Overview

Until recently, creating protected label graphics for the durables market required converters to use two rolls of base material — a laminate and an overlaminate, or transfer tape. This approach is effective in protecting the printing but is not necessarily efficient.

As the industry leader in developing pressure-sensitive packaging components, Avery Dennison has helped spearhead innovation in label technologies to offer an alternative solution: the TurnLock™ Laminating System.

Turnlock is the first one-roll, self-laminating system for durable label graphics. It uses a patent-pending technology to place printing under the label’s surface, creating a built-in protective layer. By bringing printing and graphics “sub-surface,” the Turnlock system eliminates the need for a label overlaminate, allowing converters to produce high-quality, protected label graphics using just one roll of film.

Getting started

Converters using Turnlock for the first time, or that are new to the sub-surface method of printing, will immediately see the benefits of using this technology. It’s important to note that TurnLock uses:

- One roll of material instead of two
- Standard printing and converting processes
- Standard converting equipment
- A turn bar

While each press, process and application for using Turnlock is unique, the system is relatively simple to implement and use.
Here is a brief guide for how to use the Turnlock laminating system to create protected label graphics for durable applications.

**Step 1: Install the turn bar**
Turnlock requires a turn bar to be mounted between the converter’s last print station and first die station. Many converters will already have this equipment, but if not, they will need to purchase a turnbar to use Turnlock. Another option is to install the turn bar above or below the press deck.

**Step 2: Web the press**
Once the turn bar is installed, the converter can begin webbing the press as normal, making sure to include the turn bar and corona treater — if appropriate — in the web path. The converter should web the press completely from unwind to rewind, running it for approximately 100 feet.

**Step 3: Reverse printing**
After unwinding the full construction, the converter should allow the web tension to stabilize while working to center the web in the press. The web will now pass through the various print stations.

Another key difference in using TurnLock is that inks should be set up in reverse order — instead of light to dark colors, use dark to light. The images and text will be reverse printed on the single roll of film facestock.

**Step 4: Delamination**
When the web tension is stabilized, converters can start to delaminate the paper liner and adhesive from the laminate construction. This will leave the film’s adhesive exposed. Next, converters need to web the exposed adhesive liner toward the lower web path, with the printed film facestock facing upward, toward the turn bar.

**Step 5: Turn bar**
At this point, the printed web will pass through the turn bar. The film facestock should be flipped so that it is exiting the turn bar printed side down. The reverse print should now be in a positive orientation.

**Step 6: Relamination**
The final step is to relaminate the flipped web to the exposed adhesive liner. This can be done at the nip in the first die station. While the two webs realign with each other, the converter should idle the press and use either a silicone spray or a sacrificial material to cover the exposed adhesive. It may be necessary to alter the web path to equalize the tension of the two webs. Afterward, the converter can die cut the web as normal.

**Troubleshooting**
The Turnlock Laminating System offers converters an efficient, easy-to-use approach for printing durable label graphics, using almost all standard print techniques and equipment.

The general guidelines and web path provided above demonstrate this simple process of implementing and using the TurnLock Laminating System. However, because most presses are unique, converters using Turnlock may need to make adjustments to find the right path for delamination and relamination.

For more information about the TurnLock™ Laminating System, visit label.averydennison.com.

— Keith Gliesman Regional Technical Manager

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