

# FLEXible CONVERTER

A NEWSLETTER DEDICATED TO THE SUCCESS OF FLEXCON CUSTOMERS

## New Technology and Innovation Center – Building Today for Tomorrow

FLEXcon has always fostered a culture of curiosity and a drive to find new solutions, not only for today's challenges, but for tomorrow's as well. We are pleased to announce construction of a new Technology and Innovation Center at our headquarters in Spencer, MA. This two-story, 20,000 square foot facility will allow our laboratory functions and technical specialists to utilize this state-of-the-art Technology and Innovation Center to explore new ways to improve our existing

products and develop solutions that will soon be needed by tomorrow's new and fast-growing industries.

We are very excited that our graphics and label business customers will continue to benefit as a result of this center, but it will also allow us to broaden our capabilities in emerging technologies in fields such as photovoltaic,

medical, flexible electronic applications and nanotechnology. The unique requirements and specifications arising from these new industries will demand the best from our technical specialists, and FLEXcon, once again, is poised to meet those challenges.

The technology we rely on today is soon replaced by newer versions. We continue to bring you the best possible products and are able to quickly commercialize new materials and bring them to market. This means you can offer your customers the best possible products and the most varied portfolio you can, all designed to grow your bottom line and your business.

FLEXcon provides the expertise and the know-how to develop new and better solutions. Our team's commitment to excellence, our hard work, and our dedication to quality will always be paramount in seeking better ways to meet your needs. Through our drive for innovation and soon, with our new state-of-the-art Technology and Innovation Center, we will continue to strengthen our relationships with you and help you grow. It is through curiosity, collaboration and dedication that, together, we are able to find answers to those difficult problems and applications and help you grow and prosper – not only today, but for the long run.

Neil McDonough  
President and CEO

## FLEXcon's NEW THERMLfilm® HT™ Can Really Take the Heat!

With over fifty five years of developing the right materials to help meet your goals, large or small, we at FLEXcon have dedicated our expertise and experience to meeting those challenges by consistently providing solutions to your performance and aesthetic needs. Our new THERMLfilm® HT™ high-performance films are heat resistant, printable polyimide films ideal for use in the PCB (printed circuit board) industry. They are available worldwide to manufacturers that need high-density barcode and alphanumeric PCB labels, including military contractors and manufacturers of electronics, the aerospace and automotive industries.



THERMLfilm HT offers a super-smooth topcoat for printability up to 600 dpi and provides consistent ANSI scannability.

meet the challenges of high temperatures, abrasions and harsh chemicals. THERMLfilm® HT™ endures intermittent heat up to 750° F (398°C) and has undergone in-line durability testing – seven passes through the wash cycle with VIGON® A 201\* pursuant to MIL-STD-202G, Notice 12 and MIL-STD-883E, Notice 4. Results showed no surface abrasion, erosion or lack of adhesion.

Other problems for labeling can also occur once printed circuit boards are operational because they can generate high degrees of heat while in use. Labels must be able to retain their integrity for the life of the circuit board or valuable warranty information as to manufacturer and other important identifying data may be lost. Also, the miniaturization of electronic products continues to force printed circuit board manufacturers to smaller and smaller boards that are more densely packed with increased electronic capabilities. While this may prove to be a boon for consumers, it is a challenge for label suppliers. These smaller, tightly packed boards with increased capabilities decrease the amount of 'real estate' a label gets and increases the amount of heat generated in the smaller space.

### Printability, Superior Adhesion and Heat Resistance Are Key

FLEXcon's new THERMLfilm® HT™ is designed specifically for high-density bar codes, dot matrix codes and alphanumeric identification of printed circuit boards. The topcoat has a static dissipating property that minimizes the risk of print voids and its super-smooth surface allows for optimum printability of up to 600 dpi for consistent ANSI (American National Standards Institute) scanning.



THERMLfilm HT polyimide films withstand the fluctuating temperatures, abrasion and chemicals inherent in PCB manufacturing.

