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REVIEW

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tips for digital
file preparation

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The race is to the well-prepared

Understanding the basics of digital file preparation is the first step towards creating artistry in printed fabrics.

By June Bisantz

Printing on fabric is a dynamic, technology-driven industry that requires customers, printers and manufacturers to work together in the design and production process. Whether you're creating digital artwork yourself, or printing it for a client, understanding the basics of digital file preparation will help you create fabric products that look their best. Although fabricators and printers use a wide variety of hardware and software, knowing the basics of digital file preparation can help you minimize difficulties and maximize success.

When all else fails, follow directions

Every manufacturer works with different fabrics and equipment, and offers a variety of options in terms of finished size, printing process and fabrication. Most printers make file preparation directions available on their Web sites to insure a smooth flow from file to finished product. Reading these instructions carefully is an important first step in preparing digital files correctly. "When all else fails, follow directions" is the advice of digital imaging expert Harrison Judd, owner of futureHistory in Willimantic, Conn. "Follow the directions on your vendor's Web site, and if you don't understand them, talk with their customer service or technical support teams," he says. "Ask questions and follow directions exactly, and you'll get the result you're looking for."

Resolution Rule of Thumb

- 150 dpi for a file sent at actual size
- 300 dpi for a file is sent at a 1/2"=1' scale
- 600 dpi for a file sent 1/4"=1' scale

Tip: To see how your file will look when printed at actual size: View it at 100 percent by double clicking the magnifying glass or zoom tool in Photoshop and Illustrator.

June Bisantz Evans is a professor of digital art and design at Eastern Connecticut State University in Willimantic, Conn. She is a digital artist who creates images for outdoor installation on billboards, banners and public transit.

Designers Quick Tip Sheet for Large Format Production

Designing for large format is easy. The following tips will save you time and effort, while increasing your production turnaround time. Less is required from the designer than generating files for other output methods, leaving you more time to be creative.

1. PMS COLOR MATCHING

Any PMS colors should be called out, the production department does the rest. True spot color matching is not available for large format imaging systems. Some colors are more likely to be achieved due to each output devices limitations. However, all PMS colors are matched to their best possible interpretation.

2. MULTIPLE PANEL PROJECTS

Set up any multiple panel project as one image, and at the exact combined width of the design. All images are tiled at the production level from a single image. Designs generated as multiple files can incur production charges and or not be guaranteed to line up precisely.

3. SOFTWARE

Unlike most other image developing processes, large format production accepts but does not require the use of QuarkXpress or InDesign. Designers are free to supply the production department with art directly from Illustrator, Freehand and Photoshop. Illustrator and Freehand effects and transparencies often cause files to act unpredictably, so the use of those features are not recommended. Photoshop files should be layered and set up at 100ppi at final size. Please include all fonts.

4. EMBEDDED IMAGES

Never embed files within your design. Always include a separate file, or "support file" for every placed image. Embedded files cannot be checked for quality or adjusted for color and act unpredictably when ripped to output.

5. PRINTED LAYOUTS

Whenever possible please include and accurate print of your design. Although colors may be somewhat different due to the many output devices used for proofing, an accurate layout helps confirm the composition of the file. If any fonts are linked incorrectly or images shifted, our preflight department will have an accurate map to reference. For E-transferred files, a flattened screen shot may work as a quick reference of the layout.

Printers post file preparation directions on their Web sites to guide you through the digital process. Follow directions, and ask questions, to ensure good results. Shown here is a "Designers Quick Tip Sheet" from Optima Graphics, www.optimagfx.com.

Tony Schmitt, product development manager for Optima Graphics in Fenton, Mo., says: "In the past, it wasn't unusual for us to receive a drawing from a client on a cocktail napkin with a PMS number and a request to create signage. Now, after years of working with and educating customers, we generally receive digital artwork in a useable format." By offering clear directions for digital file preparation to their clients, Optima Graphics increases efficiency and minimizes difficulties.

Digital dos, don'ts and definitions

Choosing the right software

Designers and clients can help the digital process run smoothly by choosing the right software for the job. The most universally recommended programs for fabric printing are Adobe® Photoshop® and Illustrator (FreeHand and Corel software products are also used, although not as widely.) Not recommended for printing on fabric are QuarkXPress®, InDesign®, Microsoft Word or Publisher; these programs are designed for printing on paper, and embed image files in page or layout files, complicating the fabric printing process.



