Subject: dimensioning of sprues
Posted by pfeiffer stylez on Sat, 08 Oct 2011 13:16:41 GMT
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Like lots of other people, I have a couple of small models which became very expensive due to the new price structure.

I want offer them in groups of four and six turrets per file.

I use small "connectors" to create one big structure.
Those connectors should be easy to remove, but solid enough to avoid problems during the production.

Question:
Are my current connectors capable to ensure an unproblematic printing and cleaning ?

(btw, all pics are clickable thumbnails)

Subject: Re: dimensioning of sprues
Posted by stop4stuff on Sat, 08 Oct 2011 15:01:02 GMT
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You might have a rejection notice if the models are ordered in White Detail (1mm min walls)... and you might have a failed notice in FD or FUD as 0.3mm is very fragile & the turrets would probably seperate during handling or cleaning.

Subject: Re: dimensioning of sprues
Posted by pfeiffer stylez on Sun, 09 Oct 2011 10:36:46 GMT
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Mhh... since they're 1 mm deep, they should be conform with the minimum wall thickness rule for

WD.

But how thick (or, in this case, high) should the predetermined breaking points be to survive the production process ?

Subject: Re: dimensioning of sprues
Posted by stop4stuff on Sun, 09 Oct 2011 11:09:00 GMT
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1mm WD wall thickness applies to walls in all directions, your breaking blocks might be 1mm deep, but they're only 0.5mm tall, and 1mm in WD is more fragile than 1mm in FD or FUD.

For the break point, the best bet would be to email service@shapeways.com and ask for 'official' opinion.

Subject: Re: dimensioning of sprues
Posted by aeron203 on Sun, 09 Oct 2011 13:22:10 GMT
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I noticed your design is notched in the middle to make it easy to break away, but I think that might happen earlier than you want it to. Most sprues and stems I see have a thicker body and taper at the end. That way it will be easier to remove all of the unwanted material. I would not go below 1mm anywhere.

Picture your model swirling around in a cleaning bath or in a pile with dozens of other models on top. If the group breaks apart it could create a problem with the order, so it's worth the extra material to make sure it works.

Subject: Re: dimensioning of sprues
Posted by woody64 on Sun, 09 Oct 2011 15:29:16 GMT
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also I would not go beyond 1mm.
I have 1mm sprues for my models since more then a year and I can't remember

http://www.shapeways.com/model/352806/5_x_bearskin__test_.ht ml?gid=ugproblems.

Woody64

Subject: Re: dimensioning of sprues
Posted by pfeiffer stylez on Tue, 11 Oct 2011 07:14:34 GMT
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Thanks guys.
As first effort, I'll make predetermined breaking points thrice as tall as they are now.

Subject: Re: dimensioning of sprues
Posted by GWMT on Fri, 14 Oct 2011 20:22:16 GMT
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Try to make the surface area where the sprue merges into the model surface as small as you can. I've been successfully using a 1:1.5 or 1:2 ratio for length/width where 1=minimum wall thickness for the material.

Using an L-shaped profile for the sprue instead of a square or round shape will reduce the amount of material used in the sprue by 50% but will still give you the same stiffness as the larger shape. For short/ intermediate distances an angle shape of minimum material thickness that's 4 or 5 times as tall/wide as the minimum material thickness works well. Most of the sprues in this example (for FUD) are 1.2mm x 1.2mm angle 0.3mm thick.

I like to taper the sprue down towards the model surface or use a disc shape for the sprue to force the cutting blade against the model surface and reduce the amount of sprue left on the model after cutting. I also use flush-cutting tweezers like these examples from Micro-Mark and Intermountain:

http://www.michtoy.com/item-MCK-82393-Sprue_Cutter_Despruing _Tweezer.html

http://intermountain-railway.com/bandb.htm

They concentrate all cutting forces on where the sprue meets the model surface so the model can't twist and break as you're cutting it free. They're worth every penny spent.

File Attachments

1) CN Switchstand on sprue-detail.jpg, downloaded 249 times