Heat resistance is also an important factor in choosing

materials for printed circuit board labels. All THERMLfilm products are tested to ensure they will remain adhered during the manufacturing process.

In all phases of PCB manufacturing, make sure that critical data is not lost due to label failure. FLEXcon's THERMLfilm® HT™ is a new advanced line of high-temperature polyimide films that will withstand the fluctuating temperatures, abrasions and chemicals inherent in the PCB manufacturing process – while providing optimum printability for high-density bar codes and crucial alphanumeric information.

Contact your FLEXcon Sales Representative today for more information on THERMLfilm® HT™ or any of our other products.

\* VIGON® A 201 is a registered trademark of ZESTRON Corporation.

### World Wide Distribution Means Global Satisfaction

We manufacture the same exact products in the US, Europe and Asia, so you get the same great product no matter where you place your order. Our THERMLfilm® HT™ polyimide films come in 1 and 2 mil formats held in stock on our 50lb. glassine liner and are available in Quick-ship from our Spencer, MA headquarters and our facilities in Weesp, Holland, Shanghai and Singapore. A 1.5 mil (37 micron) polyester liner and a 50lb. (80 GSM) SCK (KRAFT) liner can be made-to-order for specific applications and dispensing requirements. Four inch pre-slit rolls are available in the US.

Labeling requirements for the printed circuit board manufacturing process are, to say the least, rigorous. The manufacturing process for printed circuit boards sometimes varies from maker to maker, but the basics remain the same. With surface mount technology, for example, each component makes contact with the printed circuits directly with small 'legs'. Then the solder paste (made up of solder, glue and flux) is applied at the point of contact. This holds the components in place. Perhaps the most grueling test for a label is the reflow step which comes next. After the components are soldered to the board, the unit is passed through a reflow process which reheats and melts the solder paste to ensure the connection. The flux residue is then cleaned with solvents.

### Tested and Approved

Label materials must be able to stand up to the fluctuations of extremely high heat, several washing steps with abrasive chemicals and detergents involved in the manufacture of PCBs, and still retain superior adhesion and readability. FLEXcon's THERMLfilm® HT™ meets these demands. Our 1 or 2 mil white polyimide films

### In This Winter Issue

President's Message .....	1
NEW THERMLfilm® HT™ .....	1
FLEXcon's 2012 Calendar .....	2
Reduce-Reuse-Recycle and Re-think .....	2
People in the News.....	3
Films, Functions & Opportunities Seminar .....	3
Film Review .....	4
TechTips .....	5-6
International News.....	5



# Happy New Year from All of Us at FLEXcon!

Once again, FLEXcon is pleased to present our new 2012 pressure-sensitive HP Indigo printed Calendar (and quick-conversion guide). As an example of our capabilities, this year we are featuring our FLEXmark® floor art™ Floor Advertising System now available in full floor coverage.

Our 2012 calendar, with a high-gloss clear vinyl base film is printable via UV screen, UV inkjet and UV offset. In addition, when topcoated, it is also printable via HP Indigo. FLEXmark floor art™ 6280DG, is underlaminated with our bright brushed stainless silver polyester FLEXmark floor art™ DFMM 100 BBStainless V-32 100 Poly H-9 V-133 94 PRT PFW to provide a high-end look and feel. The base film is reverse printed, resists tearing and abrasion and is protected by a clear premask. The premask provides rigidity during installation and protects the film from dirt and abrasion. Once the premask is removed, the results are amazing, sharp vibrant three-dimensional images that stand up to the wear and tear of a retail store for the length of the promotional campaign.

The underlamine is also available in clear (6615), silver (6625) and white (6600) and the double-faced underlamine's permanent adhesive bonds well to the reverse printed, high-gloss vinyl. The removable adhesive is applied to the floor surface for clean removability after the campaign has ended.