Make sure your file has a high enough resolution by viewing it at 100 percent or actual size. The pixelated image on the left does not have enough resolution to print well at full size. On the right is a properly prepared high-resolution image.

has light” he says, “and the quality of that light changes what you see both on your monitor and on your printout. And don’t try to get good color results from a low-end monitor or printer. Buy quality equipment and buy the inks that are made to work with your specific printer.”

Judd also stresses the importance of calibrating your monitor and installing the “profiles” that come with your printer software.

- Calibrating your monitor matches your monitor to a universal color standard. Monitor calibration hard-

File Preparation Tips

- Use the software recommended for printing on fabric (Photoshop, Illustrator, FreeHand, Corel)
- Don’t use Quark XPress, Adobe InDesign or Microsoft Word
- Make sure your file has the proper resolution
- Send your file in organized, clearly named layers to make it easy to adjust
- Convert type to outlines or rasterize your type before you deliver your file to avoid font issues (Rasterizing converts type to pixel art for printing. To rasterize type in Photoshop, go to the Layer menu, choose Rasterize, and then select Type.)
- Keep the end use of your product in mind when you choose your fabric and prepare your file
- Select your printer’s profile in your graphics software before you send your file to print
- Deliver your file in the color space requested by your vendor

ware such as Pantone®’s Spyder™ and GretagMacBeth’s Eye-One, both available for less than \$200, use on-screen directions to take you through the calibration process.

- Printer profiles match your printer to your monitor. Identify and install your printer’s color profile (included with your printer software) and select that profile in your graphics software before you send your file to print.

Taking these two simple steps to coordinate your monitor and printer will help match the color information in your digital file to what you see on your screen, and to your printed proof. Paying attention to color matching is key in the digital printing process, according to Greg Schopmeyer. “If I get a properly calibrated and profiled file and match print, I have a place to start from when adjusting color,” he says

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A market banner in downtown Urbana, Ill., and a banner for the Champaign Public Library: demonstrating an effective use of vector art on fabric. The design uses flat, clear areas of bright color and type. Shown at right is the Minimaki JV3 160sp printer in use at TCT&A Industries.

Vector vs. pixel

Illustrator and Freehand are vector programs that use mathematically generated lines and curves to create type and image; use a vector program when your design calls for large, flat areas of color, and bold, clean outlines, shapes and type. Photoshop or Corel Paint are pixel programs that use pixels of different colors to create realistic photographic images. If your design uses photographs, choose a pixel program.

File size: Is bigger better?

The ability to reproduce photographic images on a wide range of materials is an exciting advance in fabric printing technology. However, all photos are not equal in the realm of digital printing. Small images, such as photographs taken from the Web, do not have sufficient resolution to print well at large sizes. A basic understanding of resolution—called dpi (dots per inch) or ppi (pixels per inch), or simply referred to as “file size”—is fundamental to digital file preparation. The number of pixels making up a digital image determines whether it will look jagged and pixelated or clear and sharp when printed at full size. Byron Yonce, president of TCT&A Industries in Urbana, Ill., says the most important “do” of digital file preparation is to “make sure your file is big enough to look good at its finished size.” Although printers agree that you don’t need to overdo file size to get a good result, they all stress the importance of sufficient resolution, and would rather have too much than too little. Yonce says that resolution should be built into the file from the beginning. “Design with the proper resolution from the start,” he advises. “Simply increasing the resolution of a small Web image will not make it a high-resolution file.”

Getting Good Color

1. Light your workspace properly
2. Invest in quality equipment
3. Use the proper ink for your printer
4. Calibrate your monitor
5. Identify and install your printer’s profile

Greg Schopmeyer, vice president of OIA Inc., Tampa, Fla., agrees: “Digital integrity (sufficient resolution) is absolutely necessary for good output.”

Show your true colors

Getting the desired color results from a digital file can be time-consuming and expensive. Understanding some digital color terms and taking a few simple steps with your equipment can help insure good results.

