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Subject: Will it print or not?

Posted by [zero\\_hour](#) on Mon, 29 Oct 2012 16:12:03 GMT

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A month or so ago I created a model and had it printed in Black Detail to make sure everything was ok. It printed fine and I have the result.

Based on this I put together a product line in which includes this miniature in Black Detail (so I might need a couple dozen in the near future).

Last week I ordered a White Strong Flexible version (just to see if the quality was acceptable) and was told the walls were too thin?! That makes no sense as the black detail requires 1.0 mm and the WSF requires only 0.7 mm

So my question: Can I proceed with my product line, or is it a crap shoot whether Shapeways will print my model on any given day? In other words, will the Black Detail version be accepted (100% of the time) since it has already be successfully printed? Conversely, will White Strong Flexible be rejected 100% of the time? What about all of the other materials? I can't really afford to order every one in order to see what will work.

I KNOW the model prints fine as I have it here in my hand. Is there any way to just say "damn the automated check and print it"?

Honestly, I can't even leave the model for sale here on this website if it's going to be rejected randomly when customers order it. Shapeways may be ok with that level of unprofessionalism, but I hold my own business to a higher standard.

Thank you for the help - either from the Shapeways or the community. I saw the bit in the Thin Walls thread about previously accepted models now being rejected, but both of my orders are fairly recent (much more recent than that post) and so I don't think the checks changed from the one to the other.

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Subject: Re: Will it print or not?

Posted by [mkroeker](#) on Mon, 29 Oct 2012 16:38:23 GMT

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The rejection message probably contained a screenshot with the problematic area highlighted, so it should be possible to check whether the design guidelines were met or not.

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Subject: Re: Will it print or not?  
Posted by [zero\\_hour](#) on Mon, 29 Oct 2012 21:17:00 GMT  
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That's interesting, but let me restate my question more clearly:

If my model was accepted and printed successfully in Black Detail but later rejected in White/Strong/Flexible, what are the odds it will print successfully in Black Detail when I order 20 more?

I need the answer to be "100%" in order for me to launch my new product line (which was supposed to launch today but is being held up by this issue...).

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Subject: Re: Will it print or not?  
Posted by [mkroeker](#) on Mon, 29 Oct 2012 21:56:05 GMT  
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Well then, if you let me restate my answer as well  
If your model indeed contains a (half-)hidden flaw, i.e. a single structural element that is below the limits stated in the design guide, it will probably be down to chance whether the person in charge of preparing the print job on a given day will spot it or not - and equally importantly, whether it will print correctly if it "slips through".  
Print orientation may vary, the exact machine may vary as well, lastly there may be a chance that the problematic piece breaks off during handling and packaging, if it is some surface detail that stands out. You probably would not want to base your business on an out-of-spec model. So if the shapeways guys flagged something in your model, either try to fix it if at all possible, or convince yourself (and then customer service) that the weak part can never cause problems and the model was rejected in error.  
There was talk about an internal "already printed successfully" flag lately, and I do not know if it is already implemented, but it will only help if your model is good enough to refrain from damaging itself, other models in the

"build envelope", the printer or your reputation under all circumstances given above. (Even if shapeways would do a reprint "behind the scenes" when the first attempt fails, this would incur delays for your customer)

Lastly, if you post the screenshot you received, chances are that one of the experts here might explain what is the problem and how you could fix it.

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Subject: Re: Will it print or not?  
Posted by [stop4stuff](#) on Mon, 29 Oct 2012 22:35:14 GMT  
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Ki\_Ryn wrote on Mon, 29 October 2012 21:17  
That's interesting, but let me restate my question more clearly:

If my model was accepted and printed successfully in Black Detail but later rejected in White/Strong/Flexible, what are the odds it will print successfully in Black Detail when I order 20 more?

I need the answer to be "100%" in order for me to launch my new product line (which was supposed to launch today but is being held up by this issue...).

Your model was rejected at order time, please can you post the image attached to the rejection email so that we can help you.

Paul

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Subject: Re: Will it print or not?  
Posted by [zero\\_hour](#) on Tue, 30 Oct 2012 02:12:56 GMT  
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If I order the exact same product twice, I expect to get the same product each time. If Shapeways can't do that, then they aren't really ready for prime time are they? The procedures you describe sound like two dudes with a printer in their garage - not an international company trying to build a

good business reputation.

I don't need any help with the model. I could thicken up the (perfectly solid and safe) thin bit by reworking and re-uploading the model. I could even buy another copy to make sure it works ok, but there's no guarantee someone else on some random day in the future might flag something new and make my company look as unreliable as Shapeways.

This flag you mentioned sounds like a much needed necessity.

