Q & A 3D Printing

Q:) How thin of a wall can I print if that wall is not supported (free wall)?

A:) 1/8" is the thinnest wall that can be printed with no supports.

Q:) What is the thinnest wall I can print that is supported?

A:) If your wall is supported you can successfully print a wall that is 3/32" thick.

Q:) What is the thinnest wire form I can print?

A:) Whether you wire is supported or free the thinnest you can print is 1/8".

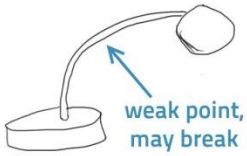
Q:) If I want to emboss or engrave on my part, how small of a detail can I print successfully?

A:) 1/64" is the smallest detail you can emboss or engrave, however embossing this size is still subject to breaking during the clean-up stage.

Here are some examples of how you should approach designing your models.

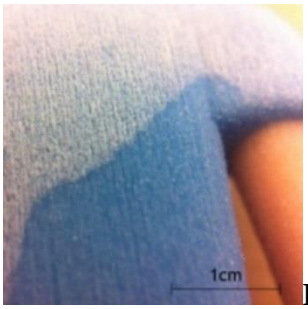
Sandcastle Rule: Ask yourself, "If this structure was made of wet sand, would it break?"

There is a phase in the printing process when the model is fragile and brittle. It's basically like wet sand. When you design, ask yourself this question: "If I made this out of wet sand or brittle clay, could I lift the design without it breaking?" If the answer is "no," then your design might break in production.



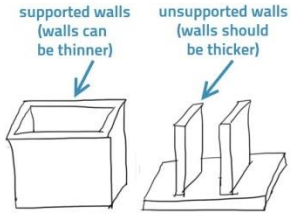
Hanging structures are not printable

Any structure that has a hanging component is likely to break. This includes the end piece in an unsupported, heavy object, as pictured. Another example of something that would break is a miniature of a person with an arm sticking straight out. The arm would break off.



Exposure to water will fade colors

The colors we use are similar to Inkjet Printer coloring, which fades when wet. The same principle applies to 3D printed colors. In this photo, the original color was a sky blue (as represented in the lower right of the photo), and after we dipped the model in water the blue faded and whitened. This model should not be designed for applications that requires the model to touch water.



The more supported, the thinner the structure (& vice versa)

Supported structures are structures that connect to other structures. As an example, think of an empty box. The bottom of the box is supported by the side walls, and can therefore be thinner. On the other hand, something like a fan blade is not supported except at the end. This kind of unsupported structure should be made thicker to avoid breakage during production.

Points to remember

- **Finished models should be formatted into the correct template**
- **Create manifold design from the start.**
- **Make sure all surfaces connect on all edges.**
- **No intersecting geometry.**
- **Combine your geometry so the outer surface is continuous (water tight).**
- **Delete all unnecessary information from your file.**
- **Scale everything in inches at 1:1 scale.**
- **Files must be less than 64mb.**

Please keep all of this in mind when prepping files to be 3D printed.

And always come by and see the staff early and often with additional questions.