Being in the right space at the right time

It’s important to deliver your digital file in the color space requested by your vendor. Color space or color mode refers to the gamut of colors available as you work on a digital file.

RGB (red, green, blue) is the largest color gamut or space. CMYK (cyan, magenta, yellow and black) is smaller and more compressed. When a file is converted from RGB to CMYK, the colors are “clipped” or compressed. “Create your file in the

largest color space available to you, which is RGB,” Byron Yonce advises. “You can always compress the color gamut, but you can’t enlarge it if it’s already clipped.”

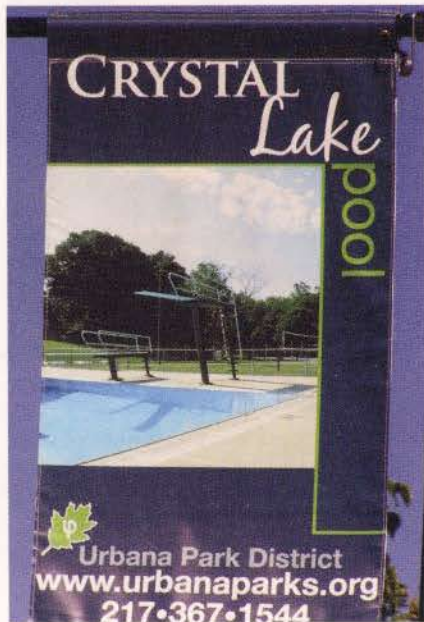
Having a good profile

Most printers ask you to provide a printed sample (color proof) along with your digital file. The more accurate the printed sample, the better your final results will be. future-History’s Harrison Judd offers some important insights about the relationship between monitors, digital files and printed proofs. He advises lighting your workspace properly with daylight or daylight-balanced fluorescent light. “All color

"and I'll be able to achieve the desired result much more easily."

The right tool for the job

Fabric is a unique printing medium. Its wide range of textures, weights and surfaces offers almost limitless options for creative use. Ken Chang, director of graphic arts at Globe College in Minnesota, and a participant in the IFAI Student Design Challenge 2005 (organized by IFAI's Banner, Flag & Graphics division), says: "My students expected to be limited to vector graphics and vinyl materials—but they discovered the range of fabrics and pro-

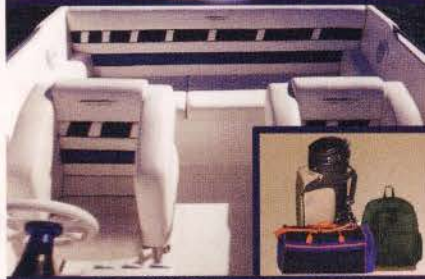


TCT&A Industries

If your design uses photographs, choose a pixel program like Photoshop to create your artwork.

duction methods available to them were extremely diverse. The medium seems to be limited only by the imagination." Choosing the right fabric for the job is a matter of sorting through all the options available, keeping in mind the end use of the product and knowing what you want to communicate. "For example," says Byron Yonce, "the textured look of textiles is inviting and comfy. Vinyl gives more pop and brilliance—but a colder feel. The right fabric choice depends on the message you want to communicate with your product."

Choosing the right software for a particular fabric is a matter of understanding the special qualities of your fabric in combination with the strengths of your software. A textured fabric, viewed from a distance, will be more forgiving to a