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Subject: Re: Will it print or not?

Posted by [megmaltese](#) on Fri, 02 Nov 2012 19:37:18 GMT

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Ki\_Ryn wrote on Tue, 30 October 2012 02:12

If I order the exact same product twice, I expect to get the same product each time. If Shapeways can't do that, then they aren't really ready for prime time are they? The procedures you describe sound like two dudes with a printer in their garage - not an international company trying to build a good business reputation.

LOL

Printing is not creating software.

It's a PHYSICAL process, and as so, it involves variations.

You can't expect a model to be 100% identical.

Different materials have different properties, some shrink more, some are more elastic, some more brittle, etc.

The rejection of your model may be a mistake or not.

Anyway I would suggest, before posting on forums, to contact them directly, there's a good support team.

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Subject: Re: Will it print or not?

Posted by [stop4stuff](#) on Sun, 04 Nov 2012 10:30:16 GMT

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I suppose the Shapeways process is not entirely clear, let me try to clarify things.

The process goes like this;

1. You upload a model to Shapeways.

1a. The model file is checked by software for various common flaws and if found, the flaws repaired, if not repairable then the model is rejected.

2. You order the model in your chosen material.

2a. A human operator checks the model on screen against a list of criteria for the material the model was ordered in. If there are any areas that fail the human check, the model is rejected.

3. Your model is delivered.

Just because your model was accepted for printing in one material doesn't mean to say that your model will be accepted for printing in another (even if similar) material.

I asked for a screenshot of the rejection, because sometimes humans get things wrong and if the case is presented properly, the error can be pointed out and the order re-instated. This could be something as simple as the operator measuring point-to-point rather than wall thickness, or even using the wrong units of measurement at assessment time (which has happened to some of my orders in the past).

Paul

stop4stuffModeller for hireShapeways ShopTwitterYouTube

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Subject: Re: Will it print or not?

Posted by [zero\\_hour](#) on Mon, 05 Nov 2012 19:59:56 GMT

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Below is the image from the rejection. When I saw it, I assumed that the struts were too thin since they cross open space between the parts of the ship. The printed out just fine and are plenty strong and well attached, but I figured that feature was what caused the rejection flag.

But when I went into to modify the model I found out that the struts are over 1mm thick. The only thin bit is that little lip (square shaped) around each indented part. Note that it isn't hollow in there, just extruded down .35mm (give or take). I don't think that ridge is really a "wall". It's just a detail, and there are lots of other little details and greebles that aren't 1 mm thick.

Do you think the Shapeways person mistook the indentation for an empty space, or does the thin wall rule mean that there can be no detail at a granularity less than 1mm (that would make the whole project moot!).

In my image, the blue quadrahedron is 0.35mm in width and height. The green one is 1mm. Notice that the struts themselves are over 1mm but the square shaped raised bits are about 0.35

mm. Since that is just a raised area (the struts aren't hollow), does it really count as a thin wall?

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Subject: Re: Will it print or not?

Posted by [zero\\_hour](#) on Mon, 05 Nov 2012 20:02:08 GMT

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As a follow up (and perhaps more importantly), if I replace the struts with solid quadrahedons, do you think this model will then be printable (and how can I find out for sure - I don't have the time or \$ to order one after every change just to see what will happen).

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Subject: Re: Will it print or not?

Posted by [mkroeker](#) on Mon, 05 Nov 2012 21:02:16 GMT

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First off - please wait for a better answer from Paul ("stop4stuff") or another senior member - I am still pretty new here and new to 3d printing. That said, the 0.35mm areas are almost certainly the problem. They will be a "wall" during some phases of the printing, even if they have no structural importance in the finished model, and also some poor guy at shapeways is supposed to clean these areas from sticky powder after printing without damaging the walls. Judging from threads such as #54611 "Inconsistent acceptance/rejection" in the 3d design forum (sorry, can't see how to link to that here), you might get away with simply making the recessed areas shallower, so that there is less of the too-thin wall standing out. Eliminating them completely should take care of the problem for good, if you can accept a less detailed model. (I have seen mention here that you can email service directly with your changed model to ask for a recheck without ordering a print, but personally I would feel bad about doing this unless I was really desperate)

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Subject: Re: Will it print or not?

Posted by [zero\\_hour](#) on Tue, 06 Nov 2012 05:20:43 GMT

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I've thickened up some stuff and made various nooks and crannies as shallow as I can. Hopefully it will be acceptable now, and when I order it in the future.

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Subject: Re: Will it print or not?

