

# HLH Design Guide - SLA 3D Printing

**Build Volume:** 800x800x390mm

## Tips & Tricks

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

## Advantages

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

## Drawbacks

Brittle materials  
Need support material

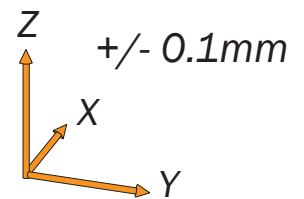
## Surface Finishes

Polishing  
Sand blasting  
Painting  
Plating & more

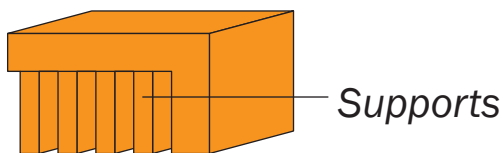
## Materials

ABS like materials  
High temperature  
"tough" materials  
Transparent materials

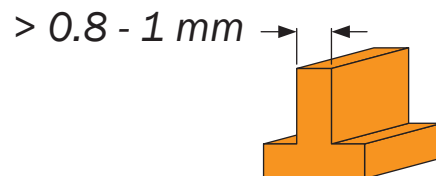
**Tolerances** - layer thickness is 0.1 – 0.2mm. SLA is very accurate in the x and y directions, meaning models are very accurate to CAD. General tolerance is +/- 0.1mm.



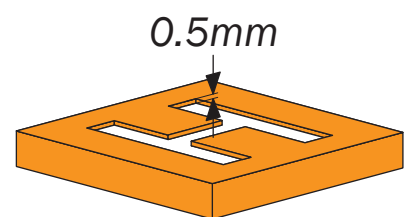
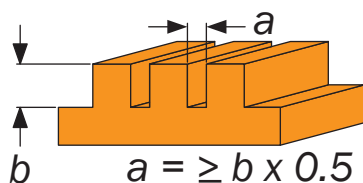
**Overhangs** - not a problem for SLA due to the supports. Unsupported overhangs will warp.



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

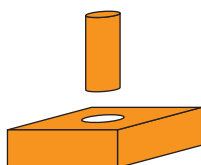


**Holes & Slots** - we recommend a minimum of 0.5mm but the larger the better especially as wall thickness or depth increases.



**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  $\geq 0.8$ mm but even then risk breaking.  
Embossed features  $\geq 0.3$ mm.

