
Subject: Color printing error

Posted by [steeveesas](#) on Sat, 12 Feb 2011 23:50:25 GMT

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I am trying to print something in full color sandstone with some textures mapped to it.

I am using Blender to do the UV mapping.

I can get the .wrl into mesh lab such that it shows the textures, but when I upload the same file to Shapeways (zipped of course with the images) the texture is not there. I will say that I have 2 separate closed objects that overlap. Could this be why the textures are not showing up in my 2D view?

I have gotten the texture to show up when I upload a file with just one object.

Subject: Re: Color printing error

Posted by [Kaetemi](#) on Sun, 13 Feb 2011 08:48:42 GMT

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You can only have 1 texture, and both meshes are required to be using the same material with the same texture assigned.

Subject: Re: Color printing error

Posted by [steeveesas](#) on Sun, 13 Feb 2011 18:53:40 GMT

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What do you mean you can only have one texture?

How are these models done? They look to have multiple textures:

http://www.shapeways.com/tutorials/exporting_to_vrml_and_x3d_for_color_printing

Also it says:

Shapeways only supports UV textures, no other texture projections.

You can only use bitmap textures (no 'procedural' shaders').

Texture files must be in JPG or PNG format.

You can use more than one texture map on your object, but the maps are not allowed to overlap â€” the printer cannot figure out which texture to print in that case. The last limitation is the resolution of your texture â€” we recommend you keep the total resolution of your texture maps below 2048x2048 pixels. For example, if you need 4 textures, keep them all below 1024x1024 pixels.

Is it the overlap, or can you really only have one texture?

Subject: Re: Color printing error
Posted by [Kaetemi](#) on Sun, 13 Feb 2011 19:47:00 GMT
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I don't know the exact state of multiple textures support, but if you have overlaps, you'll have to use only one texture as far as I know.

If you use multiple textures in a single connected mesh, your mesh will have multiple submaterials. Last time I tried, that wasn't supported.

Basically you need all your UV's in channel 1 with 1 single material that points to 1 single texture in UV channel space.

Subject: Re: Color printing error
Posted by [stannum](#) on Sun, 13 Feb 2011 20:58:39 GMT
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Each face, one image. Multiple disconnected meshes with multiple images, works. One single mesh with two images, works. Or maybe "worked, but not anymore", it was "works" some months ago for sure.

Subject: Re: Color printing error
Posted by [steeveesas](#) on Sun, 13 Feb 2011 21:01:15 GMT
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Hmmmm...I'll keep playing and let you guys know what I find out. Thanks for the input.

Subject: Re: Color printing error
Posted by [steeveesas](#) on Mon, 14 Feb 2011 00:40:03 GMT
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So this is strange.

I have spent a few hours this evening troubleshooting my problem. My model has 43 mesh objects. I have taken a stepped approach by creating VRML files which first exported just some of the objects with the materials applied. Things were working fine as I continued to add objects and upload them to shapeways. The colors were displaying correctly and I was wondering why when I uploaded my initial model it didn't work. Well as I continued adding all the objects shapeways began to confuse the materials and objects began having the wrong colors on them.

See the attached image.

In the first frame of the image things are fine. You can see I have my texture showing up on my model and also an orange material on the gloves, grey material on the arms and a red material on the glove bands.

In the next frame of the image things are still fine. I have just added shoes and legs and applied the materials.

In the next frame of the image things start going wrong. I added an eye and some spikes to the shoes. The spikes don't have a material applied. The eye had a blue material applied in blender but it shoes up as the orange material. Also now the legs and the shoe soles have become orange also.

In the next frame of the image I just added spikes (with no material applied) to the glove bands and now just about everything but the glove bands and arms are orange.

[Edit: added another frame to the image.]

In the next frame all I did from the previous frame was move the eye and the glove and foot spikes away from the rest of the model...and you can see the body now has the correct color again. But most of the items are still the wrong color. But the point is that the proximity of the objects seems to influence the color interpretation.

Can anyone explain why this is happening? Should I be doing something different in Blender to avoid this problem?

File Attachments

1) [ColorProblems.jpg](#), downloaded 114 times

Subject: Re: Color printing error

Posted by [stannum](#) on Mon, 14 Feb 2011 03:43:07 GMT

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Maybe the new unification process destroys UV coords and/or image references? Other people

have complained about missing parts or totally deformed zones, so maybe it has bugs. It would be nice to keep for the volume calculations, but booleans with meshes are like playing with matches in the munitions dump. Before things were printed fine without, so the printers probably don't care about united meshes.

Subject: Re: Color printing error
Posted by [kontor_apart](#) on Mon, 14 Feb 2011 08:48:00 GMT
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Try to union your meshes in your own software and you will possibly see the same behaviour. I would suspect issues with one of your meshes or texture maps which only surface with the boolean operation.

In our experience, Shapeways' unification/repair process will produce the same results as the union operator in other software.

If nothing else, your unified mesh will no longer need to be post-processed by Shapeways' repair ...

Subject: Re: Color printing error
Posted by [steveesas](#) on Tue, 15 Feb 2011 01:47:20 GMT
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Are you talking about a boolean union? I have always read to avoid boolean operations whenever possible. Additionally when I use it in Blender with my model I begin to get non-manifold errors. The boolean union doesn't result in a watertight mesh.

Subject: Re: Color printing error
Posted by [stannum](#) on Tue, 15 Feb 2011 03:44:43 GMT
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It sounds like that... basically, you are between sword and wall. Well, now everyone is with color material, as it reduces how you can model things or increases the computer resources and time to get it done.

New design rules better cover this, because new system makes design for color different from other materials where you just keep it watertight and it works. If anybody knows a software that does mesh booleans perfectly 99.99% of times, please say so, as most software has issues sooner and later.

