Additive
Design Guidelines //

FATHOM
DIGITAL MANUFACTURING. **REIMAGINED.**

	Wall Thickness	Hole Diameter	Clearance For 3D Printed Assemblies	Escape Holes	Minimum Detail	Pin Diameter	Z Accuracy	XY Accuracy	Standard Layer Thickness[1]
FDM	1 mm	1.6 mm	0.5 mm	–	0.5 mm for 0.127 mm Slices	2 mm	XY Accuracy Plus Additional Tolerance of -0.000/+ Slice Height	+/- 0.127 mm (0.005 in) or +/- 0.002 mm/mm (0.002 in/in) (whichever is greater)	0.25 mm (.010) [5]
SLS	0.7 mm [4]	1 mm	0.5 mm	5 mm [3]	0.7 mm [4]	1 mm	+/- 0.3 mm (0.012) or 0.3% (whichever is greater)[2]	+/- 0.3 mm (.012) or -0.3% (whichever is greater)[2]	0.12 mm (.005)
MJF	0.7 mm [4]	1 mm	0.5 mm	5 mm [3]	0.4 mm [4]	1 mm	+/- 0.5 mm or 0.5% (whichever is greater)[2]	+/- 0.3 mm (.012) on XY or =/- 0.3% (whichever is greater)[2]	0.08 mm (.003)
SLA	1 mm	0.5 mm	0.5 mm	5 mm	0.5 mm	1 mm	+/- 0.2 mm (0.008) or 0.2% (whichever is greater)	+/- 0.2 mm (0.008) or 0.2% (whichever is greater)	0.1 mm (.004)
PolyJet	1 mm	0.5 mm	0.4 mm	–	0.4 mm	1 mm	+/- 0.2 mm (0.008) or 0.002 mm/mm (whichever is greater)	+/- 0.2 mm (0.008) or 0.002 mm/mm (whichever is greater)	0.03 mm (.001)
DMLS	0.5 mm	0.5 mm	0.5 mm	2 mm	0.5 mm	0.5 mm	+/- 0.005” for the first inch and 0.002” for every inch thereafter	+/- 0.005” for the first inch and 0.002” for every inch thereafter	Material dependent
STEP	0.2 mm	0.4 mm	0.5 mm	1 mm	0.3 mm	0.5 mm	+/- 0.006” up to 30 mm and +/- 0.5% for dimensions larger than 30 mm	+/- 0.006” up to 30 mm and +/- 0.5% for dimensions larger than 30 mm	0.013mm (0.0005)

* All values are dependent on overall geometry, part function and build orientation.
[1] Fathom’s standard layer thickness per technology.
[2] Values can increase for solid parts with a wall thickness of less than 5 mm.
[3] Escape holes for SLS and MJF: At the 5 mm size, powder removal is best effort; larger diameters are needed for total removal.
[4] Wall thickness and minimum detail for SLS and MJF: Features under 1 mm are best effort and are considered customer at risk.
[5] FDM layer thickness is 0.010 in. for small frame machines and 0.013 in. for large frame machines.