Subject: Full Color Sandstone test prints
Posted by Kaetemi on Tue, 22 Nov 2011 19:44:05 GMT
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Let's start out with a comparison of the new Shapeways Full Color Sandstone with the old variation, and a similar product from a different vendor.

Can you guess which one is which?
On the left we have the old FCS, in the center are prints from another company, and on the right is the new FCS.
Please note that for some reason the new FCS color palettes were printed sideways, which is why you see more printing lines there.

Old FCS:
+ Pro: Good black, good strength
- Con: Poor white, dark colors, sometimes blurred colors, sensitive surface
Other vendor:
+ Pro: Good white, strong surface
- Con: Poor black, inconsistently applied gloss-y surface coating
New FCS:
+ Pro: Good white and black, brightly vivid colors, strong surface
- Con: Poor surface finish in a specific case

Check out that contrast!

The new FCS is lying on top, if you didn't notice from the great quality.

Now, the only killing issue that occurred in this specific test. The surface which, I assume, was resting on the table, while the print was drying from it's finishing process, has random blobs of stuff and other dust on it. This is something you should take into account, as a designer, as it's not possible to have it floating around to dry. It seems to be an issue only when your resting area is large and flat, if you put an extruded border on the plane it will not be a noticeable issue.

Here follows, uncensored, all detailed pictures from the entire test range with relevant comments where needed.

The stuff clearly visible above.
Below, same item, other side, no issue of course.

(Splitting across posts due to image count limit.)

Subject: Re: Full Color Sandstone test prints
Posted by Kaetemi on Tue, 22 Nov 2011 19:46:18 GMT
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And some other panels, each time front/back. High resolution linked.

Next post will be a series of pictures of the set of items that will be tortured (yes, there's more), then a series of organic shapes (some nsfw included too, because we can).

Subject: Re: Full Color Sandstone test prints
Posted by Kaetemi on Tue, 22 Nov 2011 20:00:43 GMT
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More pictures!
Another comparison, I'm sure you can guess which one is the new FCS.

And yes, of course, you can get a good amount of detail in!

(Splitting posts due to image count limit.)

Subject: Re: Full Color Sandstone test prints
Posted by Kaetemi on Tue, 22 Nov 2011 20:07:50 GMT
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Following items will be tortured (strength, water, fire, etc) and experimented (polishing, etc) on, videos of that will be available soon!

In the one below, you can clearly see aliasing occurring when your textures are way too large for them to handle.

Did I mention bright colors yet?

Subject: Re: Full Color Sandstone test prints
Posted by Kaetemi on Tue, 22 Nov 2011 20:09:33 GMT
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The pictures don't lie.

Exactly.

Subject: Re: Full Color Sandstone test prints
Posted by Kaetemi on Tue, 22 Nov 2011 20:16:40 GMT
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And now for some organic shapes.

Another keychain again! This one will be tested as well to see how long they hold out in normal usage.

The one I had in old FCS ended up like this after long use and many random experiments.

Glossy hair, indeed.

Subject: Re: Full Color Sandstone test prints
Posted by Kaetemi on Tue, 22 Nov 2011 20:41:45 GMT
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This post may be NSFW.

Two prints, were in a different orientation in the file, but the print operator went ahead and printed them both in the same orientation.

Toggle Spoiler
So, anyways, one of the prints has these nasty blobs on it as well for some reason, the other one is perfectly fine. Probably some of the processing stuff landed on it during drying, I assume.

Also notice the odd dark layer that sometimes tends to show up across a print.

No issue with the second one, as you can see

Layers are actually not too visible, but the item does feel very rough. Will do something about that, though, in a later post!

Layers may be more visible depending on your point of view, though. Bottom or top inside the printer makes a difference too, but not much you can control about that, right.

Subtle color variations are showing up really nicely, compared to the old FCS.

Subject: Re: Full Color Sandstone test prints
Posted by Kaetemi on Thu, 24 Nov 2011 15:42:55 GMT
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First test, comparing how well suited the different variations of Dremel's abrasive buffs are for polishing.

This was tested using the Dremel SpeedClic 511S and 512S accessories.

(video will be attached later)

As you can see, the 511S ones easily grind their way trough the item, while the 512S remains nicely on the surface without doing any serious damage to details.

On the old Full Color Sandstone, it was possible to get a rather shiny result using the fine version, this seems not much different on the new FCS. It is slightly more difficult to get a shiny looking surface, though, as this was likely caused by the wax being spread out as well.

Using the 512S (320 grid) you can easily get rid of the harsh layering, and unpleasant surface feel, while still keeping the roughness, and not losing any detail.

