3D SYSTEMS

MATERIAL SELECTION GUIDE FOR SELECTIVE LASER SINTERING – SLS

	DuraForm TPU	DuraForm Flex	DuraForm EX / DuraForm ProX EX BLK	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+
Base Material	Thermoplastic Polyurethane	Thermoplastic Elastomer	Nylon/PA11	Nylon/PA12	Nylon/PA12	Nylon/PA12	Polystyrene	Nylon/PA12	Nylon/PA12
Stiff / rigid					●●●●	●●●●●			●●●●
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	Metallic grey
RECOMMENDED APPLICATIONS									
Production parts	●●●●	●●●●	●●●●●	●●●●●	●●●●●	●●●●●		●●●●●	●●●●●
Snap fits / living hinges			●●●●●	●●●●					
Automotive design			●●●●	●●●●●	●●●●	●●●●			●●●●●
Aerospace parts and ducting			●●●●●	●●●●	●●●●	●●●●●		●●●●●	●●●●
Fire retardant production parts								●●●●●	
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

●●●●● = **BEST**
●●●● = **BETTER**
●●● = **GOOD**

	Sintered Part Density (g/cm^3)	Flexural Modulus (MPa)	Flexural Strength (MPa)	Tensile Modulus (MPa)	Tensile Strength (MPa)	Elongation at Break (%)	Impact Strength (J/m) Unnotched Izod Notched 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*	0.78	6.0	-	5.3	2.0	220 %	- -	- -	-	59A
DuraForm Flex*	-	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
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 %	75 3336	193 57	HB	76D
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

* Material compatible only with sPro™ 60 HD-HS.

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