# Revisiting custom printing

## A comparison of custom-fabric houses

*by Kris Sazaki and Deb Cashatt*

Four years might as well be four generations in the tech world, so the *SAQA Journal* asked us to update our article on fabric-printing companies that appeared in the magazine's third issue of 2016. Artists are using their own designs in their artwork more than ever, so we also thought it was time to revisit the subject.

Before we begin with our updated guide to ordering fabric online, here are some interesting updates to the original article:

- *The number of printing companies keeps growing.* We were a bit surprised that of the six companies we had featured, only one (Modern Yardage) is no longer in business, but we were not surprised to find more to feature. We decided not to order from Décor Print as it had a three-yard minimum printing requirement.

- *SAQA paid for all the samples.* To best recreate the customer's ordering experience, we ordered all the fabric as real customers do.

- *We changed our test image.* We simplified the image elements that gauge color accuracy, how black prints, the clarity, and how texts print. The most important change was in the photo of people to test skin tones. We realized that our original photo was of a white girl with her hair obscured in water. What we needed was a variety of skin tones and hair colors, especially dark hair to see if we could discern individual hairs.

- *We don't print our own fabric anymore!* It was, in the end, not a difficult decision for two control freaks. The cost of dye and maintaining our
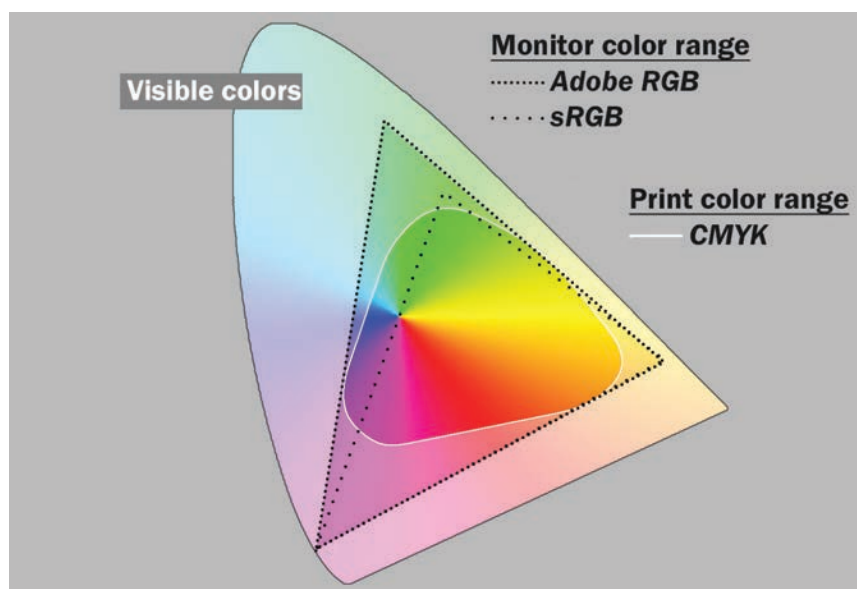


**This color gamut chart shows the approximate range of the monitor, print, and visible color ranges.**

own printer for the amount we print no longer justified the amount of control and immediate results we appreciated printing on our own. Also, the choice we now have in reliable and reasonably priced printing companies only confirmed that we made the right decision.

## Featured Companies

We are including eight companies in this article. Along with their designated abbreviations used in our graphics, they are: Contrado (CON), Design Your Fabric (DYF), Dpi (DPI), Fabric on Demand® (FOD), My Fabric Designs (MFD), Red-Dog Enterprises (RDE), Spoonflower® (SF), and Studio West LLC (SW).

## Fabric

Fabric type is the most important variable in the finished product because of the fuzziness of the thread and the weave of fabric. I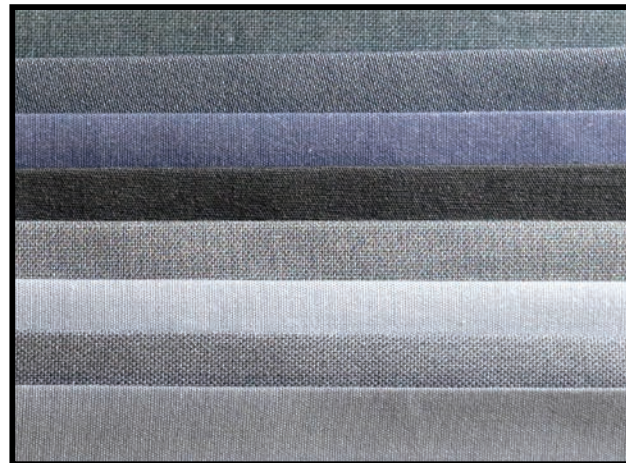n general, fabric is fuzzier than paper, especially photographic paper. The ink dots tend to spread, and the resulting print is less defined. Fuzz from the fabric can also block the ink from reaching parts of the fabric, creating white "spots" on the fabric. This is especially noticeable when printing dark colors on highly textured fabrics such as flannel or a nubby dupioni.

