Subject: Non-manifold
Posted by feilen on Sat, 16 Jan 2010 23:02:35 GMT
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Okay, I have a model here that I worked on for a few hours clearing up all the manifold errors that blender gave me. Hours later, after clearing it up, checking twice, and uploading, I get an error.

I think it would probably have to be something to do with normals(I made it automate the outwards) but I really have no idea.

Help? :/

## File Attachments

1) FEILEN.stl, downloaded 98 times
2) FEILEN.blend, downloaded 84 times

Subject: Re: Non-manifold
Posted by GHP on Sun, 17 Jan 2010 04:27:37 GMT
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The base of your figure had inverted normals. You probably received an e-mail from Shapeways about this.

I opened it in MeshLab (where the inverted faces show as black instead of grey), selected the base, moved it to another layer, inverted the normals for that layer, then flattened the layers into one again. I'm attaching the result. Selecting Ctrl-N in Edit mode in Blender to orient the normals outward would probably have worked also.

From the looks of it, I doubt that the whiskers and possibly some other details will be printable, however. For most materials, a minimum wall thickness of 1mm is recommended.

Subject: Re: Non-manifold
Posted by GHP on Sun, 17 Jan 2010 04:31:49 GMT
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The base of your figure had inverted normals. You probably received an e-mail from Shapeways

about this.

I opened it in MeshLab (where the inverted faces show as black instead of grey), selected the base, moved it to another layer, inverted the normals for that layer, then flattened the layers into one again. I'm attaching the result. Selecting Ctrl-N in Edit mode in Blender to orient the normals outward would probably have worked also.

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Subject: Re: Non-manifold
Posted by GHP on Sun, 17 Jan 2010 04:38:29 GMT
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Aaaggh! I thought I was attaching the updated file, but it doesn't seem to have worked. I'll try once more, but if it doesn't work, you can try one of the methods described above. (Sorry about the duplicate reply.)

## File Attachments

1) FEILENmodified.stl, downloaded 66 times

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Subject: Re: Non-manifold
Posted by feilen on Sun, 17 Jan 2010 07:48:49 GMT
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Thanks very much!

I tried to force normals out with blender, looks like I didn't catch one.

The base is actually just an extruded circle, so I really had no clue what I was doing there, thanks for fixing it!

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Subject: Re: Non-manifold
Posted by feilen on Sun, 17 Jan 2010 07:52:02 GMT
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Actually, the error I got was that it was non-manifold.

I get this error again with your modification...

Subject: Re: Non-manifold
Posted by feilen on Sun, 17 Jan 2010 17:01:19 GMT
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...And apparently my model has a volume of -42.9 cm^3

Subject: Re: Non-manifold
Posted by GHP on Mon, 18 Jan 2010 00:10:34 GMT
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Sorry - MeshLab thought the model was manifold. Blender did find non-manifold areas however. I think Blender (and Shapeways) may use less precision than MeshLab, so vertices that are very close get counted as duplicates. (When checking this in Blender, first select all vertices and remove doubles, preferably with the difference limit set to zero rather than the default of 0.001, then deselect all vertices before using "Select Non-Manifold", because it won't clear the current selection.)

I removed non-manifold vertices in Blender, then used the "Close Holes" feature in MeshLab to patch them, then the "Fill Holes" dialog in MeshLab to put "trivial" patches on several remaining small holes. Some of your whiskers got a bit shorter in the process, but otherwise I didn't see any problems, and Blender now thinks it is manifold.

I checked it in netfabb Studio Basic for flipped normals (which sometimes occur while patching holes), and it found none. It gives the volume as 42.9 cm3. I believe you have several overlapping meshes (or shells). Shapeways (and also netfabb, I think) computes the volumes of the shells separately, then sums them, without adjusting for the places where they overlap, so the computed volume may be quite a bit larger than the actual volume of the model (although your model is actually fairly large, by Shapeways standards).

I hope this helps.

## File Attachments

1) FEILENmodified3.stl, downloaded 27 times

Subject: Re: Non-manifold
Posted by feilen on Mon, 18 Jan 2010 06:01:02 GMT
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THANK YOU!
And I don't think the whiskers will be a problem.
I'm still new at this, hope I don't have to ask for help next time (as if)