

DIMENSIONAL INKJET

ADVANCES ARE DRIVING DIFFERENTIATION

Scott Bucholtz, Digital Print Solutions Manager, Screen USA

Nearly every discussion with wide-format digital print providers includes the question, "How can I differentiate my products or services to make them stand out and increase my profitability?" Such is the extreme competitiveness of the wide-format market.

One answer is to image products that other companies do not have the capabilities to produce.

Introduction of unique effects lends special meaning to what is truly different about digital print. The ability of wide-format UV inkjet printing systems to jet multiple layers of ink in a single pass gives printed matter a fresh look and feel.

Bernie Sigal, founder of Curv Imaging (Westerville, OH), considers multi-layer imaging a natural extension of the creative services and boutique printing products that Curv offers. "The exciting process definitely opens new doors and extends the imaging capabilities to my customers," Sigal said.

The 3D Effect

Overprinting extra layers of ink builds up selected objects on an image and results in a realistic three-dimensional effect. Examples of multilayer printing include simulated embossing. The increased ink thickness raises the surface on logos, brand names, and images of orange peels, basketballs, alligator skin, hand-tooled leather, and other things.

Architectural and interior decorating is benefiting from multilayer imaging in such applications as dimensional wall coverings seen most frequently in corporate buildings and retail locations. Multilayer imaging also can be used for Americans with Disabilities Act-compliant braille signage.

In addition, multiple layers create interesting window graphics viewed from both sides of transparent material with no showthrough. This way, you double the marketing message in the same amount of space. Since every layer is printed in one pass, it is easy to add a company logo or customized perf pattern to the images as a unique window graphics application.

"The ability to print multiple image layers was an important consideration for us," said Neil Humphrey, president of Willamette Print & Blueprint (Portland, OR). "It has unlocked new revenue streams and allows us to print short-run specialty applications cost-effectively. We are doing projects that are not on our competitors' radar screens."

Jumping In

Many manufacturers have wide-format UV devices capable of delivering two-dimensional images quite quickly for commodity work, but only a limited number of machines on the market can perform multilayer imaging. Printing multiple layers is a technological challenge that entails both hardware and software development. This requires a high-quality product and ink that will not fade, crack, or chip. Accurate drop placement of ink is necessary to produce raised and textured images in perfect register. Being able to print photos, logos, and text on glass, metal, wood, stone, tile, plastics, and paper also is critical.

"A customer asked us to do textured print on a rubber yoga mat to give away as a promotional item," Humphrey said. "The flexibility of the ink withstood the bending and folding that would be expected in the life of a yoga mat. It was yet another unique application that has expanded our portfolio of products and allows us to provide additional services to an existing client."

As an example, the Screen Truepress Jet2500UV roll and board inkjet printer can print up to twenty-one image layers in one pass. The textured ink build can exceed two millimeters from the substrate surface. To create a four-color dimensional piece, the inkjet printer repeatedly lays down black ink, building the raised area to the preferred height. A layer of white ink covers the thick black layer and allows for the full color gamut when printing the four-color image. The final step prints the finished CMYK image.

"As large-format printing has become commonplace, the dimensional print capabilities are engineered to satisfy and delight the most creative and discerning clients," said Brian Johnson, president of Fresh Color Press (Eden Prairie, MN). Dimensional print has differentiated us from the dozen or more large-format providers in our area. We anticipate continued growth in the fashion and retail markets in which getting noticed is vital."

Additional Applications

With a five-layer, two-sided window graphic, the images and accompanying text can be seen as they normally appear, and each image can be different in order to show different messages when viewed from inside and outside the window. The first viewable image and text are printed wrong-reading (a mirror image of the original) on a clear substrate.



Examples of dimensional inkjet printing, which include: (A) Example of a textured object and dimensional text. (B) Dimensional Wall Covering for the Architectural market. (C) 2-sided window graphic with a company logo perf pattern. (D) Texture sample to simulate rock/text chiseling. (E) Fossil image to achieve realistic relief effect.

Individual layers of white, black, and white ink provide a full blackout to prevent the viewable images from showing through. The second viewable image becomes the final layer.

A see-through effect on standard transparent media is similar to the two-sided window graphic with the addition of a perf pattern that is imaged in all five layers. See-through graphics typically have relied upon costly perforated film. However, by leaving certain sections of standard window film blank in a dot or line pattern, it is possible for window glass to function as advertising media while retaining one-way transparency. This perf pattern could be a generic shape, a company or sports team logo, or any customized perf pattern.

"Ad agency clients are promoting our multilayer imaging capability to their customers," said Emily Castle, president of Franklin Imaging (Columbus, OH). "Customers are extremely interested in double-sided window clings and see-through graphics. We've printed multilayer jobs with raised lettering and braille for dimensional signage. Multilayer imaging gives Franklin Imaging a lucrative opportunity in high-impact applications."

Customer Reaction

How do customers react when they are introduced to multilayer applications for the first time?

"They are definitely excited!" said Curv Imaging's Sigal. "They wonder how it is done, what it cost, and how long it takes to produce. After my reply to their questions, they are very interested."

Multilayer imaging is a trending technology that will continue to develop in sophistication and in the types of applications it can accommodate. At Screen USA, we have seen significant growth in the number of wide-format providers that have implemented units that have the multilayer capabilities. The current users have moved into a number of large retail and corporate accounts with a variety of projects. They have a jump on the competition and should anticipate a number of prosperous years in terms of sales growth and profitability.

Scott Bucholtz is a Digital Print Solutions Manager for Screen USA with more than 30 years of experience in the graphic communications industry. He works closely with companies looking to implement new and disruptive inkjet technologies because "what brought print service providers to where they are today is no longer sufficient to keep them there."

Printing Industries of America to Exhibit at GRAPH EXPO 14

September 28–October 1

McCormick Place › Chicago, IL

Visit us at booth #3667. Get all the details at www.printing.org/graphexpo.