If connecting with shoppers, increasing the value of the shopping experience and ultimately driving sales lift is something that your customers are looking to do, our FLEXmark® floor art™ Floor Advertising System is the answer. Create that dramatic effect for that promotional campaign that requires more than just a traditional small-format floor advertisement.

FLEXcon's FLEXmark® floor art™ Floor Advertising System is designed for indoor floor surfaces and FLEXcon's innovative, full floor coverage technology brings the aisle to life.

For slip resistance we recommend that the graphics are waxed using an ASTM D 2047 certified wax. For more information, contact your Sales or Business Team Representative.



## Reduce - Reuse - Recycle ... and Re-Think!

As a company dedicated to finding leaner and 'greener' ways of doing things; reducing our carbon footprint as much as possible and being a more responsible manufacturer with an eye toward sustainability, FLEXcon agrees with the Environmental Protection Agency's 'mantra' of "Reduce - Reuse - Recycle". FLEXcon has adopted these policies in many areas of the company in an effort to be a responsible member of the community. But, after examining the many different areas of our manufacturing processes, FLEXcon added another 'r' to that chant - re-think!

As a manufacturer, FLEXcon receives quite a bit of materials that are used to produce our full line of quality pressure-sensitive films and adhesive products. Since FLEXcon buys only the best products from our suppliers, that material comes carefully packed for its trip to our facilities. After unpacking, storing, and the eventual transferring of that material from our suppliers into FLEXcon's varied line of products, the leftover packaging was, in some instances, recycled or, more often than not, discarded. There had to be a better way, not only from an ecological standpoint, but from an economical point of view as well ... and there was!

### Save Money - Save Space!

Once the material from our suppliers is unwrapped, the packaging is sorted, numbered and inspected. Pallets are sorted as to condition, size and place of origin and returned to the suppliers, who then use them in their next shipments to FLEXcon. Cores, once discarded, are now sent to our in-house recycling program for cleaning and sizing. Used in all steps of production (except finishing), these cores are now reused several times before being disposed of. FLEXcon's maintenance department inspects, cleans, and in some cases, re-sizes cores and end-caps before returning them to the production lines. Everything is also numbered. Karen Miarecki, Special Services Representative, tracks all this material as part of FLEXcon's Alternate Waste Management System, so that cost outlay and cost savings can be compared and analyzed, excess waste generation can be trimmed and controlled, and expenditures can be reduced, if possible.

There are not only programs for pallets, for cores, end-caps and roll plugs, but there are in-house programs for batteries, toner



cartridges, unusable printers and computers. Office materials such as paper of all kinds are sorted and recycled. David Lachapelle, Inventory and Materials Manager of FLEXcon, says that "the original number of recycling programs that FLEXcon had was only 2 - now they number over 33".

At this point in the program, FLEXcon recycles or reuses "over 56 percent of the company's solid waste in one form or another" says Lachapelle. While some of it may eventually be discarded, "We'll get six or seven uses out of it before that happens" he proudly adds.

### A Pallet-able Program to Fit Your Needs

In addition to these recycling efforts, FLEXcon also runs a Customer Packaging Return recycling program. You may not have the room to store pallets, end-caps and the like, or may not have on site capabilities to assist in resizing materials to fit your specific needs. You probably also know that some buy-back programs are either too cumbersome or involved to participate in, or due to a lower volume in your recyclable material, it may not be economically viable.

That's why FLEXcon started the Customer Package Return Program. FLEXcon will accept pallets, endplates, core protectors, h-channels, corrugated cradles and core plugs from our customers and we want them to participate in this program. Dave Lachapelle or Karen Miarecki would be happy to discuss this program with you to decide the most efficient and profitable way to handle the packaging returns.

They'll also be happy to discuss in greater detail FLEXcon's in-house recycling programs and how some of our best practices may be applied and adapted to your business. Dave and Karen can also let you know who, in your area, might also recycle some of the other difficult to dispose of materials inherent in our business. After all, recycling as much as possible benefits you, FLEXcon and the environment.

