Subject: WSF polished
Posted by lukeuedasarson on Mon, 28 Jan 2013 13:45:46 GMT
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I've been hit with a bunch of rejected models problems recently with customers choosing WSF polished. On the materials page, it says 0.2 mm embossed is fine, but 0.5 mm is needed for readable text. Fine, none of my models have text, let alone text that needs to be readable. I've had models printed out with 0.42 mm embossing, and decided that they gave details that were TOO prominent - e.g the vertical bars on this 1:144 scale truck running down the rectangular box behind the cab.

Now I've been told they won't print out anything with less than 0.5 mm detail, despite the materials page clearly saying the limit is 0.2 mm, and previous experience showing 0.42 is *more* than enough to withstand polishing.

Which is annoying to say the least. Almost as annoying is being told (admittedly in a very polite manner!) to redesign the models. 50 models don't redesign themselves at the drop of a hat...

File Attachments

1) T148CLat144scale.png, downloaded 64 times

Subject: Re: WSF polished
Posted by Youknowwho4eva on Mon, 28 Jan 2013 15:31:32 GMT
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Did they provide an image showing where you needed to change your item? If so, could you share that with us?

Subject: Re: WSF polished
Posted by lukeuedasarson on Tue, 29 Jan 2013 11:04:56 GMT
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Sure, here is an example. This one has 0.2 mm features, rather than 0,4 mm features, however, but the principle is the same.

They also told me some models have walls that are too thin for polished, but alas, no pictures, there... Again, on the material data pages, there is no difference in their recommendations for

polished and non-polished.

File Attachments

1) 495945.JPG, downloaded 59 times

Subject: Re: WSF polished
Posted by Youknowwho4eva on Tue, 29 Jan 2013 14:27:55 GMT
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In the image you provided, there are elements at or below the .2mm. The problem arises that a customer will see the default render, and expect these ridges. If the item arrives and those details aren't there, or as prevalent as they expect, Shapeways is responsible for the refund. That's why the rule is there, and that's why they won't print it. Also we don't want to send out unacceptable product. So it would cost us money to have to reprint items that we feel don't stand up to our expectations.

If you can share the image of an item that was rejected for elements above the .2mm I can investigate and try to explain what's going on with them as well.

Subject: Re: WSF polished
Posted by lukeuedasarson on Thu, 31 Jan 2013 09:09:38 GMT
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> In the image you provided, there are elements at or below the .2mm.

Sure, but I'm not concerned about the ones under 0.2 mm. That's my fault. I'm concerned about the ones at 0.2 mm, which according to the data materials page, *are *acceptable.

>The problem arises that a customer will see the default render, and expect these ridges. If the item arrives and those details aren't there, or as prevalent as they expect, Shapeways is responsible for the refund. That's why the rule is there, and that's why they won't print it. Also we don't want to send out unacceptable product. So it would cost us money to have to reprint items that we feel don't stand up to our expectations.

Actually, here is what the customers says:

"I like it very much.
The WSF polished material is great, the smoothness is close to the FUD. I
hope there coming more"

Now I am aware not all *potential* customers may think like this one, but that's why my products carefully state that not all details will print out with all materials. As it is, he's my *actual* customer, and he hasn't got problems.

>If you can share the image of an item that was rejected for elements above the .2mm I can investigate and try to explain what's going on with them as well.

Sure - here the smallest rejected feature is 0.4164 mm.

File Attachments

1) 497785.JPG, downloaded 122 times

Subject: Re: WSF polished
Posted by stop4stuff on Thu, 31 Jan 2013 11:34:33 GMT
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In your image, the two areas marked at 0.62mm look to be walls as they appear to protrude from any supporting structure more than they are thick, I wouldn't expect one of my models to pass with areas like these,
I'd say the smaller 0.42mm thick lip is borderline, it depends how far out from any supporting structure it protrudes.

My general rule of thumb is to have details protrude out from any supporting structure less than the detail is thick.

Paul
stop4stuff Modeller for hireShapeways Shop - Controller PendantTwitterYouTube

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Subject: Re: WSF polished
Posted by lukeuedasarson on Thu, 31 Jan 2013 11:49:59 GMT

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>In your image, the two areas marked at 0.62mm look to be walls as they appear to protrude from any supporting structure more than they are thick, I wouldn't expect one of my models to pass with areas like these,

That sounds a rather arbitrary definition of "wall", and one that isn't consistent with what Shapeways told me when they suggested raising the detail of my 0.2 mm areas to 0.5 mm, because that would make them "walls" too.

It also doesn't square with the fact that these models only get rejected when somebody orders WSF polished. All is fine with plain WSF. I've never had a model rejected with WSF. Even the one I showed you with 0.18 mm details! (Which I hadn't realised were 0.18...)

>I'd say the smaller 0.42mm thick lip is borderline, it depends how far out from any supporting structure it protrudes.

Nonetheless, the materials page says 0.2 is acceptable. And that's what my question is about. If, in fact, 0.42 isn't acceptable, to say nothing of 0.2 mm, then the materials page should say so.

Subject: Re: WSF polished
Posted by stop4stuff on Thu, 31 Jan 2013 12:07:26 GMT
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Consider the cross section below.

Both parts A & B are the same size at 1 x 0.5 mm attached to a supporting surface of 1.5mm thickness.
Part A is a wall - this part protrudes more than its thickness from the supporting wall - the model would be rejected.
Part B is a detail - this part protrudes less than its thickness from a supporting wall

An arbitrary definition of a wall, yes, but it is a definition that works and sticking to it leads to less frustration.

If you've not already, its worth having a watch of the recent Shapeways Live which ALan, Shapeways WSF head talks about some of the reasons behind rejecting models and how thin walls can effect not only your model but the whole print run.

Paul

File Attachments

1) detail-wall.JPG, downloaded 112 times

Subject: Re: WSF polished
Posted by lukeuedasarson on Thu, 31 Jan 2013 13:04:47 GMT
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Where is this definition of wall found? I can't see it on the materials page.

In any case, it still doesn't address the actual topic of my post - which is that the pages says 0.2 mm high details (forget walls...) are OK, when in fact they want them to be at least 0.5 mm high. Actually no, let's not forget walls, because of your definition of "wall" that also implies details at least 0.5 mm across as well as high, which is absurd. There is no reason to be restricted to such a huge width. Polishing doesn't reduce widths, only heights.

The materials page says polishing "can take off up to 0.1 mm of the surface". 0.2 mm minus (up to) 0.1 mm still leaves (at least) 0.1 mm, so this makes sense. Ca. 0.1 mm steps are of course visible - as we know from the standard 0.12 mm step that is visible on curved surfaces depending on model orientation in the printer. 0.5 mm minus 0.1 mm leaves 0.4 mm, which doesn't make any sense.

>Part A is a wall - this part protrudes more than its thickness from the supporting wall - the model would be rejected.

Well, it in fact only gets rejected when polished is requested, but not otherwise. So "would" should be "could".

>If you've not already, its worth having a watch of the recent Shapeways Live which ALan, Shapeways WSF head talks about some of the reasons behind rejecting models and how thin walls can effect not only your model but the whole print run.

That's over half an hour long - do you know which part is the relevant portion?

Subject: Re: WSF polished
Posted by stop4stuff on Thu, 31 Jan 2013 14:08:12 GMT
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Just about all of the video is relevant, fundamentally the physical print process is explained which in turn leads to aspects of the design rules.

Another interesting Shapeways Tutorial is Design rules & detail resolution for SLS 3D printing linked to from the WSF design tips.

Paul