The weave of the fabric greatly affects the color and clarity of your printed design. Colors on loose weaves such as chiffon and voile, which have more open spaces between the threads, might not appear as dark. If your design has small text or fine details, you'd be better off choosing a dense weave with smooth thread, like broadcloth or sateen. We attempted to order the same lightweight plain weave cotton from each company, but it wasn't always possible. We recommend ordering a swatch set from the various companies you want to try, if it's available. The swatches are great for comparing color and sharpness of the print.

CON DYF DPI FOD MFD RDE SF SW

This image compares midtone grays.
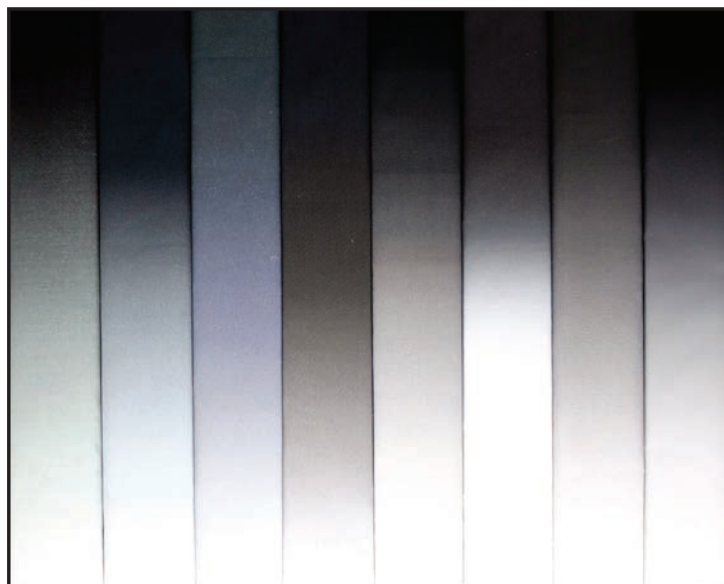


CON DYF DPI FOD MFD RDE SF SW

*This image compares black to white fabric printing.*



*Detailed attention to the grayscale helps achieve a proper proportion of black.*

## Printing Process

Ink or dye? Different printing processes yield different results. Since we had all of the samples printed on cotton, the choice was between printing with pigment ink or fiber-reactive dye. If you are having your image printed on synthetic fabric, a different printing process—dye sublimation—may be used.

The printing process can affect not only washability of the fabric but the range of printable colors. Check each company's website for information if you intend to wash the fabric. Unless noted in the details for an individual company, the sample was printed with pigment ink.

## Color

Using different dyes, inks, fabrics, processes, or printer settings will result in different colors. This is exactly what we experienced with our samples. For one, the color you see on your monitor is created by mixing three colors of light (red, green, and blue). Printed colors are created by mixing ink or dye, most often using the four basic colors of cyan, magenta, yellow, and black. Neither system is capable of

depicting the range of colors the average eye can see.

The color gamut chart shows the approximate range of the monitor, print, and visible color range. Even within monitors, the colors aren't the same—just go to your local big box store and take a look at all the televisions on display!

Furthermore, some processes require finishing processes after printing. Most notably printing with fiber-reactive dye requires steaming to set the dye and washing to remove the color that wasn't fixed to the fabric. Both can cause further color changes.

Finally, our perception of the color changes depending on the colors surrounding it. In Josef Albers' groundbreaking work, *Interaction of Color*, he demonstrated how color is almost never seen as it really is. Artists and quilters intuitively know this—quilters are forever auditioning fabric to see how the colors interact with each other.

We chose the images to print based on their colors. The bottle image has many colors and both sharp and graduated edges between the colors. The skin tones of the boys vary from light to dark. The red, green, blue, cyan,

magenta, and yellow dots give us an idea of how solid colors print.