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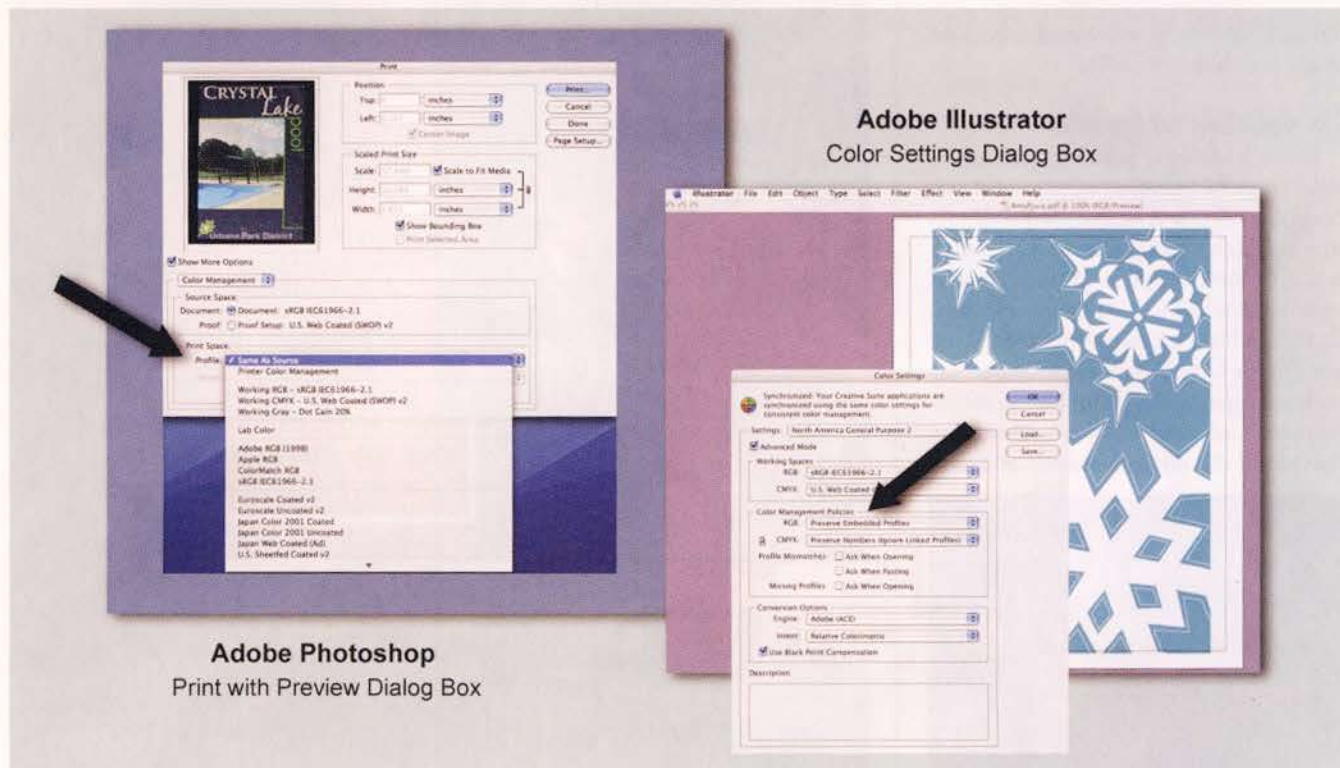
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Adobe Photoshop
Print with Preview Dialog Box

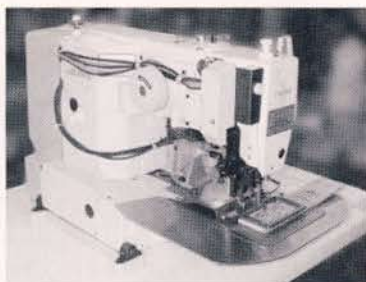
Adobe Illustrator
Color Settings Dialog Box

Choose your printer's profile in your graphics software before you send your file to print. In Photoshop, (left), choose your profile in the Print with Preview dialog box. In Illustrator, (right), use the Color Settings dialog box.

grainy image; while a smooth fabric seen at close range will show a lot of detail and require a crisp, clean image. Knowing the specific tactile qualities of your fabric, how it will be used, and from what distance it will be seen, are necessary ingredients in bringing the right design concept, software and fabric together.

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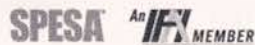
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The medium is the message

"The beauty of fabric," Optima Graphics' Tony Schmitt says, "is that on a subconscious level, it's attractive to human beings—we wear it and cover ourselves with it when we sleep. Fabric communicates to us because of our connection to it. Consumers don't consciously think about all this—but they feel it." Printing on fabric offers a rapidly expanding range of creative opportunities to fabricators, customers and designers. In today's climate of multiple choices and innovative options, the sky's the limit. Getting comfortable with the basics of digital file preparation is an important step towards full participation in the future of this exciting, technology-driven industry. **R**

To offer feedback or comment on this article, please contact Gabynn Nordstrom, Senior Editor, at +1 651 225 6928, e-mail gnordstrom@ifai.com.

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