While you can still notice the layers, they're less pronounced than before, if you compare with the previous pictures. The surface also feels a lot softer than it was originally. This is sufficient in most cases.

(video of polishing will be added later)

The keychain has been given to a test subject to see how long it holds out in normal usage.

Also some NSFW comparisons below.

Toggle Spoiler
Polished using 512S on the left, original on the right.

As you can see, again, less harsh layering lines, but still a good amount of roughness there. It does give a nice, and natural, effect for the skin surface.

Below is one I gave an extra coating with some matte varnish, after polishing. I don't really like that look, though, shows kind of cheap. Some more different coatings will be tried out as well.

(video of this one will also be placed here later)

Next post will contain torture and destruction videos!

Subject: Re: Full Color Sandstone test prints
Posted by dizingof on Thu, 24 Nov 2011 20:25:52 GMT
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Great Thread !

I like spray coatings - it keeps the models tough and long lasting.
These bunch of guys survived countless curious hands.. i recommend it.

File Attachments
1) PICT0024.JPG, downloaded 3085 times

Subject: Re: Full Color Sandstone test prints
Posted by Kaetemi on Thu, 24 Nov 2011 20:36:04 GMT
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I'd like to find a reliable way to make the surface look less "sparkly" (as shows in your picture), it looks too much as an afterthought. I'll probably look around for something that fills in the holes of the roughness without showing up too obviously as being a separate layer. There are a few things I have in mind for that, just need to check for some additional alternatives before I blow my budget on more useless things.

Subject: Re: Full Color Sandstone test prints

Posted by dizingof on Thu, 24 Nov 2011 20:41:52 GMT
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Actually its "sparkly" because i used flash on my camera, its more or less like this on regular lighting

File Attachments

1) PICT0002.JPG, downloaded 3044 times

Subject: Re: Full Color Sandstone test prints
Posted by Kaetemi on Thu, 24 Nov 2011 21:02:34 GMT
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With the sparkly I mostly refer to the excessive spark that shows from putting gloss on a rough surface, which is an issue depending on lighting conditions, indeed. The problem is that this accentuates the layering even more, which the customer doesn't really like.

Keeping a rough surface like this, looks better with a soft finish than a gloss/matte varnish finish.

To make the gloss/matte coating finish look good, the roughness should be filled in with something before, so that it looks more consistent, and less cheaply handled.

I know it's possible to get a perfectly smooth glossy finish by doing:
- Polish the FCS to get rid of grain
- Apply a generous amount of CA
- Polish the CA layer as well, getting back close to the surface
- (And perhaps add an additional varnish coating, have not tried that yet)

But the CA is a bit unhandy, so I'd like to find an alternative that suits the needs more easily.

Subject: Re: Full Color Sandstone test prints
Posted by dizingof on Thu, 24 Nov 2011 21:18:12 GMT
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I agree.

That other 3d service told me they did a delicate polishing on my model:

But i still added some varnish of my own

and it is VERY SMOOTH to touch.

Subject: Re: Full Color Sandstone test prints
Posted by AD-Edge on Mon, 28 Nov 2011 04:10:33 GMT
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Interesting results.

Thanks for posting, will be a good future reference.

Subject: Re: Full Color Sandstone test prints
Posted by Kaetemi on Sat, 31 Dec 2011 10:40:27 GMT
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The new video with the hammer:
http://www.youtube.com/watch?v=xZnLFG6llMA

And one with the Dremel abrasive buffs for smoothing:
http://www.youtube.com/watch?v=e2UCoie1bSE

Also, I can confirm that the mini-figure keychain has not broken yet after a month of normal usage by my test subject.

It's also relatively waterproof, the colors stay just fine after being thrown into the water for a minute (although the strength may go down a bit while it's wet, I have to test that again).

Subject: Re: Full Color Sandstone test prints
Posted by stannum on Sat, 31 Dec 2011 20:44:35 GMT
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This is becoming confusing now. (As mentioned in other thread) check the material page and they show a picture of really faded blue (sky blue becomes dirty white), saying that water attacks the ink... but no info if that was before or after the CA, or if the water bath was some seconds or a full day.

Subject: Re: Full Color Sandstone test prints
Posted by Kaetemi on Mon, 02 Jan 2012 09:54:05 GMT
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With the old FCS it became white due to the wax on the surface and the water reacting poorly, but you could remove that white by applying heat. I didn't see such thing happening with the new FCS.
Video here http://youtu.be/QB5CZ7A-0_w, nothing happens.
Perhaps I should try with a darker object.