## Black

Yes, we think black is a color too, but it deserves special consideration. Achieving a deep, rich black is critical when your image contains a lot of black or dark colors. If the black is not black enough, your image has less contrast and tends to look muddy. Another aspect of black to consider is the grayscale. How smoothly does the scale move from black to white? Is the medium gray at the middle of the grayscale? If not, you might have to adjust your image to get contrast in areas that are predominantly light or dark.

## File Requirements

Here's the rule: make sure your file complies with the printer's specifications! File requirements differed slightly among the businesses we profiled. Here are some considerations:

*Color Process:* Do they want the file in RGB, CMYK, or LAB color mode? All but one of our files used the more limited sRGB color profile. Studio West requested Adobe RGB. You can change the color profile in your image editing software.

*File Type:* Most companies accept many file types. TIFF files retain the highest image quality, but the size of the file can be huge. JPEG files are compressed, but can also cause pixelation. Since some of the companies charge a surcharge for large files, you need to weigh the tradeoff. Again, you can use your image editing software to change the file type. Our sample image was a JPEG image.

*Resolution:* Technically, your digital images are made of pixels, and resolution is specified in pixels per inch (ppi). Pixels are square. Printers print round dots, and the quality is determined by dots per inch, or dpi. Unfortunately, many people, even printing companies, tend to use these terms interchangeably. We use the terminology pixels per inch when referring to the resolution of the digital file.

The minimum/maximum resolution requested by our profiled businesses varied between 72-600 ppi. When we were doing our own printing, we tested resolution extensively and did not notice an increase in quality using resolutions higher than 150 ppi. One exception to this is if you want to enlarge the image within the printer's website. If you do enlarge a file with 150 ppi resolution, the resulting image will have fewer pixels and may result in a lower quality print. We suggest creating your image with a resolution of 300 ppi at the size you want to print. That way, if you want to enlarge the image, you have the capability to do so. We submitted our 18 x 20-inch sample files at a resolution of 150 ppi.

*Print Size*: If the final size of the fabric print is critical to your design, allow for shrinkage depending on the type of fabric and whether or not it will be washed before you receive it. We often add extra background to the image to account for shrinkage. You never know when you'll need that wiggle room. A couple of the companies, Spoonflower® and My Fabric Designs, specify the amount of shrinkage in both length and width. Yes, they can shrink differently!

## Text

We print a lot of text, so this is an important element for us. In general, these companies performed really well on printing text on the lightweight cottons we tried. Still, the differences at the smaller end of the spectrum were notable. The cotton broadcloth used by Red-Dog Enterprises leads to much sharper text than the calico used by Contrado, especially with the white-on-black text. If you plan on printing very small text, choose a smooth, tightly woven fabric.

## Price

With one exception, all the companies charged between $1.33 and $4.10 per square foot, excluding tax and shipping. Spoonflower® was the most expensive of this lot, but the price can vary depending on the amount of fabric printed at one time, and whether it was full yards/meters, fat quarters, or smaller samples. Studio West charged $21.60 per square foot, but they are a small shop specializing in artist prints, and you can talk directly to the person doing the printing. In fact, they called us to let us know that the resolution of our file was not what they requested.

If you order fabric from outside of your own country, please note that international shipping costs can vary greatly.

Finally, some of the businesses offer discounts. Sign up for their newsletters or eblasts to receive notice of special offers.

## Turnaround Time

We had our samples printed in the early months of the Coronavirus pandemic, and the turnaround times varied greatly. Because of staffing and shipping issues, we chose to not comment on the time it took to receive our fabric prints with one exception: Contrado consistently beat the other businesses by days.

## Returns/Reprinting

Please note that most companies will not guarantee color matching, so we suggest you have a small sample printed before you embark on a large project. Unless stated otherwise, the color not matching your printout is not a reason to return the fabric. Having said that, we had one sample where the color was posterized (not evenly shaded). We contacted the company, Fabric on Demand®, and they requested some information and then reprinted the sample for us.



**Paper (Staples)**  **Cotton broadcloth (Red Dog Enterprises)**  **Cotton calico (Contrado)**

*Weave plays a critical factor in your final printed image. Very fine text requires a smooth, tightly woven fabric.*

## Companies in a Nutshell

**Contrado** (www.contrado.com)

- Fastest turnaround time
- Contrado is located in the UK
- Prints on 103 fabrics, including leather
- Student/wholesale discounts available

**Design Your Fabric**
(www.designyourfabric.com)

- Based in Canada
- Uses fiber-reactive dye
- Ability to change design repeat: basic, half drop, half brick, center, mirror

**Dpi** (www.dpi-sf.com)

- Free technical consultation

- Will print on any fabric it can source
- Scarf hemming and other custom sewing services available

**Fabric on Demand®**
(www.fabricondemand.com)

- Uses fiber-reactive dye
- Fat quarters and 8 x 8-inch swatches available
- Good customer service. Reprinted sample due to posterization of faces.

