TECHKON

TECHGUIDE:

How to Implement a Color Quality Control Process for Packaging

Measure your way to success …

Does your company need a Color Quality Control Process? Can you afford not to have one? Here's how you set up a Color Quality Control Process in 5 Easy Steps:

- Verify Your Ink
- Evaluate Your Substrate
- Measure Your Color
- Analyze Your Trending on Press
- Determine Your ROI

In today's print packaging market, where 60% of brand perception depends on color accuracy (Source: Packaging Printing Survey 2009), the question whether to implement a Color Quality Control Process is more of a business exercise than a technical one.

Ask yourself the following questions …

- Does your color quality satisfy the more exacting brand owners' requirements, and position your company for success as a packaging printer?
- Can your operation continue to absorb costly remakes to maintain customer satisfaction?
- What about waste on press: Can you continue to sustain the same profit margins as paper, ink, labor and setup costs increase and operational efficiency remains status quo?

Packaging Printers face these critical issues on a daily basis, and adopting a Color Quality Control Process is the perfect way to remedy them. Here's how to build your Color Quality Control Process in 5 easy steps …

VERIFY YOUR INK …

Is your ink the right color? How can you tell?

Any pressroom manager can tell you that different batches of ink will have slightly (sometimes substantial) different color characteristics. The ink color you print today will not necessarily be the same color you print next month. The challenge is to determine whether the color of the ink you are receiving from your supplier falls within an acceptable range of your customer's specified colors and tolerances. Color variance is often not discovered till the end of the press run; with multiple buckets of ink and many rolls of substrate wasted.

How can you avoid this pitfall? Manage your ink procurement process by following these steps:

1. Work with your customer/brand owner to define what color values are required and specify the acceptable tolerances in the color balance.
2. Request an ink draw-down on the actual material you are going to print on from your ink supplier.
3. Ask your ink supplier to document how close the batch of ink is to the specified color (ΔE) along with the actual color values (Lab).
4. Use a Spectrodensitometer to measure the color of the ink draw-down to verify that it is within the customer-stated color specification and tolerance.
5. Use a Spectrodensitometer to measure the press run at regular intervals to make sure color accuracy is still consistent with customer tolerances. Swapping in a new bucket of ink may cause unintended color variation. Catching it early can make a major difference in not only the success of the press run, but also the cost.

Just by following these ink guidelines, you can control ink color variations that ultimately lead to costly remakes and wasted materials on press.

EVALUATE YOUR SUBSTRATE …

How will the color of the substrate affect the color of your printed job?

It is not only about whether your ink color is accurate, at the right viscosity or the correct PH. The materials you are printing on can (and will) substantially influence the accuracy of the color being printed. Since inks are not 100% opaque, the color and texture of the substrate will show through the ink being laid down on press, and cause a sometimes substantial color variation. Using a Spectrodensitometer to measure the print materials will help ensure that you are getting consistent color between rolls. It will also help you better predict the impact the color of your print material will have on the end result of the printed piece.

MEASURE YOUR COLOR …

What's the difference between checking density and measuring color in pressroom color measurement?

"Density is a great metric of tracking and controlling fluctuations on a printing press but not a good indicator of how the color correlates to the human eye. Colorimetry is proven to communicate color and provide tolerancing that closely associates with our eyes." Dan Reid, RPimaging

Densitometers measure density.

A density measurement is the amount of light reflected from the printed material. A higher density reading means a darker surface that absorbs more light than it reflects. When adding extender or water to an ink bucket to adjust the density, you are effectively "watering down" the colorants in that ink making it a lighter surface that absorbs less light than it reflects. A density reading does not tell you whether the color matches your customer's specification and is within their tolerances. So while you may achieve your target density, your visual color may be incorrect.

Spectrophotometers measure color.

The best method to ensure accurate color is to use a Spectrodensitometer to measure the color. A Spectrodensitometer is an excellent tool for qualifying whether the color being printed is accurate, and if not, quantify how far off it is from the customer-specified color. And at the end of the press run, isn't it all about printing the correct color and satisfying the customer? So check density, but be sure to measure color.

ANALYZE YOUR TRENDING …

Are you maintaining consistent color press-to-press, shift-to-shift and plant-to-plant?

The press is the most complicated and mechanical part of the process, and because of this it is the part of our manufacturing process that deserves the most attention. In most plants press conditions are constantly changing. If it is not the season and the weather, then it is wear and tear on machines and the differences in operators. And with the presses being the most expensive pieces of equipment in the plant, as well as the key moneymakers, it should not come as a surprise to find out that the press deserves a lot of attention."
Ron Ellis, Certified G7 Expert and co-chair of the GRACoL Committee

One of the main challenges that package printers face is how to check and maintain consistent color between different shifts, presses, and often times, between different print facilities that are printing the same customer job. There are three main elements to minimize unacceptable color variations press-to-press, shift-to-shift and plant-to-plant:

1. Standardize the color measuring device. A Spectrodensitometer will measure the color being printed and compare it against customer-approved color specifications and tolerances.
2. Standardize the target. Make sure each shift, press and print facility is using the same customer-approved color specifications and tolerances to check the color against. This ensures everyone is measuring against the same target.
3. Standardize the color control trending software. It will track the performance of a specific job and produce reports indicating to the customer or internal quality personnel how well the press run performed across shifts, presses and different facilities.

These three elements enable you to monitor the performance of the press run and will quickly indicate if there is a color problem regardless of whether the print job is being produced on multiple presses, different shifts or at multiple locations.

DETERMINE YOUR ROI …

How can you build process improvement if you don't track and compare?

Even a simple ROI will tell you the huge impact your new Color Quality Control Process will have on color accuracy, pressroom efficiency, consumable savings and overall customer satisfaction.

"Overall, the press rooms run more efficiently with color quality performance tracking across the Smurfit-Stone network of packaging plants, with better scheduling achieved through faster makeready, and significant savings in time, labor and material costs — all key components to customer satisfaction." Russ Lawrimore, senior director of Operational Excellence Smurfit-Stone Container Corporation.

SUMMARY

When building your quality assurance plan for press room, it does not matter whether you start with a simple handheld spectrophotometer or more sophisticated inline device … the difference is measured only in time and efficiency. Highly accurate color measurement devices, operators skilled in the practice of using them and clear cut guidelines to follow provide a sound foundation to build upon your Color Quality Control Process.

When used consistently as part of a comprehensive color quality control program, both will yield the highly desired results and make a substantial impact on both customer satisfaction and your company's bottom-line … as long as you use them!

White Paper Sponsored by TECHKON USA

TECHKON is the innovation leader in densitometers, spectrophotometers and color software solutions for the global print community. TECHKON products are chosen for their high degree of measurement speed, accuracy, repeatability, reliability and ease of operation in all sectors of the printing industry. TECHKON's innovative color measurement solutions have lead to highly successful implementations by leading OEM press manufacturers and large commercial printers, yielding dramatic gains in quality, productivity and cost savings. TECHKON … We measure color and more.

www.techkonusa.com