

# MATERIAL SELECTION GUIDE FOR SELECTIVE LASER SINTERING – SLS

	DuraForm® TPU	DuraForm Flex	DuraForm EX / DuraForm ProX EX (BLK & NAT)	DuraForm PA / DuraForm ProX PA	DuraForm GF / DuraForm ProX GF	DuraForm HST / DuraForm ProX HST	CastForm PS	DuraForm FR1200 / DuraForm ProX FR1200	DuraForm ProX AF+
<b>Base Material</b>	Thermoplastic Polyurethane	Thermoplastic Elastomer	Nylon/PA11	Nylon/PA12	Nylon/PA12	Nylon/PA12	Polystyrene	Nylon/PA12	Nylon/PA12
<b>Stiff / rigid</b>					●●●●	●●●●●			●●●●
<b>Non-rigid / durable-tough</b>			●●●●●	●●●●				●●●	
<b>Elastomeric / rubber-like</b>	●●●●●	●●●●●							
<b>High-temperature resistance</b>					●●●	●●●●			●●●●
<b>High elongation</b>	●●●●●	●●●●●	●●●●	●●●					
<b>High-impact strength</b>			●●●●●	●●●●		●●●			●●●
<b>Accuracy</b>	●●●●	●●●●	●●●	●●●●●	●●●●	●●●●	●●●●●	●●●●	●●●●
<b>Surface finish</b>	●●●	●●●	●●●●	●●●●●	●●●	●●●	●●●	●●●●	●●●●
<b>Color</b>	White	White	Black or White	White	Pale grey	Pale grey	White	White	Metallic grey

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

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

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

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

Sintered Part Density (g/cm <sup>3</sup> )	Flexural Modulus (MPa)	Flexural Strength (MPa)	Tensile Modulus (MPa)	Tensile Strength (MPa)	Elongation at Break (%)	Impact Strength (J/m) Notched Izod Unnotched Izod	Heat Deflection Temperature (°C) @ 0.45 MPa @ 1.82 MPa	Flammability	Hardness
ASTM 792	ASTM D 790	ASTM D 790	ASTM D 638	ASTM D 638	ASTM D 638	ASTM D 256	ASTM D 648	UL 94	ASTM D2240

**sPro™ Compatible Material Properties**

DuraForm TPU <sup>1</sup>	0.78	6.0	-	5.3	2.0	220 %	-	-	-	59A
DuraForm Flex <sup>1</sup>	-	5.9	48	5.9	1.8	110 %	-	-	-	45-75A
DuraForm EX	1.01	1310	46	1517	48	47 %	74 1486	188 48	HB	74D
DuraForm PA	1.03	1387	48	1586	43	14 %	32 336	180 95	HB	73D
DuraForm GF	1.49	3106	37	4068	26	1.4 %	41 123	179 134	HB	77D
DuraForm HST	1.20	4400-4550	83-89	5475-5725	48-51	4.5 %	37.4 310	184 179	HB	75D
CastForm PS	0.86	-	-	1604	2.84	-	< 11 14	- -	-	-
DuraForm FR1200*	1.02	1770	62	2040	41	5.9 %	25 233	180 94	HB	76D

<sup>1</sup> Material compatible only with sPro 60 HD-HS.

**ProX® Compatible Material Properties**

DuraForm ProX PA	0.95	1650	63	1770	47	22 %	45 644	182 97	HB	73D
DuraForm ProX GF	1.33	3120	60	3720	45	2.8 %	48 207	180 129	HB	73D
DuraForm ProX HST	1.12	3430	75	4123	44	4.3 %	55 307	183 171	HB	73D
DuraForm ProX EX BLK	1.02	1360	51	1570	43	60 % <sup>2</sup>	75 3336	193 57	HB	76D
DuraForm ProX EX NAT	1.02	1436	56	1590	51	61 % <sup>2</sup>	91 Did not break	192 56	HB	77D
DuraForm ProX AF+	1.31	3710	64	4340	37	3 %	54 255	182 174	HB	78D
DuraForm ProX FR1200	1.03	1720	61	2010	45	8 %	24 278	180 94	HB	77D

<sup>2</sup> XY orientation at 5mm/min

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