Subject: Same STL model file, different 3D printed model?
Posted by {DF} on Fri, 07 Sep 2012 17:32:18 GMT
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Hello Shapeways,

I received today my Purple Strong & Flexible version of my Slim iPhone 4/4s bumper.
I am still using the Red Strong and Flexible version of the same model (which I had ordered some time ago) for my iPhone4, which fits my device really really well. I was very surprised when I realized that the size of the same 3D printed (Purple Strong & Flexible version) model differs. Specifically, its height is less than 1 mm taller. Here is a screenshot:

Immediately, I put the model in the "Not For Sale" mode, then re-downloaded my STL file from my shop to re-measure it. What I found out after re-measuring the STL file, is that the dimensions are not changed since my upload. Here you can see a screenshot from my measuring in netfabb.

However, the 3D prints are different. See screenshot link below:
Red Strong and Flexible screenshot vs Purple Strong & Flexible screenshot

It might be a less than 1mm error, however, that makes the device float inside the bumper.
Do you know why this happened? In the meantime... people have ordered the bumper, are they going to have the same problem or its just me?
Any help on this will be welcome.

File Attachments

1) IMG_1919.jpg, downloaded 265 times

Subject: Re: Same STL model file, different 3D printed model?
Posted by coines23 on Fri, 07 Sep 2012 20:54:41 GMT
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My guess would be that they printed at different orientations, the shorter one printed flat and the longer one printed tall. Look closely for the print layer lines, and you'll see what I mean. I've had it happen with my models too.

Subject: Re: Same STL model file, different 3D printed model?
Posted by {DF} on Sat, 08 Sep 2012 10:09:59 GMT

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Hello coines23,
The model was "Originally uploaded on 22 Jun 2012" to my shop and ordered the same day. The orientation of the model never changed since the STL file never changed.
Even if I wouldn't remember that I changed the file, any change would be stated at the "File Status" of the model (visible in the "Edit Product" mode).

So, how can the same model be printed "flat" during the 1st print, then "tall" during the 2nd print?

Also, Apple's guidelines for iPhone cases is very precise. If you see my screenshot again, you'll see that the dimensions of my model follow Apple's measurements exactly as given by Apple.

Subject: Re: Same STL model file, different 3D printed model?
Posted by mkroeker on Sat, 08 Sep 2012 13:46:03 GMT
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Parts are never printed individually, and operators choose model orientations for each
run to maximize loading (while avoiding cases known to lead to unacceptable "stair-stepping"
or print lines on surfaces). This is a recurring gripe of artists and modelers here in the forum, and
there have been promises to include user-defined print orientation in the workflow at a later time.

Still, if your model absolutely requires _reproducible_ sub-millimeter precision, additive manufacturing
as a service on a per-piece basis may not be adequate - sintered materials are more or less "spongy"
on the micron scale, and individual pieces may be built on different printers, perhaps even by different
sub-contractors. Conventional plastics manufacturing on the other hand involves moulds machined to
high precisions and constantly monitored for wear, which is why it is economical only for large numbers.

Subject: Re: Same STL model file, different 3D printed model?
Posted by ChristelH on Mon, 10 Sep 2012 11:36:37 GMT
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Hi Dimitris,

I have received your email about your models and just sent you an email back about this.

Kindly,
Christel Hagens
Customer Service Agent
www.shapeways.com

Subject: Re: Same STL model file, different 3D printed model?
Posted by {DF} on Mon, 10 Sep 2012 12:22:32 GMT
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Thank you for your email ChristelH.

I have already replied to it.

Best, DF

Subject: Re: Same STL model file, different 3D printed model?
Posted by playonly on Fri, 28 Sep 2012 06:28:08 GMT
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I've had the exact same issue with my iphone case model that I've ordered twice. Same model, one is snug as modeled, the other is off by 1mm and slides in the case. What is the conclusion to this story? Wait and wish that shapeways will allow us to direct orientation someday?

Subject: Re: Same STL model file, different 3D printed model?
Posted by Youknowwho4eva on Fri, 28 Sep 2012 12:46:03 GMT
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By the guidelines (I'm assuming you printed in WSF) the tolerance is .15% of the longest side. So if your item is 666.67mm (which would be a pretty long phone case) long then 1mm is within the tolerance. If your item is off by more than .15% of the longest side, contact support, and they will get you fixed up.

Subject: Re: Same STL model file, different 3D printed model?
Posted by {DF} on Sat, 29 Sep 2012 07:14:28 GMT

I have contacted support and all they could do was to issue me a store credit, and not reprint the model. They said that this is within Shapeways' tolerance for Strong & Flexible material and this can happen.

I think this is not encouraging for designing iPhone cases. I am planning to design an iPhone 5 case as well, but will not offer it for sale in public until I will be able to direct the orientation of the model.

I still believe that this is an orientation issue. I think Shapeways should allow us to direct the orientation, at least for the iPhone cases, because accuracy is really important for cases' 3D printing.