Call your FLEXcon Sales Representative or contact FLEXcon at 1-508-885-8200 for David Lachapelle (Ext. 8254) or Karen Miarecki (Ext. 8418).



# People in the News



**James Casey, Vice President, Technology,** spoke at the 2011 TLMI (Tag and Label Manufacturer's Institute)

Conference in Chicago IL this past September 6 – 8th, 2011. Jim joined the session on "The Bottom Line on Substrates", alongside Todd Schweigert of Loparex, LLC, Christopher Urheim of The Dow Chemical Company, and Dave Rosenthal of New Page Specialty Papers. Jim offered an overview of what affects the costs of laminate raw materials such as facestock, adhesive, silicone, and liner. He also explored the impacts of supply and quality on pricing and provided an understanding of the trends that drive raw material costs. A review of the available raw materials and their supply chain was discussed.



**Ken Koldan, New Business Development Manager, Product Identification Business Team,** was recently

re-elected to AIM North America's eight-member Board of Directors. Ken was originally elected in March of 2011. AIM (The Association of Automatic Identification and Mobility) is the industry's trade association and educational resources to assist resellers, systems integrators, solutions providers, manufacturers, and distributors in growing their Automatic Identification and Mobility sales. Koldan, who joined FLEXcon in 2008, provides expertise and product solutions to design engineers and economic buyers within the consumer electronics, HVAC, security, and appliance markets. He has also authored technical articles on choosing the right pressure-sensitive film for successful UID marking and building a sound strategy for product and brand security.



**Jacqueline Moore has been named to lead a newly created European Business Unit** dedicated to FLEXcon's

emerging growth segments including manufacturers of Photovoltaic Modules and Electronic Displays. She will be directing its operations from FLEXcon's facilities in Glenrothes, Scotland. Jacqui will oversee European sales, marketing, technical and customer service functions supporting customers in these growth segments for FLEXcon. She has a wealth of experience including having established and led sales development for 3 separate businesses; creating and successfully launching new product lines for a group of textile companies and managing a 500 employee business operation. Most recently for FLEXcon, she has streamlined the Human Resources Department in Europe, and enhanced our position in the areas of recruitment along with training and developing talent in Europe and Asia.



**Eric Barker, Applications Development Engineer, Flexible Electronics,** spoke at the SGIA (Specialty

Graphics and Imaging Association) Printed Electronics and Membrane Switch Exposition this past June. Barker said advanced technology has spawned new electronic materials capable of roll-to-roll manufacture, but needing much greater protection from moisture, vapor and oxygen. Options are compared to achieve suitable barrier levels for different types of devices and materials manufactured via either roll-to-roll or roll-to-sheet processes. This leads to the best selection from the suitable options for different applications.



**Lindsay Censabella, promoted to Senior Films Technology Engineer in the Web-Based Technology**

**Production Development Lab.** Lindsay will be heading up the team that provides technical support to all aspects of our customer's business. She will also continue to develop and qualify Monolayer Olefin film designs, shrinkable PVC alternatives and "green" programs. Lindsay is very involved with FLEXcon Manufacturing and our suppliers, and will continue to improve existing products as well as designing new ones.



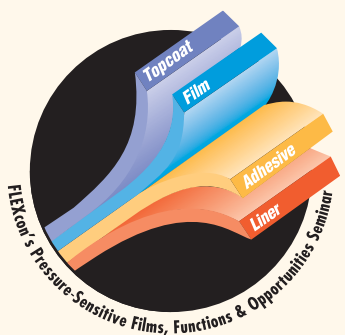
**Mike Merwin, Marketing Development Specialist, LSE Bonding,** presented a paper to the Society of Plastic

Engineers TPO Conference in Detroit, MI, on Paint Protection Films – Oct. 2 – 5, 2011. Mike was featured in two sessions – the Application Session and the Surface Enhancement Session. The presentation outlines the ability of Urethane Paint Protections Films to protect painted surfaces of automobiles and other vehicles against stone and other small road debris impingement.



