Subject: Materials...?
Posted by actualday on Sun, 12 Feb 2012 20:00:28 GMT
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Hi Shapeways fans

Newby here, so please be patient!

I have been 3D modelling in Sketchup and AutoCAD for quite some time now, mostly architectural stuff for visualisation purposes and animations.

I have become quite interested in product design, and making Radio Controlled cars seems like a good project. I would like to make alloy wheels for an off road 1 tenth scale RC... would steel be accurate enough so that it did not produce an eliptical rotation??

Also I have heard that some 3D printers can print rubber like materials, would shapeways be able to print a rubber tyre with a wall thickness of 3mm?

Hope you guys can help.

Cheers

Subject: Re: Materials...?
Posted by abby on Sun, 12 Feb 2012 20:18:49 GMT
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Your post does not really explain what you want to know.
You state that you want to make alloy wheels then ask if steel will run true.
The most sensible way to produce tyres would be to have a master printed from which you would take a mould in order to cast further tyres in a suitable cold curing rubber like polymer.
An alternative would be to have two halves of a die printed and use these to cast the tyres.

Subject: Re: Materials...?
Posted by actualday on Sun, 12 Feb 2012 20:59:28 GMT
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hi sorry if my post wasnt clear, i am hoping to do two separate models...

1 is to print the actual wheels in the shapeways steel material, i am a bit concered that the prints

may deform during the process...

2 is to 3d print tyres in a rubber like material...

not sure if i am on the right lines with this and was just looking for some help finding my feet here...

thanks for your help

Subject: Re: Materials...?
Posted by abby on Sun, 12 Feb 2012 22:33:31 GMT
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OK. when you said alloy wheels I presumed that is what you meant i.e. wheels made of aluminium alloy.
If the printed wheels did not run true enough for you it would be easy to bore out the axle holes in a lathe.

Subject: Re: Materials...?
Posted by Kasss_Gnarl on Sun, 12 Feb 2012 22:57:13 GMT
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Hi actualday,

Before selecting your material be sure to take a look at the design rules for Stainless Steel. Stainless prints have an accuracy tolerance of +/- 2mm which is something to bear in mind. Have you looked at the plastic White Strong Flexible/WSF Polished material? It has a good strength, good detail level and takes paint well, along with being more accurate as well as a fair bit cheaper.

As far as rubber goes Shapeways doesn't currently offer a material like that. You can find out about all the different material options available under the 'Create' tab at the top of the page.

Hope this helps somewhat.

Subject: Re: Materials...?
Posted by Tamert on Mon, 13 Feb 2012 18:08:55 GMT
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I have found printing in stainless steel to create functional parts quite challenging. First, the parts can warp during manufacturing which has happened to some of my past prints and rendered them useless. The warping is geometry dependent so it's nearly impossible to tell if your structure will warp even when you have followed all of the design rules to the letter. Shapeways attempts to identify and correct potential warping issues, but they cannot predict the behavior for every case. See my thread here:

http://www.shapeways.com/forum/index.php?t=msg&goto=3974 6&#msg_39746

for details.

Second, you should think of the stainless steel print to be an as cast structure rather than something that has been machined. This means that your part will have a very significant amount of surface roughness.

Regarding printing rubber, no, shapeways doesn't print any rubber like materials. You would probably be much better off finding a tire supplier rather than trying to make your own.