Subject: Steel Ring - Vizor (defying the Stainless Steel rules)
Posted by cooldjez on Sat, 24 Oct 2009 13:09:52 GMT
View Forum Message <> Reply to Message

Next to the fact that I like this ring very much myself (it is based on one of my older designs in silver), the biggest thing with this design is that the three rings that make up the design are only 1mm thick and have a depth of 2mm (the tube on the front has a diameter of 1.5mm). That said the ring still feels very sturdy.

I know that this defies the 3mm wall thickness rule for Stainless Steel, but I feel that this has to do with the way the ring is shaped.

At the back, the ring has a solid part that is 2.75mm x 2mm. This probably gives the printer a solid platform to start from, so that the thinner parts at the top/front can be supported.

http://www.shapeways.com/model/44696/ring___vizor.html

File Attachments
1) Vizor1FL.jpg, downloaded 1048 times
2) Vizor2FL.jpg, downloaded 1048 times

Subject: Re: Steel Ring - Vizor (defying the Stainless Steel rules)
Posted by dadrummond on Tue, 27 Oct 2009 15:52:00 GMT
View Forum Message <> Reply to Message

I think you're within initial specifications for steel. The 3mm wall-thickness limit only applies to "medium or large parts", whereas this ring is a small part (<50x50mm). Steel has higher resolution than WSF and is stronger, so presumably the minimum wall thickness is comparable for small parts, ~0.7mm.

Nice looking ring!

Subject: Re: Steel Ring - Vizor (defying the Stainless Steel rules)

Posted by cooldjez on Tue, 27 Oct 2009 19:36:27 GMT
View Forum Message <> Reply to Message

Well it is still a bit of trial and error. My ring Gear for instance falls within the small parts definition and size, but it was unprintable.

http://www.shapeways.com/model/43763/gear.html

Subject: Re: Steel Ring - Vizor (defying the Stainless Steel rules)
Posted by Schaeffer on Sat, 08 May 2010 04:55:44 GMT
View Forum Message <> Reply to Message

Your ring doesn't defy the stainless rules.

On the stainless steel information page it states a 3mm wall thickness for large objects but small objects below 50x50x50 mm almost all print successfully with wall thickness below 1 mm although they aren't specific on a precise minimum wall thickness.

(also things can often be thinner than wall thickness, it needs wall thickness on the supporting parts, e.g. a spike on the nose of a unicorn may not need to be equal or above min wall thickness at all as it carries no mayor weight.)

Very nice design.
I just thought I'd reply, many people tend to miss the part about small objects and wall thickness on the information page. I missed it myself the first time I checked.

Cheers!

edit fixing typo's

Subject: Re: Steel Ring - Vizor (defying the Stainless Steel rules)
Posted by 4m3D on Mon, 10 May 2010 13:37:26 GMT
View Forum Message <> Reply to Message

Nice looking ring!

I was a bit confused by the wall thickness thing... I guess I need to go back and read the specs.

Thanks for all the clarifying info.

Todd
www.4m3d.com

Subject: Re: Steel Ring - Vizor (defying the Stainless Steel rules)
Posted by Schaeffer on Mon, 10 May 2010 14:59:46 GMT
View Forum Message <> Reply to Message

I think shapeways needs to read it too, I just saw the feature on the blog confirming the ring pushes the limits but it said the thing about small objects with walls of <1mm on the steel page when I joined in march haha.

I'm pretty sure of it as I made myself a sheet with mat info to hang next to the desk for reference when I joined.
Another reason I believe I'm correct is they seem to be testing my scorpion for 0,4 / 0,5 mm wall thickness when I compare the thickness test here with the information they gave me about what would break. It probably depends on the overal shape a lot.

Awesome that it got featured on the blog, maybe once I hit that tiny adjustment that will make it printable they will feature my scorpion too

My previous reply is missing something with the unicorn example. it also depends on where they can pick up the model I think. If the unicorn horn wont receive too much force like fingers grasping it during moving it can be quite thin.
I'm not 100% sure on all this of course and it still needs to withstand cleaning/brushing.

I'm new here and am well sort of analyzing and studying the whole deal, trying to wrap my head around making stuff that need to work in production and not just purdy renders
But this is how I understand it from my many mails about failure and advise on my scorpion model, the info sheets and giving the evaluation version of magics rp a try, they use it too when they test your model.

Gratz on making the blog and cheers!