**Edmee Ram, appointed to the position of Customer Service Supervisor at FLEXcon's Weesp, Holland facility.** She

will also serve as a Customer Service Advisor within the German territory and provide support and assistance to the Customer Service Team.



## Pressure-Sensitive Films, Functions and Opportunities Seminars a Big Success!

FLEXcon's Pressure-Sensitive Films, Functions and Opportunities Seminar, held this past October at FLEXcon's Spencer, MA, campus, attracted 66 customers to this year's event. With a new format to choose from, customers could complete the 2 ½ day program or a 1 ½ day session with a marketing focus or a technical focus. Our technical and marketing specialists, in



*It was a great turnout for this year's Pressure-Sensitive Films, Functions and Opportunities Seminar*

addition to giving presentations on marketing opportunities, applications and material components and selection, offered hands-on workshops and a panel discussion. Tours of our ISO 9001-2008 labs and manufacturing facilities were both part of this informative two and a half day event. Watch your e-mails and upcoming issues of the CONVERTER for information on our next Pressure-Sensitive Films, Functions and Opportunities Seminar and we hope to see you there!

# Film Review

## FLEXcon's new products cover all areas of the retail environment

Ideal for the graphics community, brand managers, marketers, advertisers and PDAA installers, FLEXcon's new retail products bring

solutions to enhancing a retail space, and in some cases, a more environmentally friendly approach as well...

### Wall Space Speaks to Shoppers

FLEXcon's 'greener' WALLdeco™ non-vinyl products transform retail wall space and are designed for short-term, interior large-format (life-size) applications as well as small-format contour cut wall graphic decals. FLEXcon's WALLdeco 6714 (4 mil) and 6710 (6 mil) polyolefin, and the WALLdeco 6772 (6 mil) fabric, all feature microsphere repositionable,

removable adhesive. These VBS Better products apply well to flat, smooth painted non-vinyl wall boards. Retailers can transform their space to create an ideal shopping atmosphere for consumers.

**B**etter



### A Window of Opportunity to Feature Brand Identity

For sharp, eye-catching window graphics, FLEXcon's new WINDOWdeco™ super clear, opaque and translucent window films offer a variety of benefits for interior or exterior mounted window graphics in retail and architectural settings. Available as a 2 mil super clear polyester with a removable adhesive (WINDOWdeco 6525), a 2 mil super clear polyester with a permanent adhesive (WINDOWdeco 6535), there are also two vinyl versions, a 6 mil white with low-tack removable adhesive (WINDOWdeco 6545) or a 6 mil white backlit vinyl

with a low-tack removable adhesive. These VBS Better products bring a greater level of vision and transparency and can reduce heat, glare, control light and provide a level of privacy. The new 6 mil opaque white vinyl offers greater durability and ease of installation.

**B**etter



### FDA Indirect Food Compliant COUNTERdeco™

As more quick-serve restaurants nationwide are specifying materials that are FDA indirect food compliant, FLEXcon fills that need now with COUNTERdeco™, the new 'greener' non-vinyl countertop advertising system. It's FDA indirect food compliant and available with clear matte polyolefin (COUNTERdeco OP6325) or clear polyester (COUNTERdeco OM6327) overlaminates. A VBS Better offering, COUNTERdeco 6322, 4 mil white polyolefin (non-vinyl 'greener') also has a low-tack removable adhesive

and lay-flat liner and, along with our other at-retail and graphic window, wall and floor products, allows FLEXcon to offer a complete system for advertisers, brand owners and retailers to truly create the environment to meet their needs and, at the same time, keep a smaller carbon footprint with our many 'greener' products.