Subject: Re: Color printing error
Posted by [steeveesas](#) on Tue, 15 Feb 2011 04:07:21 GMT
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Hmmm, very frustrating...color printing has such a cool appeal, but if it cannot be done easily or at all for some models, it is very dissapointing.

I will send this problem to service@shapeways to see what they say. In the meantime, can anyone figure out a cloogey way to get around the problem and make it work?

Subject: Re: Color printing error
Posted by [dizingof](#) on Tue, 15 Feb 2011 05:01:50 GMT
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try my workaround here:

<http://www.shapeways.com/forum/index.php?t=msg&th=4551&start=0&>

Subject: Re: Color printing error
Posted by [steeveesas](#) on Tue, 15 Feb 2011 05:19:26 GMT
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Thanks dizingof.

This will take some time...I will try it tomorrow night after work. I'll let you know how it goes.

Subject: Re: Color printing error
Posted by [stop4stuff](#) on Tue, 15 Feb 2011 07:48:40 GMT
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Sorry this is a bit late in the day, I just found, Website Update: 'Multiple Shell Merge' and other fixes "... There's just one catch: it doesn't work for color (i.e.: VRML2) models yet, but we're working on that."

Subject: Re: Color printing error
Posted by [kontor_apart](#) on Tue, 15 Feb 2011 11:34:57 GMT
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Old news and superseded by a later post.

As far as I can tell, that meshmedic thing is basically an enhanced Netfabb repair followed by a boolean union. If you cannot clean your meshes to the point that the union works in your software, chances are high that the meshmedic process fails as well.

Subject: Re: Color printing error
Posted by [GHP](#) on Tue, 15 Feb 2011 12:50:35 GMT
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I've only done boolean unions in Blender, which typically produces messy results that need a lot of cleanup, and often fails to do anything (with my admittedly limited computing resources). This is with meshes that are manifold to begin with. Uploading color files would definitely be a lot easier (for newbies, at least) if we didn't have to worry about the results of a boolean union.

Since the union is apparently only needed in order to get a correct volume calculation, couldn't Shapeways do it just for this purpose (ignoring the UV maps), and keep the original mesh (or repaired mesh, if the original isn't manifold) for printing?

Subject: Re: Color printing error
Posted by [bartv](#) on Tue, 15 Feb 2011 13:54:44 GMT
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Hi steeveesas,

I analysed your model and I believe that you're the first to run into a limitation of our renderer: we're currently limited to displaying 16 different materials on an object. During VRML importing, our (Blender) script collects the separate parts and joins them together.

I believe that during the collection of separate parts, it will create new materials for each one - even if they are the same as previously defined materials. The later version of your model (with the spikes) has 43 separate objects.

Could you mail me the original .blend file so I can run a few tests on that and verify my theory? I'll try to pre-join similar parts in Blender before exporting them (like joining the arm parts together, and join the shoe parts together). I'll make sure I don't have more than 16 parts, and check if the upload succeeds in this case.

This is a bit of a kludge, I know. The renderer is on our todo list, so I'll add a note about this problem.

Bart

Subject: Re: Color printing error
Posted by [dizingof](#) on Tue, 15 Feb 2011 14:07:02 GMT
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The workaround i've suggested above works well - it took me too many hours to dig out this solution.

I just uploaded test #3 another full color test model with accurate intact textures.

The best solution so far that i came up during all the "research" that i've been doing lately with full color printing, exporting/importing back and forth using many 3d software tools and which unfortunately shapeways software doesn't recognize - is a very cool utility which was written by an Italian student that basically "bakes" the textures into the model.

The end result is a single wrl file with NO textures.
Meaning.. no textures/parts mess which is perfect for every one not just newbies.

Again unfortunately only Cortona3D viewer for Firefox can display this file... other tools including meshlab 1.3.0b don't.

But beside all that... shapeways has ignored too many requests on the forum by practically

anyone about that wax coating that kills the white color and subsequently dims all other colors.

I sent another color model to print with a request to CS not to coat it with wax - hopefully it will arrive with vivid colors.

I will coat it myself with a simple clear epoxy quick-dry spray.

This worked great before.

I will share results when it arrive.

Subject: Re: Color printing error
Posted by [steeveesas](#) on Tue, 15 Feb 2011 14:16:19 GMT
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Thanks bartv...I'll send you the file. Do you want to private message me your email?

I will also try to join the parts of my model which have the same materials to see if that works like you suggested.

Expect the file later on tonight, I don't have access to the file at the moment.

I appreciate the help.

Steve

Subject: Re: Color printing error
Posted by [bartv](#) on Tue, 15 Feb 2011 14:26:46 GMT
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@steeveesas: You can mail it to bart@shapeways.com. That's hardly a secret address

@dizingof: our production team is aware of the issues with the infusion. It's difficult to control. The thing is though, if we *don't* infuse the models they're a lot more brittle and will sometimes not survive shipping..

Bart

Subject: Re: Color printing error
Posted by [steeveesas](#) on Wed, 16 Feb 2011 00:35:28 GMT
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SUCCESS!

First color print for me...and very satisfied with the results. This was just a trial, and I was dissapointed at first when following the directions things weren't working out and it seemed hopeless without tons of work.

bartv - you are a man that knows his software! I bet it's like you said. I did what you suggested and joined the parts that were going to share the same materials anyhow. Once I did that things uploaded perfectly!

So now I know how to go back and color some of my other models.

Here are a few pics of the uploads I did with a few color variants.

@bartv: do you still want me to send you my .blend file? I will do so if you like, but if you are satisfied based on this post then there's no reason...

Does this mean that for color printing 17 objects (16 joins) is the max before colors become mixed?

File Attachments

1) [Shadows.jpg](#), downloaded 110 times
