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Subject: Blender's solidify modifier

Posted by [HarryLister](#) on Tue, 04 Dec 2012 01:04:54 GMT

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Hi, I just did my first model in blender and submitted it. It was rejected at first and I took a wild guess that it needed thickness and was right, but I dont really know the actual thickness I applied. I applied the default settings for solidify which have thickness of .01 and O of -1.00. I know the -1.00 means the thickness is added toward the inside, but what exactly is .01?

I'm wondering if my model will be too thin, but dont know how to determine how thick it really is.

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Subject: Re: Blender's solidify modifier

Posted by [Fredd](#) on Tue, 04 Dec 2012 03:48:21 GMT

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A simple technique , depending on the printed size you want, is to go to Scene where you can set units, None, Metric, or Imperial. The scale factor is under the unit choice, if Metric is chosen, .01 scale will change a unit to cm. If .001 with change it to mm. If you chose Imperial, setting scale to .0254 will make a unit an inch. With Metric chosen and the model scaled to the size you want, Apply Ctrl A(apply scale, then you can input the value into solidify mod(1mm thickness for example.). Interesting enough if you chose inches as the other option, you can still type in 1mm as the value, which will give the wall 1mm thickness.(or any other thickness you want.

You can see the values in the N panel in inches, or cm for dimension value.

What makes this simple, select all of your mesh, export as a dae(Collada). When you upload your mesh, SW detects the scene data. So your model will be printed in the dimensions of your bounding box values in the N panel. A .dae is one of the formats SW recognizes scene data on upload.

To double check the thickness, you can turn on edge length in the N panel, and select an edge. Extra good stuff if you have the Measure panel addon, it can display volume in object mode, plus warn you if the model is nonmanifold. For all of the steps, remember if a model is scaled in object mode, use Apply scale(Ctrl A) after it done.

An STL format is totally different..Chris Lowe has a good tut on it.

Keith

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Subject: Re: Blender's solidify modifier

Posted by [HarryLister](#) on Tue, 04 Dec 2012 06:03:14 GMT  
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Thanks I'll soak that in for future reference. I dont know why though I'm not seeing units as a choice anywhere. I'm using 2.60 if that matters.

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Subject: Re: Blender's solidify modifier  
Posted by [Youknowwho4eva](#) on Tue, 04 Dec 2012 15:53:09 GMT  
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I know there is a way to set units, I just don't remember how that is. I just use the blender units as the unit I want to upload (usually inches) So I use the blender units, export stl or obj, and upload as inches.

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Subject: Re: Blender's solidify modifier  
Posted by [Fredd](#) on Tue, 04 Dec 2012 17:41:26 GMT  
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You set it in Scene. Should be to the right of the Camera icon in upper right corner of screen.

#### File Attachments

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1) [screen.png](#), downloaded 69 times

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Subject: Re: Blender's solidify modifier  
Posted by [HarryLister](#) on Tue, 04 Dec 2012 19:02:38 GMT  
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Geeezzzz, there it is clear as day. Thanks. I had it set to none and selected inches when I uploaded.

As for the model, it got cancelled for wall thickness..

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Subject: Re: Blender's solidify modifier  
Posted by [HarryLister](#) on Tue, 04 Dec 2012 21:45:56 GMT  
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Finally, it got accepted with the new thickness but now solidify adds thickness to the outside and the price jumped 80%.

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Subject: Re: Blender's solidify modifier  
Posted by [Fredd](#) on Tue, 04 Dec 2012 23:17:29 GMT  
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Lol, I think the thickness was .234 mm. Experiments are a pain. Volume(price) does have a tendency to increase exponentially when thickness is increased.

Whenever I mention input a value while modelling , i.e. 1 mm , don't just type 1, type 1mm. The bounding box dimensions came in at 13.597 x 4.920 x 2.024 .

Your model does have some mesh problems near the tapered end. Remove doubles(54 removed. In edit vertex select, deselect all, then select nonmanifold. The problem area should be apparent near that end.

Keith

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Subject: Re: Blender's solidify modifier  
Posted by [HarryLister](#) on Wed, 05 Dec 2012 00:19:05 GMT  
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I think the tip end was starting to open up on itself. The thickness follows the curve I used and is making the sharp edge overlap. I wonder if I could apply thickness only to a certain region? If that is possible, then I can add thickness where it wont overlap and then bore holes.

