Subject: Just how flexible is WSF?
Posted by Tommy_2Tall on Mon, 17 Aug 2009 08:20:48 GMT
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Hi!

I know I could make some reference parts and place an order to answer this questions my self but I'm trying to get the guess-work out of my very first models.

If someone could share their experience with WSF that would be great.

How flexible/stiff is WSF plate with a thickness of 1mm, 2mm, 3mm, 4mm, 5mm, etc?

How flexible/stiff are cylinders/square bars with those same thicknesses/diameters?

At what width are they:

Flexible with no force applied (flexing of their own weight)
Flexible with slight force applied
Flexible with significant force applied
Unflexible and "woodlike"

Can we (the community) make some sort of "flexibility matrix" that rates various basic shapes on that scale to help newcomers with little knowledge about WSF?
(That would make the need for material reference models somewhat smaller)

The reason I'm asking is because I'm trying to design a "living hinge" along the long side of a (stiff) lid that is appr. 5*100mm in area and I have no idea if 1mm for the hinge area and 2-3 mm for the lid will work.

Another model I'm working on includes a square network of 1x1x10mm rods (square or subsurf'ed)..
Will that be strong/flexible enough to keep stuff inside a small confined box or will it break if I just poke it gently with my fingers?

How thin can you go designing a mesh/net wall, with regards to the "wall thickness" and "minimum detail"?
Will the net be counted as details as long as the frame around it is 1mm or more?

Subject: Re: Just how flexible is WSF?
Posted by Tommy_2Tall on Tue, 18 Aug 2009 07:06:13 GMT
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I must have been blind or something..
Completely missed the Tutorials page (http://www.shapeways.com/tutorials/) until yesterday and now I've found some answers, including a very good example of what happens when you make a bowl/sphere that only has 1mm wall thickness...
So 1mm seems to be too thin in most cases?

Some of my question remains though.. so pleeeease enlighten me!

Subject: Re: Just how flexible is WSF?
Posted by giorgio79 on Sun, 23 Jun 2013 13:25:07 GMT
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I would love to see an "Ask an Engineer" video on this!