Subject: Re: Full Color Sandstone test prints
Posted by Kaetemi on Sun, 05 Feb 2012 16:29:26 GMT
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2 layers of primer + 2 layers of alkyd based varnish

dremel polish + 4 layers of primer + 7 layers of acryl based varnish

Subject: Re: Full Color Sandstone test prints
Posted by Kaetemi on Sun, 05 Feb 2012 21:26:43 GMT
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dremel polish + 4 layers of primer + 8 layers of acryl based varnish + 1 layer of matte alkyd based varnish

PERFECT.
better picture tomorrow.

Subject: Re: Full Color Sandstone test prints
Posted by stannum on Sun, 05 Feb 2012 22:45:28 GMT
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What "primer"? Most of them are opaque.

Subject: Re: Full Color Sandstone test prints
Posted by Kaetemi on Sun, 05 Feb 2012 22:52:52 GMT
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Subject: Re: Full Color Sandstone test prints
Posted by Kaetemi on Mon, 06 Feb 2012 13:36:00 GMT
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Better picture.

The noise in the color is caused by printing quality issues, and would probably not show up on a properly printed model.

The roughly exact procedure that was followed on this test piece is as follows:

Day 1:
Polish using Dremel 512S fine abrasive buff; model will feel soft rather than sandy after this
Spray with Motip Plastic Primer, everytime just two quick sprays on front, back, left, right, top, bottom; it'll look wet for a few seconds; not visible afterwards
Wait 1 hour

Spray with primer again
Wait 1 hour
Polish using Dremel again (can probably be skipped, makes no difference).
Spray with primer again
Wait 1 hour
Spray with primer again; you'll still see nothing of the primer afterwards

Day 2:
Spray #1 with Motip Clear Varnish ACRYL
Wait 1-2 hours; you won't see anything of the varnish.
Spray #2
Wait 1-2 hours; you might see some small glittery sparkles
Spray #3
Wait 4-5 hours; the surface will be slightly sparkly now
Spray #4; surface will start showing rough gloss

Day 3:
Spray #5
Wait 4-5 hours; the surface will look like glossy cloth
Spray #6
Wait 1-2 hours; the surface will look glossy, but the stepping of false flat surfaces is clearly visible
Spray #7
Wait 4-5 hours; the surface will look glossy, the stepping will show trough slightly wobbly
Spray #8
Wait 4-5 hours; the surface will look excessively glossy, stepping is nearly unnoticable
Spray with Motip Matte ALKYD Varnish; the surface will immediately look matte, and will stay as it looks now.
Let dry for another 24 hours.

You might need less or more layers depending on your wait times and the print quality of the model.

Will try to reproduce this somewhere around next week maybe.

Subject: Re: Full Color Sandstone test prints
Posted by peterhguk on Mon, 06 Feb 2012 19:20:20 GMT
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It's all about preference, of course, but that glossy one looks great.

Subject: Re: Full Color Sandstone test prints
Posted by Gijs on Tue, 14 Feb 2012 07:35:29 GMT
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Great post and thanks for the detailed write up about the post processes that you tried. The glossy version looks fantastic, like glazed ceramics, although on this model a matte finish fits better I agree.
@shapeways: when will we finally be able to orient our work the way we want? I think it is the no1 wish for many.

Subject: Re: Full Color Sandstone test prints
Posted by stonysmith on Tue, 14 Feb 2012 16:50:53 GMT
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Gijs wrote on Tue, 14 February 2012 07:35
@shapeways: when will we finally be able to orient our work the way we want? I think it is the no1 wish for many.

If you feel strongly about this.. add votes to the uservoice entry
http://feedback.shapeways.com/forums/111989-shapeways-feedba
ck/suggestions/2543810-specify-print-orientation

Subject: Re: Full Color Sandstone test prints
Posted by Gijs on Tue, 14 Feb 2012 21:18:59 GMT
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Thanks for the pointer, added 3 votes. I cannot imagine there aren't more people that want this to happen, hopefully this catches the attention of more users

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Subject: Re: Full Color Sandstone test prints
Posted by akwhitacre on Thu, 10 May 2012 19:29:42 GMT
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Kaetemi, do you think this would work well for a model kept in water? I know "in water" is never ideal , but I'm making a snowglobe with a FCS model inside and hope to help the color last, at least for a little while.

Subject: Re: Full Color Sandstone test prints
Posted by shaperaf on Sat, 30 Mar 2013 11:46:28 GMT
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Hallo

I received some arenaria full color items and I really like roughness and finish. Is there anyone who succeeded to protect the color at water, keeping the original sandstone surface, rough and dull?

Thanks

Subject: Re: Full Color Sandstone test prints
Posted by Ray_Zhou on Thu, 22 Aug 2013 01:24:14 GMT
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Great efforts to do all the tests!