Subject: Lost Details in FUD
Posted by tempusr67795_9000ff452ed on Tue, 20 Sep 2011 06:11:27 GMT
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Not quite sure where this should be posted, but since in the end it is a design question - this seems as good a place as any.

Basically, I have an object which I had printed. The object has a mostly flat surface. However at various locations on that surface there are spheres. Each sphere has a diameter of 0.3 mm and it is sunk half way into the surface (so that 0.15 mm protrude from the surface).

When I had the object printed most of these spheres seem to have not printed. Some did, however it seems that there really isn't a specific reason why a particular sphere printed while a different did not.

What size does a detail actually have to be in order to be printed reliably every time in FUD?

Subject: Re: Lost Details in FUD
Posted by Magic on Tue, 20 Sep 2011 10:10:56 GMT
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Not as sure as here, but it is also probably a model issue, like inverted normals.
Try to check the rendering (2D ou 3D visualisation) in the object page: what you see there is usually what you get.

Subject: Re: Lost Details in FUD
Posted by tempusr67795_9000ff452ed on Tue, 20 Sep 2011 11:29:19 GMT
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http://www.shapeways.com/model/309646/939e2cb35dcb26616667e7a29eed2aa1/7_5cm_gebirgskanone.html?gid=ug

Took a look at it in the 3D view, and although they don't seem to show up there - I think that is really an issue with the Java 3D applet.

The spheres are simple primitives (no booleans, no transformations, no nothing). It is pretty unlikely that the normals would have been flipped. I downloaded the file from the website just to double check the normals, and they are in fact pointed in the right direction.

Subject: Re: Lost Details in FUD
Posted by BillBedford on Tue, 20 Sep 2011 14:38:28 GMT
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These are rivet/bolt head details?

I think a 0.3mm sphere is always going to be problematical because it is on the limit of what is possible. If the centre of your sphere lines up with the printer's pixilation then it will print, otherwise it probably won't. I would tend to use something like a 0.3 diameter by 0.2 mm cylinder in this sort of situation once it is printed and finished it will look visually acceptable.

Subject: Re: Lost Details in FUD
Posted by Youknowwho4eva on Tue, 20 Sep 2011 16:58:25 GMT
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Do you have images of the problem area? I know details that small will probably be hard to photograph. This may be a question for service (service@shapeways.com) to see were the issue is.

Subject: Re: Lost Details in FUD
Posted by tempusr67795_9000ff452ed on Wed, 21 Sep 2011 00:00:15 GMT
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Quote:If the centre of your sphere lines up with the printer's pixilation then it will print, otherwise it probably won't. I would tend to use something like a 0.3 diameter by 0.2 mm cylinder in this sort of situation once it is printed and finished it will look visually acceptable.

Each "pixel" of the FUD material is well below the limit. The printed detail that they claim of 0.1 mm isn't a pixel size, rather the size that they feel should reliably print. The "pixels" themselves are many times smaller than that. It should print - though I am not entirely certain why it did not.

That said, I am thinking that a cylinder will print better than a sphere due to the sharper edges. However, since the prototypical rivets are hemispherical - I was hoping to use the same on the printed model.

Anywho - I have included a picture of the printed part and a corresponding shot of the 3D model from a similar angle.

I have not sanded or otherwise altered the printed model other than a very light coat of paint in order to provide better contrast.

Although the banding is an annoyance, I am more concerned with what will actually print.

File Attachments

1) model.jpg, downloaded 185 times
2) IMG_0615.JPG, downloaded 192 times