
Subject: Does the Processing for WSF remove material?

Posted by [tebee](#) on Sun, 06 Mar 2011 03:59:22 GMT

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I know part of the processing for WSF involves sandblasting. Does this result in a certain amount of material being removed?

I ask as I've just received some models in which I used a small section - 0.95x0.70 mm. Now my previous tests suggested this would be strong enough to support what I wanted, but when the model was received it was a little too flexible.

On checking I found the section was considerably smaller than what I had designed - by about 0.10-0.25 mm which is quite a bit on such a small section.

So is some material lost? do I need to make an allowance for it in my design?

Subject: Re: Does the Processing for WSF remove material?

Posted by [GWMT](#) on Mon, 14 Mar 2011 00:40:27 GMT

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Hi tebee;

I haven't found any variance in thickness like that (yet). Can you post an image showing the section and what it attaches to at each end?

I wonder if the print orientation had something to do with it. Round shapes tend to be more oval in shape if their center axis runs perpendicular to the print orientation; the same thing can probably happen to small rectangular shapes too.

Subject: Re: Does the Processing for WSF remove material?

Posted by [pete](#) on Mon, 14 Mar 2011 01:51:43 GMT

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The blasting should not remove that much material! We will check into it!

Subject: Re: Does the Processing for WSF remove material?

Posted by [tebee](#) on Wed, 16 Mar 2011 15:08:34 GMT

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I've been busy with other things so excuse the delay getting back to on this .

As I didn't get a reply on here at first I also contacted service@shapeways . Their reply was that there is a print tolerance of 0.4mm, we can't print this accurate.

Now I can't find that figure on the site, so I'm not sure exactly what it means, as I can see how this then lets you have a minimum detail of 0.2mm.

It's also implies that it would be impossible to print anything of a mechanical nature without a very slack fit - if both parts can be up to 0.4mm out in size, possible in opposite directions, and you need a working clearance of say 0.2mm it means you would have to design two parts working together with a design clearance of 1.0mm with the possibility this might end up as 1.8mm!

Subject: Re: Does the Processing for WSF remove material?

Posted by [RalphVdB](#) on Wed, 16 Mar 2011 15:36:37 GMT

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Hi Tebee,

Let me try to explain it to you.

First of: tolerances and minimum details are two different things. Please have a look at this tutorial explaining it:

http://www.shapeways.com/tutorials/design_rules_for_3d_printing

Here you can also read that deviation in White Strong and Flexible can be 0.2mm. As a wall has two sizes this can be up to a maximum of 2* 0.2mm which is 0.4mm

Does this clear things up for you?

Cheers, Ralph

Subject: Re: Does the Processing for WSF remove material?

Posted by [GWMT](#) on Wed, 16 Mar 2011 21:27:04 GMT

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Hi tebee;

Regarding fitting printed parts together: I've done one model so far that has parts designed to fit into other printed parts. I designed them with zero clearance and it worked out very well.

The center sill (shown in outline here) fits flush into the car body at the points circled in green. When I first fit the parts together they were very, very tight. I had to completely clean out the pockets on the side of the car body with an X-acto #11 knife blade and a file (3 or 4 short passes) to get the center sill to press into place. However the WSF material compresses under pressure (think of it as similar to bead styrofoam packing material) and the parts fit together with a little slop (0.2 to 0.3mm) now that I've removed and replaced the center sill 4 or 5 times.

File Attachments

1) [ONR 4500 HO underbody detail markup.jpg](#), downloaded 143 times