**B**etter



### FLEXmark® BILBRD SWVG Shines as Display Choice

When a gloss appearance is needed in a retail, P-O-P, or tradeshow display, FLEXcon's FLEXmark® BILBRD SWVG is the preferred choice. SWVG (a VBS Value product) eliminates the need to over laminate matte white vinyl to achieve a gloss, or 'white aluminum' look. FLEXmark® BILBRD SWVG, a 3.0 mil standard gloss white vinyl is backed with a layflat release liner ideal for roll-to-sheet and sheet-form converting. It provides good resistance to scuffing, tearing and abrasion

while the general purpose permanent adhesive adheres well to high- and low-energy plastics, foam board and metal. It's available in Quick-Ship and Wide-Format Pre-Slit inventory.

Be sure to contact your Sales or Business Team representative for information on all of FLEXcon's retail enhancing products.

**V**alue



### JETbond® Overlaminates Provide Value, Protection and Finish

If your customer's needs include a value-priced, solid performing general purpose over laminate, FLEXcon introduces JETbond® 43108 (Clear Matte) and 44158 (Frosty Clear). These VBS Value additions to our JETbond® line are ideal for at-retail, P-O-P and tradeshow graphics when protection and finish (either clear matte or frosty) matter.

JETbond® 3.5 mil flexible clear matte (43108) and frosty clear (44158) vinyl are coated with a general purpose

adhesive that bonds well to printed base surfaces and both are backed with a 42 lb. one-sided polycoated white Kraft release liner that results in good adhesive clarity. Both are available in Quick-Ship and Wide-Format Pre-Slit inventory for fast delivery.

Contact your Sales or Business Team representative for information on JETbond®.

**V**alue

# TechTips



By Rick Harris (left), Product Manager, Product Branding Business Team and Scott Fairbanks, Senior Product Development Chemist

## Release Liners: Backing Up Pressure-Sensitive Films and Adhesives Success

Behind every successful pressure-sensitive film or adhesive is a carefully chosen liner. Although often forgotten after being peeled away and discarded, a liner is truly the vehicle that transports a substrate through the converting process and to an end use. Printers should carefully select a liner based on their converting capabilities as well as their end-use requirements. The liner serves as the backbone of the pressure-sensitive construction. A liner receives and protects the adhesive in a pressure-sensitive construction and supports the adhesive through the curing process. In some cases, it provides the layflat characteristics that prevent curling. At other times, it is the anvil against which a die cut either succeeds or fails. A well-chosen liner can help reduce web breaks, minimizing down time and improving press efficiencies. It can provide improved registration and have a dramatic effect on how the label dispenses.

Therefore, matching your specific needs to a particular liner is a critical part of the product selection process. By assessing all functional criteria, you can help ensure fewer problems while converting.

### Meeting Specific Needs with Specific Liners

Release liners come in two major varieties: paper and film. Paper-based liners enjoy roughly 85% of the release liner market these days, but film is growing fast. Each liner material has its place. The best choice can only be determined by carefully analyzing the converter's equipment needs and the end use of the application. Dozens of variables must be considered, each of which has an impact on the ultimate success of the product. A film-based liner may be the better choice if such factors as tensile strength, caliper consistency (for precise die cutting), clarity (for accurate optical sensing), and dimensional stability are key. Paper-based liners may be the better choice where such factors as backside printability, thermal stability, low static, stiffness, and better tracking on press are paramount. Let's assess the major categories of liners and where they perform best.



**Kraft:** This densified, bleached paper liner is a standard for roll form applications. It features a good, hard die cutting base and good caliper consistency. It is backside printable, and is ideal for white or clear

substrates where adhesive clarity is not critical. It also offers good friction for improved traction.

**Clay-coated:** The single-coated version is often used for roll-to-sheet converting. This coated paper liner offers some resistance to moisture, enhancing its layflat characteristics. A two-sided clay coated liner may be used for sheet applications, due to its enhanced level of layflat.



**Polycoated:** These are Kraft liners with polyethylene or polypropylene applied between the release chemistry and base paper. They provide a smooth cutting surface and, as a result, provide a good die cutting base. Polyolefin coatings in particular allow for deeper diecutting. Choosing between the two is mostly a function of whether you are converting roll- or sheet-form products.

