izod, 23 °C Unnotched Izod, 23 °C	ASTM D256	- -	- -	74 1486	32 336	41 123	37.4 310	< 11 14	45 644	48 207	55 307
<b>Heat deflection temperature</b>	ASTM D648 @ 0.45 MPa @ 1.82 MPa	- -	- -	188 °C 48 °C	180 °C 95 °C	179 °C 134 °C	184 °C 179 °C	- -	182 °C 97 °C	180 °C 129 °C	183 °C 171 °C
<b>Flammability</b>	UL 94	-	-	HB	HB	HB	HB	-	HB	HB	HB
<b>Hardness</b>	ASTM D2240	59A	45-75A	74D	73D	77D	75D	-	73D	73D	73D

<b>PRINTER COMPATIBILITY</b>											
<b>sPro™ 60 HD-HS</b>		●	●	●	●	●	●	●			
<b>sPro™ 140</b>				●	●	●					
<b>sPro™ 230</b>				●	●	●					
<b>ProX<sup>®</sup> SLS 500</b>									●	●	●

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