Posted by [stop4stuff](#) on Tue, 06 Nov 2012 08:21:02 GMT

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IMO, It is most certain that the area circled in yellow was missed first time around, unless the model was printed in Frosted Ultra Detail which does allow thin walls down to 0,3mm - the indents in the leading/trailing edges of the beams create a small bar that has 0,35mm thickness on 2 sides - more than enough to qualify that area as a wall.

As it happens I got a rejection message yesterday - Step Twin - stepped edge D6 in White Strong & Flexible, Reason: Bad file, Additional information: Multiple shells and bad file - which I find absurd as the model has been printed in steel many times and used to be featured in the previous steel guidelines pages as an example of a model that's difficult to print in steel due to thin walls.

Paul

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### File Attachments

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1) [Shapeways\\_Problem\\_01.JPG](#), downloaded 160 times

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Subject: Re: Will it print or not?

Posted by [natalia](#) on Wed, 07 Nov 2012 15:36:03 GMT

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Ki-ryn, if you re-uploaded a fixed model, it will be checked again before you order it. You can always directly email [service@shapeways.com](mailto:service@shapeways.com) for details on why your model may or may not print, especially if you are switching materials.

You do also have some very sound advice here from Paul and others in this thread!

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Subject: Re: Will it print or not?

Posted by [zero\\_hour](#) on Wed, 07 Nov 2012 16:51:19 GMT

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I imagine that the first model was checked the first time it was successfully printed, and the second time it was successfully printed. It was the third time that it was checked that the whole process burned down, fell over, then sank into the swamp.

It seems that it would serve everyone better if you instead did a single, thorough check the first time and then made a note that the particular model had passed (or not) so that you didn't have recheck it every time in the future. I'm looking at ordering 40-50 of this one model and I can't imagine you'll check that same STL file 50 times, passing it some times and not others.

I just want some consistency and reliability - the same things my customers are expecting from me.

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Subject: Re: Will it print or not?

Posted by [stop4stuff](#) on Wed, 07 Nov 2012 17:18:59 GMT

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The consistency is there. However the consistency is based on the printability of the material that the model was ordered in.

The model gets ordered in WSF, its checked, passes the checks and gets printed and should be printable every time in WSF.

The model is ordered in a different material, is checked and fails.

Why?

Because different materials have different specifications.



For example;

My Twin Rail Mobius, <http://shpws.me/lIBf>, is printable in plain Stainless but not printable in some of the finishes available for the same stainless model. Even though the same model complies with all of the criteria for Silver, it is not printable in Silver because the wax print for the investment cast is too fragile at that size, however a 2/3 sized version is fine - <http://shpws.me/lmCq>

With all of the leeway that Shapeways give us, sometimes we find the limits and Shapeways' answer is no. Perseverance and testing is the key to ensure that a model is available for printing in a certain material.

Paul

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Subject: Re: Will it print or not?

Posted by [aeron203](#) on Wed, 07 Nov 2012 18:29:35 GMT

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To clarify, I don't think Paul is saying you need to print every model in every material, just that through testing your designs you will gain the experience to make sensible judgements for different designs and materials. There are great tips in the materials section and throughout the forums here, but generalizing with a single value that applies to all cases is virtually impossible.

The best recommendation I can make is to use a healthy margin over every "minimum" if you believe you are taking a chance on a particular feature. You would not want a 1,000 pound weight hanging over your head from a rope that is predicted to yield at 1,001 pounds because the stakes are too high. You take that type of chance when you offer a design that skirts the rules (like your 0.35mm wall), and offer it up for public sale.

Since you specialize in one type of design, it should not take too long to get the hang of what gets good results. Feel free to submit your designs to the "Work In Progress" section for feedback before publishing them.

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Subject: Re: Will it print or not?

Posted by [zero\\_hour](#) on Wed, 07 Nov 2012 19:54:12 GMT

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stop4stuff wrote on Wed, 07 November 2012 17:18

The model gets ordered in WSF, its checked, passes the checks and gets printed and should be printable every time in WSF.

I ordered and received my model in Black Detail. It looks great, all parts are nice and strong. No issues other than I had to dig some grunge out of the holes. A customer ordered and received the same thing (as far as I know).

Then I ordered a White/Strong/Flexible version of the same model and was told it was unprintable.

By what you are saying, I can still order all of the Black Detail I want without fear of rejection? I'm ok with that (as I don't think it will look good in WSF anyway). If this is Shapeway's official policy, then my problem is solved. If however, that WSF failure means that Black Detail version is not available 100% of the time, then I still have a problem.

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Subject: Re: Will it print or not?  
Posted by [stop4stuff](#) on Wed, 07 Nov 2012 20:01:26 GMT  
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You got it spot on

Paul

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