**Roll:** In this case, FLEXcon's 44PP liner is a strong choice. This liner offers excellent adhesive wet-out characteristics, allowing for good adhesive clarity, which is necessary when trying to achieve the no-label-look. Polycoated on one side, it is backside printable.

**Sheet:** Here, the 90 PFW dominates. This liner is polycoated on both sides and exhibits excellent moisture resistance and layflat characteristics as well as superior dimensional stability.

**Polyester:** A polyester liner is ideal for high-speed roll-form converting. It provides excellent surface smoothness. This allows for good adhesive wet out, which is ideal for achieving no-label-look graphics. In addition, it is good for overlaminating where clarity is critical, such as over dark colors and metal surfaces, where any imperfections will show up vividly. Polyester also offers excellent dimensional stability and mechanical strength and is ideal for doming applications. It is tear resistant, resulting in fewer on-press web breaks. It is also a superior die cutting base. One of its few drawbacks is its lack of backside printability.

### Looking at Layflat

One of the first questions when considering liner choice has to do with your choice of converting processes. It is important to know whether the end-use requires roll-to-roll, roll-to-sheet, or sheet converting. A thinner, roll-form liner can provide some economies. However, if it is used with a

(Continued on back page)



## INTERNATIONAL NEWS

### It's Gold Again for Glenrothes!

For the third year in a row, FLEXcon Europe in Glenrothes, Scotland, has been awarded the Gold Award from the Royal Society for the Prevention of Accidents (RoSPA). The award itself was presented September 22, 2011, in Glasgow, Scotland.

This prestigious honor is the result of many hours of dedication and hard work on the part of the employees and supervisors at that facility. Darwin Irish, FLEXcon's Director, Risk Management, says the safety culture among the employees has been steadily growing and that employee involvement at all levels is the driving force that led to this impressive 'triple' win. That strong safety culture is one of the stringent criteria that needed to be met before the awards were handed out.

By winning a RoSPA Gold Award, winners prove that they have achieved a very high level of performance, demonstrating well developed occupational health and safety management systems and culture, outstanding control of risk and very low levels of error, harm or loss. Reaching this milestone took a lot of cooperation and collaboration – in other words, teamwork! The Glenrothes Safety Circle, which meets monthly, coordinated the goals that needed to be met for this important safety program recognition.

While maintaining top-notch safety protocols and keeping accidents and loss at a minimum is reward enough, there is another goal a bit further down the road. Winning the Gold Award five years in a row

will result in the facility winning the ultimate Manufacturing Sector Award, the premier safety award in the UK.



(Tech Tips, continued from page 5)

sheet form application that requires that the decal lay flat, unwanted curl may result. This can be a critical component when considering large format applications, such as bus wraps or large wall graphics. However, smaller applications may require superior layflat characteristics as well. For example, doming applications often utilize layflat liners to help ensure that the doming polyurethane sets up evenly. Any variation in the flatness can result in an uneven dome. In these cases, curl can have a dramatic, negative effect on the product. To ensure good layflat characteristics, converters may consider clay coated or polycoated papers. FLEXcon's 90 PFW polycoated liner is the industry standard in terms of providing superior layflat. The coating on these paper liners helps to seal out moisture, virtually eliminating the likelihood of any undesirable thermal expansion. Some higher caliper polyester liners, which do not absorb moisture, may also be selected because of these characteristics.

### Trouble With Tracking?

Proper liner selection can influence print registration. New polyester release liners have been designed to provide superior on-press performance for tight registration graphics. For example, FLEXcon's TRACrite™ liner utilizes a process that provides a specially formulated non-slip surface. This means reduced waste, and overall improved press efficiencies. In addition, these polyester liners are often offered in multiple gauges to meet specific tooling requirements. The lower gauges achieve a high label count per roll which increases efficiencies in dispensing.

