

PART 10: LIQUID LAMINATION - a growing opportunity

This tenth article is designed to open people's minds to the often overlooked finishing processes of liquid lamination. This application is gaining momentum as it tracks printer technology and its mainstream adoption of solvent-based systems.

by Mick Budd

What is liquid lamination?

Conventional finishing techniques demand the use of a filmic solution to enhance and protect images. With liquid lamination the same results are achievable using urethane-based or UV curable lacquers. These coatings provide protection and longevity for digital images and can be matched to the application. For example, a short-term outdoor banner (up to three-months outdoor) could be finished using a lightweight 7µm economy coating. At the other end of the scale, a truck side-curtain would need a heavyweight 32µm high quality coat, often with a five-year warranty.

While these liquids are primarily targeted at protection they can also deliver substantial aesthetic benefits such as: increased contrast/depth; smooth uniform gloss/matte appearance; and appreciable improvement in colour vibrancy. All these factors add up to a significant increase in the perceived quality of the finished product.

Coating technologies

Liquid laminators fall into three basic categories. Entry-level, small format machines are simple, semi-automatic or manual systems. These may be desktop or floor standing and deliver a basic lightweight liquid coat. The AquaSeal sign coater is an example.

Mid-range (up to 60in) automated units are mainly roll-to-roll, dry-to-dry machines which have the capability of delivering high quality, heavyweight coatings for applications including warranted truck curtains, yet remain affordable. The AquaSeal AS1600 falls into this category.

High-end machines (up to 5m) are automated, high specification, liquid delivery systems designed to meet the requirements of the growing super-wide printer market. One of the latest machines in this category is the AquaSeal SW3300.

All the above categories employ three basic delivery methods: Meyer bar coating, gravure coating or spray coating. All are designed to apply a measured weight of liquid to a variety of substrates.

The most popular models at present are roll-to-roll machines. These are designed to meet the demands

of high volume printers producing long runs of digital print for outdoor applications. The AquaSeal SW3300 falls in this category and features new methods for controlling the operating parameters to ease use and reduce waste.

Liquid technology

Regarding liquid technologies the two options are water-based and UV curable lacquers. Water-based lacquers, such as AquaSeal, are urethane based and formulated with a low Volatile Organic Compound (VOC) content. This makes them non-hazardous and user friendly. They are cured using infrared heaters and are widely accepted in the market by equipment and substrate manufacturers for warranted solutions. A benefit of infrared cured liquids is a small laminator footprint.

UV cured lacquer employs a frequency matched UV light source to cure the coat. An example is Accu-cure liquid from Neschen Accutech. Ultra violet lacquers do not cure until exposed to high intensity UV light, thus reducing coating unit cleaning regimes: sometimes to once a week.

Business benefits

The obvious benefits of liquid lamination are enhanced aesthetics, increased longevity and easy cleaning. If applied with a liquid laminator the process is clean, quick, low cost and low waste, all combining to improve profitability when compared with manually applied coatings. Liquid lamination can help printers protect indoor and outdoor banner displays, billboards, fleet graphics, truck curtains and building signage. Users can confidently extend the range and quality of customer applications and enjoy the benefit of additional revenue generated through effective image finishing.

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A truck side-curtain is a classic application for a heavyweight 32µm high quality coat

