Subject: Too many shells?
Posted by henryseg on Fri, 02 Sep 2011 02:17:30 GMT
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I often make designs which are easiest to make as a number of separate closed NURBS surfaces which overlap with each other. For example, something made out of sticks which meet each other at their endpoints is easy to make by drawing straight lines for the sticks, then using Rhino's "Pipe" command, which makes cylinders (with end caps) around the lines.

When I turn the surfaces into meshes, what I get is a bunch of overlapping meshes. Rhino sometimes fails when taking unions of the meshes, or the NURBS surfaces, so what I've been doing is leaving it to shapeways to figure out the overlaps. (And according to http://www.shapeways.com/blog/archives/515-Website-Update-Ne w-Volume-Calculation.html they are doing it sensibly.)

Sometimes however, I get a message from Shapeways along the lines of "too many shells". Does anyone know what this means? How many shells can we use?

Unless I'm doing something wrong with my normals or something, and I really have more shells than I think I do, it seems very inconsistent. I just had a model rejected which (as I understand it) has two shells. I've also had things printed with hundreds of shells. Does "too many shells" really mean "our boolean union algorithm gave up"?

Subject: Re: Too many shells?
Posted by stop4stuff on Fri, 02 Sep 2011 07:55:50 GMT
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Not sure about the too many shells issue, some of my chain maille stuff has over 1800 shells. I do get the error message is 'Calculation failed' when SW software gives up (i.e times-out after 30 minutes) though.

Have you tried using either NetFabb or NetFabb cloud to see what they report about your models?

Paul

Subject: Re: Too many shells?
Posted by henryseg on Fri, 02 Sep 2011 10:07:56 GMT
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Yes, it must be that "too many shells" is a catch-all error message. I had a look at it on netfabb, which wasn't happy with the file. I have a suspicion that it was my attempts at doing boolean unions to my parts that screwed up the mesh.

I ended up redoing the design with 12 shells. Netfabb is now happy, so hopefully also shapeways will be!

Subject: Re: Too many shells?
Posted by steeveesas on Fri, 13 Jan 2012 04:19:04 GMT
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I got the following error message:
"Calculation failed. This means that our Mesh Medic could not fix or merge your design. "
After emailing shapeways support they indicated my file had too many shells. I had close to 2,000 and my vertex count was around 475K with face count 510K.

After trying many different things and not wanting to rework my model I had an idea to reduce the number of vertices even though the number of shells would still be the same. So I decimated my model significantly and voila all of a sudden it uploaded, 2,000 shells and all. The vertex count was reduced to 250K and the face count was at 325K.

So maybe there is some combination of shells and face count where it gets too complicated? I am not sure, but I just wanted to post how I got my model to finally upload in case someone else wants to try the same solution. I used decimate with Blender but other programs have poly reduction capabilities too.