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Subject: Re: Blender's solidify modifier  
Posted by [Fredd](#) on Wed, 05 Dec 2012 00:48:32 GMT  
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Okay, maybe select the basic mesh before you added the solidify modifier. Flip all its normals inward. Now apply the solidify modifier. Flipping the normals inward causes it to expand, instead of contracting when you add a positive value for thickness. Click exact in modifier. It contracting as it normally does could be causing the problem

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Subject: Re: Blender's solidify modifier  
Posted by [HarryLister](#) on Wed, 05 Dec 2012 06:09:45 GMT  
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I tried the normals trick and it didnt work. If I convert the basic shape to a mesh from the start, it turns solid but I cant get that to follow a bezier. Solid would allow me to use boolean to bore holes.

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Subject: Re: Blender's solidify modifier  
Posted by [HarryLister](#) on Wed, 05 Dec 2012 16:18:56 GMT  
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I got it solid. I took a screen shot of the version which used beziers and used that as background image. Then I went in converted to a mesh and extruded it in steps and used sizing and rotate and grab to match the background image. Now I can bore holes and remove material to get the cost down hopefully.

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Subject: Re: Blender's solidify modifier  
Posted by [HarryLister](#) on Wed, 05 Dec 2012 21:28:32 GMT  
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That didnt work any better. When I extruded, only the first shape was solid. I poked holes in the extrusions and they were hollow. No big deal I guess except it means more work to close it. I'm going to try duplicate on the solid shape to see if that helps.

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Subject: Re: Blender's solidify modifier  
Posted by [Fredd](#) on Wed, 05 Dec 2012 22:38:33 GMT  
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Here is an old technique that could work,  
<http://wiki.blender.org/index.php/Doc:2.4/Tutorials/Modeling/Surfaces/Skinning>. Duplicating the surface might possibly work. If you woudn't mind, do you have a blend file of the basic mesh before thickness was created, even the file using beziers, before turned to a mesh you could share?

If you can somehow create an interior mesh, use Boolean difference to bore holes from the outside to the hollow mesh

Keith

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Subject: Re: Blender's solidify modifier  
Posted by [HarryLister](#) on Thu, 06 Dec 2012 03:43:43 GMT  
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Interesting trick with the skinning. I have another shape that's very boat hullish and could use that.

For this one, I can get a surface and a mesh. The fun starts when I remove surface and then have to make faces over and over to close it up. The trailing edge has me concerned too because it comes to a knife edge and I'm thinking they could reject it for being less than minimum even though they didnt even mention that when they rejected the first..

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Subject: Re: Blender's solidify modifier  
Posted by [Fredd](#) on Thu, 06 Dec 2012 17:46:19 GMT  
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When I listed that link, I left out something really important. You can use the technique with closed surface loops(airplane wings for example, fuselages).

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Subject: Re: Blender's solidify modifier  
Posted by [HarryLister](#) on Thu, 06 Dec 2012 22:04:22 GMT  
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A wing is what I'm trying to make. I'll give the skinning a try and see if I can get a smoother shape.

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Subject: Re: Blender's solidify modifier  
Posted by [HarryLister](#) on Fri, 07 Dec 2012 07:46:28 GMT  
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I got a wing I can live with. It's a mesh now, so maybe I can use boolean to get more holes.

File Attachments

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1) [Awing.png](#), downloaded 71 times

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Subject: Re: Blender's solidify modifier  
Posted by [HarryLister](#) on Fri, 07 Dec 2012 22:15:10 GMT  
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The last attempt wont print because it gets too thin at the trailing edge of the wing and at the tip, so I used offset to try to get some thickness and I left the tip off. The price came down, but if they wont print it then whoopie.

They tell me the size needs a minimum thickness of 2.07 mm. I dont know how to use netfabb to check.

#### File Attachments

1) [7408leftspace.fabbproject](#), downloaded 49 times

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Subject: Re: Blender's solidify modifier  
Posted by [HarryLister](#) on Mon, 10 Dec 2012 02:41:44 GMT  
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I've done this model over about 100 times now. What I had to do was take the basic bezier(airfoil) and break it into a top and bottom. I noted the location of the control node vectors and used duplicate curve and then typed in the location of the key control nodes. The reason for the two curves was so I could open up the trailing edge and have it thick enough without the bottom trying to go through the top and yet have it thick enough. It seems right now, expensive but right.

There's so much I need to learn about modeling, but if this prints I'll be pretty pleased.

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Subject: Re: Blender's solidify modifier  
Posted by [Fredd](#) on Mon, 10 Dec 2012 17:53:06 GMT  
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Good deal Harry. It just takes time, and perseverance to improve, like anything else.

Keith

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