

MATERIALS COMPARISON - DESIGN GUIDELINES

Polymers



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	LAYER THICKNESS	MINIMUM WALL THICKNESS	ACCURACY	MAX SIZE (mm)	STEMMED ELEMENTS	MINIMUM VISIBLE DETAIL	ENGRAVING	EMBOSSING	ENLARGEMENT RATIO	INTERLOCKING & ENCLOSING PARTS	ASSEMBLY	HOLLOWING	
	Print resolution.	Minimum recommended wall size to ensure there are no errors during printing	Expected degree of dimensional accuracy.	Maximum dimensions possible to respect an item	Internal elements connected by at least two sides (with support) and by less than two sides (without support)	Minimum dimension to ensure detail visibility.	Graphic elements hollowed out on the surface of the model.	Graphic elements raised above the surface of the model.	Minimum ratio to be observed between the diameter of a hole and the thickness of the wall of the model.	Possibility to print parts that will articulate between each other & Possibility to print a model with volume inclusions.	Possibility of assembling parts while leaving a minimum space between them.	Optimization of the weight and price of a model by removing internal material.	
MATERIAL													
SLS Technology	PA12	100 - 120 µm	Flexible: 0.8mm Rigid: 2mm	0.3% (min of ± 0.3 mm)	Raw: 675 x 366 x 545 mm	0.8 mm (supported) 1 mm (unsupported)	0.3 mm	0.5 mm	0.4 mm	1/1	Yes & Yes	Yes	Yes
	Nylon 3200 Glass Filled	100 µm	Flexible: 1.5mm Rigid: 2mm	-	Raw: 190 x 240 x 315 mm	-	1 mm	-	-	1/1	Yes & Yes	Yes	Yes
	Alumide	150 µm	1.5mm	-	Raw: 190 x 240 x 315 mm	-	1 mm	-	-	1/1	Yes & Yes	Yes	Yes
	Ultrasint® TPU 88A	100 µm	0.8mm	0.3% (min of ± 0.3 mm)	300 x 300 x 300 mm	1 mm (supported) 1.2 mm (unsupported)	-	0.7 mm	0.7 mm	1/1	Yes & Yes	Yes	Yes
	Ultrasint® PA6 FR	100 µm	0.8mm	0.3% (min of ± 0.3 mm)	360 x 360 x 420 mm	0.8 mm (supported) 1 mm (unsupported)	-	0.5 mm	0.5 mm	1/1	Yes & Yes	Yes	Yes
	Ultrasint® PA6 MF	100 µm	0.8mm	0.3% (min of ± 0.3 mm)	360 x 360 x 420 mm	0.8 mm (supported) 1 mm (unsupported)	-	0.5 mm	0.5 mm	1/1	Yes & Yes	Yes	Yes
	Ultrasint® PA11	100 µm	0.8mm	0.3% (min of ± 0.3 mm)	Raw : 190 x 240 x 315 mm	0.8 mm (supported) 1.5 mm (unsupported)	-	0.5 mm	0.5 mm	1/1	Yes & Yes	-	Yes
	Ultrasint® PA11 ESD	100 µm	0.7mm	0.4% (min of ± 0.4 mm)	Raw : 150 x 200 x 250 mm	0.7 mm (supported) 1 mm (unsupported)	-	0.5 mm	0.5 mm	1/1	Yes & Yes	-	Yes
	Ultrasint® PA11 CF	100 µm	1mm	0.3% (min of ± 0.3 mm)	Raw : 260 x 230 x 260 mm	1.5 mm (supported) 1.5 mm (unsupported)	-	0.5 mm	0.5 mm	1/1	Yes & Yes	-	Yes
MJF Technology	PA12	80 µm	Flexible: 0.6mm Rigid: 2mm	0.3% (min of ± 0.3 mm)	Raw: 370 x 274 x 380 mm	0.7mm (supported) 0.9mm (unsupported)	0.2 mm	0.3 mm	0.4 mm	1/1	Yes & Yes	Yes	Yes
	PP	120 µm	0.8 mm	0.3% (min of ± 0.3 mm)	370 x 274 x 380 mm	1 mm (supported) 1.2mm (unsupported)	-	0.5 mm	0.5 mm	1/1	Yes & Yes	Yes	Yes
	Ultrasint® TPU01	100 µm	0.8 mm	0.3% (min of ± 0.3 mm)	274 x 370 x 380 mm	1mm (supported) 1.2mm (unsupported)	-	0.7 mm	0.7 mm	1/1	Yes & Yes	Yes	Yes
	Multi Jet Fusion PA11	100 µm	1 mm	0.3% (min of ± 0.3 mm)	Raw: 274 x 370 x 380 mm	1mm (supported) 1.5mm (unsupported)	-	0.5 mm	0.5 mm	1/1	Yes & Yes	-	Yes
FDM Technology	PLA Big-Rep	-	-	-	1 x 1 x 1 m	-	-	-	-	-	- & No	No	No