Subject: Hollow-bowl design closed in upon uploading
Posted by NZ-EzyE on Sun, 23 Dec 2012 13:25:50 GMT
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I'm at my wit's end after trying everything I can to figure out why my design gets closed in upon uploading. Does anyone have any ideas?

File Attachments

1) SphereV4ConnectedOpen.dae, downloaded 58 times

Subject: Re: Hollow-bowl design closed in upon uploading
Posted by AmLachDesigns on Sun, 23 Dec 2012 15:11:05 GMT
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Hi,

hopefully someone who knows what they are talking about will give you a better answer later, but in case it helps here's what I saw:

You have several shells which have no thickness. I.e. they create an area but not an enclosed volume. Examples are the inner rims of the lid (?) the pins in the hinge and the inner liner of the base (which possibly is surplus to requirements). Shapeways will see these as holes which need to be fixed and create extra mesh to do so. In the case of the hinge pins, the ends will be capped, in the case of the 'liner' the bowl will get a lid.

In order to get a print that works you need solid objects that, if they touch, overlap a bit. If they do not touch (like the pins in the hinge hopefully would not touch the sides of the hinge hole) then to create one object all of the meshes must be logically joined in your software.

It's possible also that some of your face normals are not aligned correctly.

To look at this I uploaded your file into Blender - unfortunately I do not know SketchUp at all so can't give you specifics. WHat you could try is up loading individual components (size may be an issue) to Shapeways and see if some work already and which do not.

Good luck

Subject: Re: Hollow-bowl design closed in upon uploading
Posted by stonysmith on Sun, 23 Dec 2012 15:26:37 GMT

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Several programs, including Sketchup, do a poor job of the Boolean Joins. They tend to leave the peices as separate shells.
Attached is a 'fixed' copy.

One note: if you want the surface of the bowl to be smoother than this, you're going to have to have MANY more facets to your sphere(s).

File Attachments

1) SphereV4ConnectedOpen1.stl, downloaded 56 times

Subject: Re: Hollow-bowl design closed in upon uploading
Posted by Fredd on Sun, 23 Dec 2012 23:02:05 GMT
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In Sketch up you can determine the directions the normals are pointing. If an entities face is white, the normal is pointing away from the materials surface. If it is blue, not gray(that is shading) will be pointing toward the material. You always want the surface(face) normals to point away from the material.

There are two ways to correct face normals in SU. If an entity(face) is blue, and you want it corrected, select the face, right click/reverse face.
If all of the face normals are pointing in the wrong direction, select an entity, reverse its' face, then click orient faces All face normals will have the same orientation.
For fun I attached a SU file with a model of box with a wall thickness. 6 faces(entities) have normals facing the wrong direction. It is your mission to find, and correct them. Something fun to practice with.

And all of your models entities that you can view rotating the model should be white. Especially if you use the outer shell function for components

File Attachments

1) Findthe badfacenormals.skp, downloaded 45 times

Subject: Re: Hollow-bowl design closed in upon uploading
Posted by NZ-EzyE on Sun, 23 Dec 2012 23:21:30 GMT
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stonysmith wrote on Sun, 23 December 2012 15:26Several programs, including Sketchup, do a

poor job of the Boolean Joins. They tend to leave the peices as separate shells.
Attached is a 'fixed' copy.

One note: if you want the surface of the bowl to be smoother than this, you're going to have to have MANY more facets to your sphere(s).

Thank you so much! It was so frustrating not being able to get it hollow. Just so I understand for future reference, is it the diagonal lines through the individual faces of the sphere that corrected it? (I'm completely new to this)

Subject: Re: Hollow-bowl design closed in upon uploading
Posted by NZ-EzyE on Sun, 23 Dec 2012 23:27:04 GMT
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Fredd wrote on Sun, 23 December 2012 23:02 In Sketch up you can determine the directions the normals are pointing. If an entities face is white, the normal is pointing away from the materials surface. If it is blue, not gray(that is shading) will be pointing toward the material. You always want the surface(face) normals to point away from the material.

There are two ways to correct face normals in SU. If an entity(face) is blue, and you want it corrected, select the face, right click/reverse face.
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And all of your models entities that you can view rotating the model should be white. Especially if you use the outer shell function for components

Thanks for the lesson Fredd! I had been wondering what the difference between white and blue faces was. I went through and reversed all the necessary faces after doing it with your cube, and uploaded it again to test it but that didn't seem to fix the problem. stonysmith's fixed version is perfect and is the design I will use, but I'll keep playing around with this until I can fix it myself too.

Subject: Re: Hollow-bowl design closed in upon uploading
Posted by Fredd on Mon, 24 Dec 2012 00:24:10 GMT
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Oh yes, learning proper techniques is the key. It is trial and error, till you get the workflow down pat.
Stoneys fixed mode shows proper mesh techniques, giving you a heads up on what the end result should look like. Its still up to you to apply what you learned.
Another tip hen you use the outer shell(Boolean join) the normals of both components need to be properly oriented when you apply outer shell. And for a model with a inner thickness(your bowl) component getting shelled with the bowls base, the bases outer surface needs to intersect the bowls outer surface, not the interior surface also. The base intersecting both surfaces can cause problems, as the base and hinges did. If you want, I can attach an example.

Keith

Subject: Re: Hollow-bowl design closed in upon uploading
Posted by NZ-EzyE on Mon, 24 Dec 2012 00:33:36 GMT
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I'd really appreciate an example if it's not too much trouble!

Subject: Re: Hollow-bowl design closed in upon uploading
Posted by JACANT on Mon, 24 Dec 2012 00:44:21 GMT
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I have deleted some of the faces on your model so you can see inside. So you know where you are going wrong. All of the lines and faces that are blue should not be there. The small vertical faces on both bowls are what Shapeways thinks are holes and fills them. Always delete any lines or faces you do not need. If you delete the wrong face, just redraw a line and a new face will be formed. There should be no extra lines across faces. If you leave them, you could be creating faces on top of faces. Which confuses Shapeways software even more because it does not know which is inside or outside. It shows up in Netfabb as blue and red diagonal lines when there are faces on top of each other.

File Attachments

1) sketchup.png, downloaded 100 times

Subject: Re: Hollow-bowl design closed in upon uploading
Posted by NZ-EzyE on Mon, 24 Dec 2012 02:32:38 GMT
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Thank you Jacant! Making the changes you pointed out fixed the problem!

Thank you all so much for your help, I've learned a lot!