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Enhanced Color Matching Techniques for Direct-to-Corrugated Printing

By Ronald Hughes and Paul Rachanow

One of the worries we frequently hear from prospective customers is that they won't achieve excellent brand color matching on their point-of-purchase displays if they make the switch from litho labels to direct-to-corrugated printing. This concern is understandable. When direct-to-corrugated printing first came to prominence a generation ago, it struggled to approach anything close to litho-level printing clarity. The technology simply wasn't there yet.

But times have changed. Technological advances have yielded drastic improvement in color matching precision, regardless of the substrate. This uptick in quality assurance, coupled with the better known benefits of printing POP displays directly on corrugated — most notably, significant cost-savings and greater speed to market — has helped our company, Sutherland Packaging, turn many potential customers into actual ones.

Color Matching: An Overview

The science of color mixing and matching is a fascinating one, because perception and interpretation of color are highly subjective. As a result, objectively communicating a particular color to someone without some type of standard is difficult. For this reason, there needs to be a way to compare one color to the next with accuracy. The solution is a measuring instrument that explicitly identifies a color, differentiates it from all others, and assigns it a numeric value. Our eyes are subjective; mathematics is not.

From left, a litho-printed display produced by Sutherland Packaging is nearly indistinguishable from a direct-to-corrugated display.

The most commonly used instrument for measuring color today is the spectrophotometer. Spectro technology measures reflected or transmitted light at many points on the visual spectrum, which results in a curve. Since the curve of each color is as unique as a signature or fingerprint, this technique is a highly accurate tool for identifying, specifying and matching color.

Color Matching for Direct-to-Corrugated Printing

Color matching for direct-to-corrugated printing differs a bit from color matching for litho labels. For one, it involves printing color on a substrate consisting of three layers of paper of varying thickness, as opposed to a single layer of consistent substrate. This makes the process more challenging — but, again, this difficulty gap has been bridged by modern technology in many ways.

At our company for example, we utilize an ink-mixing machine capable of working with more than two dozen bases and additives to make virtually the entire range of Pantone-range colors, as well as special customized colors on request. We employ a variety of tools — X-ray photometry, spectrophotometry and yes, even the old-fashioned human eye – to verify these matches far more accurately than in the past. Without getting too technical, customers can rest assured that they are getting their color match to within 2.0 ΔE* — a tight enough range that the average naked eye cannot discern any difference in hue.

In the case of an especially tricky color match, or a print job that requires tighter-than-usual specifications, another method involves laying a thin film of white on the corrugated and printing on top of that. Here, any worries customers may have about smearing, running or bleeding of colors — ongoing issues back in the not-so-good-ol'-days of corrugated printing — can be quickly allayed, as the technology in use today largely obviates their occurrence.

Size Differences

In terms of its versatility for point-of-purchase displays, litho printing's size limitations pose a major disadvantage. Litho's print parameters max out at the 58x80˝ range, while direct print presses can run jobs upwards of 65x124˝. While direct print screens have a lower resolution than litho (65-line screens as opposed to 130+ lines), the discrepancy is minimal to the naked eye — a tiny difference that, considering the product's function as a "from afar" attention-grabber, is entirely insignificant.

That said, the time and cost-savings benefits of switching to direct print can be immense, since it eliminates the need for multi-piece litho labels which, typically, are substantially more time-consuming and expensive to produce. Here, the expanded printing width possible in direct-to-corrugated printing becomes especially poignant, as larger display pieces such as snack towers and pallet wraps can be printed and diecut in one pass. This eliminates the need for stitching and gluing seams and assembling multiple pieces, resulting in savings of both time and money. Cost savings naturally vary over time depending on run sizes and numbers but, generally speaking, direct print will be cheaper than litho for run totals between 2,000 and 20,000 pieces.

Seeing Is Believing

For potential customers who still struggle with the decision of whether or not to make the switch, one of our favorite final steps to showcase the precision of advanced five-color, high-impact direct print technology is a sort of not-so-blind taste test — one that involves their own product. The test is simple. We create two mock displays: one using litho, and one with direct corrugated.

More often than not, the result is a mouth-agape, "I can't believe it's not litho" sort of incredulity.

They are seeing for themselves that the drop-off in print quality from litho label printing to direct-to-corrugated is truly minimal, and that the cost-saving and speed-to-market benefits of making the switch dwarf this infinitesimal difference in color matching or print clarity.

About the Authors

Ronald Hughes, ink technician, and Paul Rachanow, graphics coordinator, are color matching experts with Sutherland Packaging, a leader in corrugated displays and packaging for retail and club stores. Its specialties include custom packaging, structural and graphic design, five-color direct-print point-of-purchase displays, fulfillment and on-box marketing.
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