Design Guide - SLA 3D Printing

Build Volume: 800x800x390mm

Advantages
Accurate to CAD
Fast build times
No tooling costs
Complex geometries possible
Good surface finish

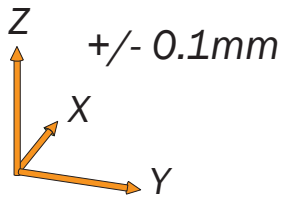
Drawbacks
Brittle materials
Need support material

Tips & Tricks
Reduce weight to save costs
Add escape holes for resin in closed sections
Fillet walls and pins for extra strength

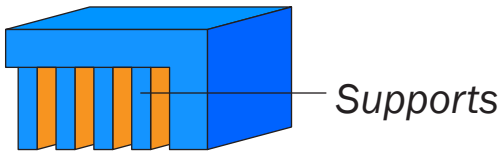
Surface Finishes
Polishing
Sand blasting
Painting
Plating & more

Materials
ABS like materials
High temperature
"tough" materials
Transparent materials

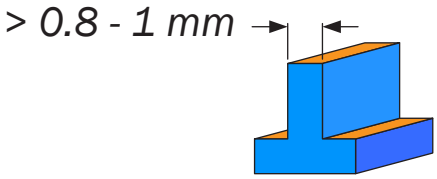
Tolerances - layer thickness is 0.1 – 0.2mm. SLA is very accurate in the x and y directions, meaning models are very accurate to CAD. General tolerance is +/- 0.1mm.



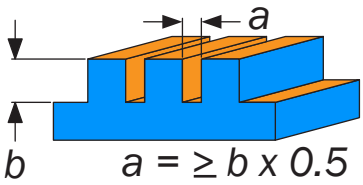
Overhangs - not a problem for SLA due to the supports. Unsupported overhangs will warp.

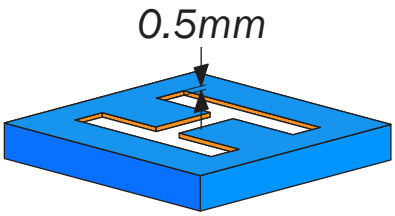


Walls - SLA can manage very thin walls but PoMo do not recommend anything under 0.8 – 1mm.



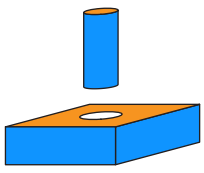
Holes & Slots - we recommend a minimum of 0.5mm but the larger the better especially as wall thickness or depth increases.





Text & Engraved Details - are at risk of closing up if not designed with 0.5mm > minimum height.

Mating Parts - minimum 0.5mm gap between axel and bore or other moving parts.



Minimum Clearance = 0.5mm

Pins & Embossed Features
Pins ≥ 0.8mm but even then risk breaking.
Embossed features ≥ 0.3mm.