Subject: about stainless wall thickness
Posted by photosfromrob on Thu, 04 Feb 2010 20:06:49 GMT
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I've read the materials page and I understand that the SS wall thickness has to be 3mm. I've been frustrated by that because I tend toward the more delicate designs and 3mm is just too heavy.

But looking through the gallery, I find that many pieces have been printed with less than 3mm, and I'm wondering why. Here is an example...http://www.shapeways.com/model/65567/armadillo.html.

He does fine work. In this example the band is probably 3mm, but the filigree on top is closer to 1mm and it printed fine.

Will somebody please explain to me what is actually acceptable.. what works. How small can I actually go?

Subject: Re: about stainless wall thickness
Posted by coines23 on Fri, 26 Feb 2010 01:21:18 GMT
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Hard to say. I got a successful steel print of this model, and the nacelle struts are just a bit over 1mm thick. They say the steel piece is very, very delicate prior to the bronze infusing, so it may just come down to how easy it is to support the model on the way to the bronzing process.

Then again, there may just be a black art to it

Subject: Re: about stainless wall thickness
Posted by dadrummond on Fri, 26 Feb 2010 02:02:01 GMT
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Read Joris's original post on design rules for metal printing. The relevant material:

Quote:small parts up to 50 by 50mm

95% of these parts print successfully. They can have very thin walls of below 1mm. But, the most important reason for failing is that the parts are not strong enough or do not self-support. The model will either fall apart or crush itself...With Stainless Steel it is not a case of absolute wall

thickness as with the other materials. The EOS printer that makes White, Strong & Flexible simply can not print thinner walls than 0.7mm (really, please only use 1mm or higher). With Stainless Steel there are a lot of variables. This is why it is so hard for us to give you guidance on what can and can not be done.

So: walls, and certainly details, below 3mm are possible; be careful, and try to think about the physical process that produces your piece as you model it; and if Shapeways decides that your piece doesn't pass muster without increased thickness or strength, respect their experience.

I've had very good luck in getting rings, beetles with tiny claws, trees with tiny leaves on even tinier stems, and so on printed. I've tried to be very careful to make my designs sturdy, such that those little details are really details and not load-bearing. Shapeways has been quite tolerant and has delivered beautiful prints in the vast majority of cases.