



# Managing flexo color

Design continues to be the missing element when dealing with color management. **Alex James** at Harper Corporation offers some advice for making an easier transition into the press room

**T**he increase of Four Color process printing has highlighted the ongoing challenges of color management within our industry. It almost goes without saying that getting a handle on the diverse variables leads to job repeatability, consistency, waste reduction and ultimately, greater profitability. Factors which affect these variables encompass the press room, aniloxes, the ink room, and pre-press. But, what about design? Design continues to be a missing ingredient when dealing with color management. As designers continue to push the graphic envelope and customers demand complicated photo quality images, more printers are facing numerous issues when dealing with process printing.

Of major importance is the ability to communicate to designers and agencies how color is quantified within your environment. Is it done densitometrically, or spectrophotometrically, via  $L^*a^*b^*$ , or  $L^*c^*h^*$  color values, or are parameters for ICC established? ICC profiling is another tool for managing color. This defines output color parameters for a given environment but alone does not guarantee color consistency. Regardless of the established profile, if you start with a poor quality original image, it's only going to go downhill from there. What ever method you use, communicating these parameters with those submitting graphic designs to your company will help to get everyone on the same page and enable greater predictability for production of a successful product.

Designing for Flexo is not the same as designing for Offset. Designers typically do not comprehend that Flexography is a different animal. Effective designing for Flexo requires clear communication and education between the designer, the pre-press department and the printer. Without understanding design parameters for Flexo, designs are submitted and the burden of making a producible product lands on the pre-press department. This transition can be very costly and gets hidden by a desire to maintain good working relationships with customers. Companies need to place value on bringing designers (agencies) into their facility and conducting a walk-

through educational session.

Another suggestion is to put together an informational packet containing design specific parameters, any special options available such as metallics, varnishes, embossing, foiling, information regarding print tolerances, ink options, trap percentages, color targets, print contrast, press gain, and ICC color information, if available. The value of understanding the process is immense and should result in submitted designs that are specific for your conditions. This, in turn, should result in a smoother and less costly transition to the press room.

Choice of stock is a major factor influencing color, and too often color gets chased on the press by trying to match an inkjet proof submitted from a customer in another town, city or state, that doesn't reflect choice of substrate used for the actual run. For example, the odds of a design output on an inkjet proof with glossy stock ever matching the same design when printed on a matt stock are slim to none. Many designers and agencies are savvy enough to grasp the real world transition from design to print, and by establishing communication with customers, the struggles of color management can be minimized. Believe it or not, ink jets can generate proofs on a variety of stocks, quite possibly on the very stock required for the given job. Take the time to send paper samples that will be used for their job to the designer or agency. If nothing else, it will be a reality check as to the choice stock of their submitted design.

Another issue which is important to comprehend is that the color viewed on the monitor is inherently different than what is printed on paper; additive R,G,B color (monitor) verses subtractive C,M,Y,K color (ink on paper). What you see is not what you will get. The use of color guides when designing can greatly increase consistency of expected results. This is important not only for spot (Pantone) color selection, but more so for process printing and especially for Hi-Fidelity printing such as Opaltone. Designers utilizing color guides in conjunction with printer specific parameters will be assured of greater predictability and consistent results.

In Flexography, perhaps the biggest issue affecting color

management is press gain. Press gain is a given and is unique to each environment, and it is therefore critical for designers and agencies to understand press gain and adjust their designs accordingly. Typically, the task of compensating for press gain through the use of dot gain compensation curves falls on the pre-press department, as it should. By understanding press gain, however, designers will know to minimize C, M, Y, K mixtures in order to have clean colors in their design. This is especially critical when attempting to match process printing designs in a Flexographic environment to one that has been printed in an Offset environment; any subtle, pastel and saturated colors, can easily be off spec with minimal variance of any color during a press run and result in a product that is not acceptable to the customer.

Another ongoing challenge is the various source of graphic elements included in submitted designs. In today's fast-paced environment, images are downloaded from the Web, originate from digital photographs of varying quality, and go across platforms from PC to Macintosh and Macintosh to PC. Such graphic elements typically have specified color parameters applied to them at a variety of resolutions. A good ratio to keep in mind is 2:1, that is image resolution to plate. For example, 300 ppi image to a 150 lpi plate.

When using photographic images it is critical to start with the best quality original because by the time the graphic images reach the end product on paper or film, it is four or more generations away from the original. For example, 1. start with a scan or digital photograph and input into your graphic layout; 2. submit it to your prepress or art department for output where a proof is generated; 3. Output film; 4. Expose plates; 5. Print the design. Obviously, accounting for variables along the way is crucial for accuracy and successful production, and it is therefore vital to start with good high-resolution originals when using photographic images. Remember the old adage, "garbage in, garbage out".

In the press-room, the value of establishing standard operating procedures and conditions are the keys to producing quality four-color process jobs every day. When working with your ink and anilox vendors, you should define specific conditions for a given press which will then enable your press operator to manage color in the press-room. Standardization of Aniloxes, Inks, Sticky Back and press conditions is critical for consistency and repeatability. Establishing running targets with each job enables the quantification of color in an objective manner. See Figure 1.2 After all, a densitometer or spectrodensitometer, unlike us humans, is never in a bad mood or too tired from staying out late the night before, and the utilization of such tools enables the achievement of a consistent color target. This is also true for the pre-press and plating department; establishing quantifiable standards in the

plate and imaging department enables consistent repeatability.

Within every company establishing an ongoing dialogue among all related departments will foster an appreciation for the diverse contributions required for the successful processing of each job and will enable easier adjustments to be made whenever a variable is changed, i.e., change to new plate, inks, sticky back, film, or press conditions.

Communication between departments in many instances is conducted in an adversarial "us against them" manner, and lost



along the way is the understanding of parameters within the various departments that contribute to successful reproduction of the submitted design. For example, while conducting a Banded Roll Trial at a customer's plant, I had a break and went in to visit with their prepress department to discuss the process of the trial and the value of the anticipated results. I explained the value of each graphical element in the Banded Roll layout and the relevant data that would be gathered from those elements. Sensing their curiosity had been piqued, I decided to show them press side and the data gathered with the use of a spectrodensitometer. The reactions from the press-room employees when they saw the pre-press staff on the press-room floor were, unfortunately, all too typical. Questions like, "What are you guys doing out here?" and "Aren't you guys supposed to be in the pre-press room?" was heard as we made our way onto the production room floor. This is a prevalent attitude found throughout every company and is by no means unique to Flexography. Regardless of the size of your company, the value of cross-departmental training cannot be stressed enough. It fosters a greater understanding and appreciation of the work required of each individual which, in turn, will determine the success of the company.

Having covered numerous variables let's get back to the original question. Where does color management for Flexography start and end? Obviously it starts in design, and continues to the prepress department, the ink room, the anilox and ultimately is reflected by what comes off the press. Establishing quantifiable processes and standards, and communicating those variables not only to your customer but also within your company will greatly contribute to success in managing color. With effective dialogue between all parties, the odds increase for greater color consistency and repeatability of printed jobs, day in and day out. The end result is higher efficiency, happy customers and ultimately greater profitability. ■