**My Fabric Designs**
(www.myfabricdesigns.com)

- Uses all three types of dyes, depending on fiber content.
- Shrinkage in length and width listed with each fabric type

- Ability to change design repeat: basic, half drop, half brick, center, mirror
- Fiber-reactive prints are printed in Thailand

**Red-Dog Enterprises**
(www.red-dogenterprises.com)

- Very small business
- Personal service
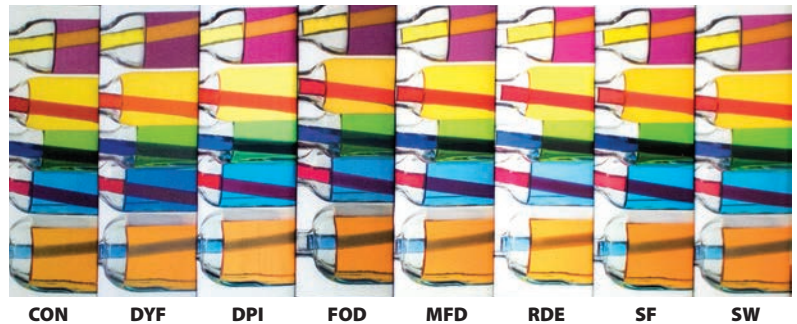- States upfront that color matching is not guaranteed

**Spoonflower®**
(www.spoonflower.com)

- Overall best website. Easy to use and lots of information.
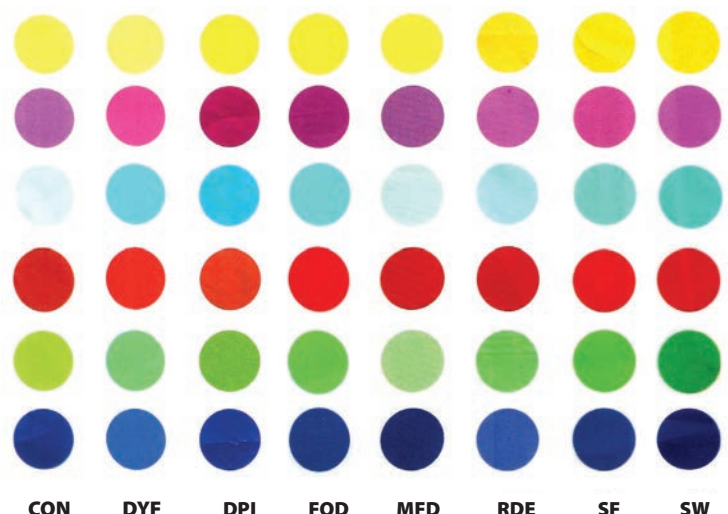- Does not guarantee a "true, rich, saturated black"

*These samples provide a comparison of skin tones.*



*An image of glass bottles yielded these results.*



*Color dots provide insight into how solid colors are created in the printing process.*

## Fabric Printing

- Ability to change design repeat
- Shrinkage in length and width listed with each fabric type
- Ability to Fill a Yard® with several designs in one yard.

**Studio West**

(email newriverdoug@gmail.com)

- Works mostly with artists
- Best choice for people with little computer knowledge
- Fabric comes rolled with the paper backing still attached

### Final Thoughts

Now that we no longer print for ourselves, we have found that we order from different companies, depending on the needs of the individual project. Time seems to be our enemy, so we try and order with a long lead time. The Covid-19 pandemic has increased delivery times, so plan accordingly. Ordering a custom sample will provide you with better information at low cost to ensure an even better print. We have often made multiple prints of one image (and sometimes from different companies) to get the results we want. Even paying for several prints, we have found outsourcing printing is much more cost effective than printing ourselves. And with all of today's options, there really is no reason not to have your creative vision realized in fabric. ◼

*Kris Sazaki and Deb Cashatt are the Pixeladies. They printed fabric in their studio for more than twelve years before moving exclusively to online fabric-printing companies. They teach digital design and Photoshop Elements courses online.*