Subject: Is shapesway charging for empty space?
Posted by Steps2light on Fri, 07 Dec 2012 20:36:58 GMT
View Forum Message <> Reply to Message

I am designing a tube and according to Shapeways it is 30.4W x 11.6D x 11.6H = 333cm(cubed).

The thickness of the tube is 2mm.

So this tube is hollow which would give me a Volume of 14.5cm(cubed).

Shapeways estimate: $8 x 333 = $2664

My estimate: $8 x 14.5 = $166

For stainless steel at $8 this is quite a difference.

Seems your equations are based on outside parameter only? Is this automated computer error or is this just how the 3D printing machine works?

Why is the price for a solid tube the same for a hollow tube???

Shouldn't you be charged by material used not for air space? I am using less material so doesn't the 3D printer finish quicker? OR does it not matter with the 3D printer because is takes the same amount of time to create a hollow or solid object?

Also I am being charged by the widest dimension which is 11.6D...my part only has the Diameter for 20% of the part....the rest of the part is at 6cm D. So the volume of the part is charged not by actual material but the outer most dimension?

or am I not creating the object correctly for the computer to pick up the hollow shape?

Just would like to know how the machine works so I can create with it. But at this juncture this makes my project undo-able otherwise I would be ordering 10 right now.

Thanks

Subject: Re: Is shapesway charging for empty space?
Posted by Youknowwho4eva on Fri, 07 Dec 2012 20:42:56 GMT
View Forum Message <> Reply to Message

You are only charged for material used in stainless. Same for all other materials except ceramic

where you are charged for surface area. If you could share the model so we can look to see if there is an issue with you model.

Subject: Re: Is shapesway charging for empty space?
Posted by Steps2light on Fri, 07 Dec 2012 20:58:52 GMT
View Forum Message <> Reply to Message

Here ye go.

I have just been learning on AutoCAD for 2 weeks now. So what would I be missing?

File Attachments

1) wave pipe1.stl, downloaded 19 times

Subject: Re: Is shapesway charging for empty space?
Posted by Youknowwho4eva on Fri, 07 Dec 2012 21:19:31 GMT
View Forum Message <> Reply to Message

Can you make the item public so we can see it? What scale (inches, mm) did you design your item in, and what should the dimensions of it be?

Subject: Re: Is shapesway charging for empty space?
Posted by Steps2light on Fri, 07 Dec 2012 23:06:40 GMT
View Forum Message <> Reply to Message

The dimensions previously given are the correct ones...I designed it in AutoCAD 2012. Using Solid and Extruding Commands.

How do you make the object public?

File Attachments

1) wave pipe1.stl, downloaded 21 times

Subject: Re: Is shapesway charging for empty space?

Posted by psalmu on Fri, 07 Dec 2012 23:58:38 GMT
View Forum Message <> Reply to Message

Is your tube really a tube with open ends or a closed shell? From some earlier questions I seem to remember that if a hollow model has no "escape hole", the system treats it as solid.

Subject: Re: Is shapesway charging for empty space?
Posted by JACANT on Sat, 08 Dec 2012 00:14:46 GMT
View Forum Message <> Reply to Message

The sizes Shapeways give are correct. The wall thickness is about 2.5mm.
Have you checked the volume in AutoCad? It's on the 'INQUIRY' tab. If you cannot find it type in MEASUREGEOM pick 'V',volume, pick 'O', object.
You can measure the wall thickness in http://www.netfabb.com/basic.php It will also check, repair and scale your models.
To make it public go to edit product on your model page and click the box to 'display to the public'. Update. Exit Edit Mode.

Subject: Re: Is shapesway charging for empty space?
Posted by stonysmith on Sat, 08 Dec 2012 01:15:03 GMT
View Forum Message <> Reply to Message

There's nothing wrong with your STL.. it's just BIG.
How did you arrive at your estimate?
If you were to use a "regular" tube (straight sides) that is the average diameter of your model, then you would have a tube of 9.0cm on it's outer diameter.
With a wall thickness of 2.5mm, that gives you an inner diameter of 8.5cm.

Vtube =Vouter-Vinner
V=Pi * R^2 * H
Vouter=3.1415926 * 4.5*4.5 * 30 = 1908.518
Vinner=3.1415926 * 4.3*4.3 * 30 = 1702.351

Vtube=1908.518 - 1702.351 = 206.167

Your tube on the other hand, folds back on itself so it makes sense that it'd be 1/3 more volume.\.

Subject: Re: Is shapesway charging for empty space?

Posted by Fredd on Sat, 08 Dec 2012 02:23:14 GMT
View Forum Message <> Reply to Message

if your modelling dimensions are intended to be in cm.,.Its dimensions in Meshlab, nettfab, and blender were 11.974 x 4.571 x 4.571. Wall thickness was about a mm.. For the dimensions SW showed, everything got scaled by 2.5. Scaling is good, but it also effects wall thickness, thus material volume. Your discrepancy in Your volume, and Sw's was caused by this factor.
 For an experiment, model a openended cylinder of the dimensions you want, attach the file here. We will give advice on your workflow to get it ready to print at SW. include the dimensions you want in units.
(what your program displays.)
Keith

Subject: Re: Is shapesway charging for empty space?
Posted by Fredd on Sat, 08 Dec 2012 02:27:28 GMT
View Forum Message <> Reply to Message

Meshlab plus Netfabb displays volume also. I now have to recover from Stoneys math lesson,

---

Subject: Re: Is shapesway charging for empty space?
Posted by Steps2light on Sat, 08 Dec 2012 03:08:23 GMT
View Forum Message <> Reply to Message

Thanks for the MEASUREGEOM lesson.

My object came out to be 20" or 50cm in Volume.

So perhaps I am not saving it correctly in AutoCAD.

I had one suggestion of using FACETRES and STLOUT.

FACETRES did something about triangulating something so not sure if that is the command that disturbed my object.

IS there a better way to transform an object into an STL out of AutoCad?

Subject: Re: Is shapesway charging for empty space?
Posted by JACANT on Sat, 08 Dec 2012 14:27:18 GMT
View Forum Message <> Reply to Message

There are three commands you should use in Autocad to set up your drawing.
FACETRES set to 10. This smooths out your model especially curved objects.
ISOLINES set to 0. This hides all of the 'meshlines', so you can see the object better.
DISPSILH set to 1. This shows a 'silhouette' of the object in wire frame mode.
After each command type in REGEN to see the effect.
I would save this now as an DWT file 'Template' then each time you start a new drawing these values will be set.
There is only one way to get an STL file from AutoCad
File - Export - Export Data. You can only export solids or water tight meshes.
Make sure you are in WCS other wise the model will be on it's side.
Although it looks smooth in AutoCad you need to view it in Netfabb to see the real effect.
WYSIWYG in Netfabb.
The images show what the effects are.

File Attachments

1) AutoCad.png, downloaded 172 times

Subject: Re: Is shapesway charging for empty space?
Posted by Steps2light on Mon, 10 Dec 2012 05:34:58 GMT
View Forum Message <> Reply to Message

So I figured it out thanks for your guys help.

I did upload and make the drawing correct. I just did not know about cm's and how quickly they add up. Plus I underestimated what the process costs due to not knowing Volume.

So in CAD and netfabb my model is 20" and 333cm in volume.

Thanks