However, printers who regularly run paper liners sometimes experience tracking difficulties when first working with a polyester release liner. This may happen because of uneven wear of the nip points. The uneven wear itself is often a result of running paper liners, which offer an inconsistent surface (when compared with polyester). Printers may find they need to adjust their settings or modify the press.

When it comes to tracking issues, coatings may also come into play. For example, a polycoated liner may be somewhat slippery when compared with its Kraft counterpart. This can result in tracking challenges. A friction coating may be applied to the liner to help provide better "grip" as the liner carries the application through the converting process.

### Backside Printing Options

Certain liners also provide printers with a place for instructions or other messages. In this case, coated and uncoated Kraft liners have the advantage over hard-to-print polyester liners. For example, a backside-printed liner on a floor advertising product may provide instructions on preparing the floor surface, application instructions, and cleaning suggestions. For promotional products such as bumper stickers or children's decals, an enterprising printer could offer to transform the liner into a coupon or other "savable" item that keeps a message in the consumer's mind. As with tracking, there are some coating options when it comes to printing on a polyester liner. An ink receptive coating can be applied to the liner that will not diminish its other valuable characteristics.

### Considering Dispensing

There is considerable variation among liners when it comes to dispensability. Recent advancements in silicone release liners have had a significant impact on dispensing. These new products offer lower release thresholds. This minimizes the release build and variation, and ensures more consistent dispensing. The ratio of the thickness of the substrate to the thickness of the liner can also affect dispensing.

WINTER 2011

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A thinner substrate will dispense better off of a thinner liner. However, this requires a higher degree of tensile strength (the degree to which a material stretches) to insure that the liner can pull the product through the converting process without ripping or tearing. A thinner liner with a lower level of tensile strength may have a tendency to stretch or break.

### Regarding Release

The tightness of a liner's release can also play a critical role in its selection for an application. A wide range of release levels can be achieved, allowing you to tailor products for everything from hand dispensing to high-speed automatic matrix stripping and dispensing. In general, lower release levels are obtainable with film liners due to reduced surface area, thus minimizing adhesive contact. The adhesive itself also plays a role. For example, if you are using a low-tack adhesive, you may get better results with a tighter release liner. In this case, a free release liner may allow the labels to come off with the matrix when it is stripped. Here, the tighter release liner can result in enhanced converting efficiencies.

### Dealing With Diecutting

The best die cutting bases have the highest apparent densities. In essence, the liner serves as a diecutting base. A liner with greater variations in caliper creates more challenges than a liner with less caliper variation. Polyester liners provide caliper consistency, smoothness, strength, and dimensional stability, making them an ideal diecutting base, and resulting in fewer web breaks. Polycoated Kraft liners (papers with polyethylene or polypropylene applied between the release chemistry and base paper) also provide a smooth cutting surface, and can therefore lead to improved diecutting. A clay-coated paper liner offers

better smoothness than plain papers. Densified Kraft paper liners may also be used. Although less consistent in terms of smoothness and caliper than either coated or polyester liners, densified paper liners are generally more economical in terms of per unit costs than polyester or even polycoated/clay-coated papers.

### Opting for Overlaminates

When it comes to liners for overlaminates, the main issue is an aesthetic one (i.e., smoothness). Converters need not worry about diecutting or layflat characteristics, and can instead focus on appearances. Therefore, a polyester or polycoated liner may be the best choice here. Both offer a smooth surface, providing an excellent mirror image in the adhesive when the liner is pulled away. An even coating of adhesive is critical when trying to achieve good wet out over graphics, such as when used with dark colors or metallized films. Likewise, laminating adhesives and other double-faced products require smooth liners for even adhesive distribution.

### Making the Best Choice

With so many liner options available, choosing the right one for your application can be a challenge. Understanding the converting and end-use requirements will help simplify the selection process. FLEXcon offers the widest range of liners in the industry and can work with you to match the right liner to your specific needs.

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