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HOW TO GUIDE

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RECYCLED RESINS ARE REQUIRED TO
REACH GLOBAL INDUSTRY TARGETS

10

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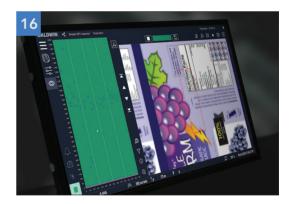
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Taking Part



Lori Pisano Publisher

There is so much we could talk about that has disrupted how we normally go about doing business – managing COVID-19 in the workplace, labor shortages nationwide and certainly lots of supply chain disruptions that many of you are dealing with every day. Despite all these challenges, I have observed an upbeat attitude within our industry. There seems to be an underlying sense of resiliency among the professionals in our world. While they continue to successfully navigate roadblocks and field curve balls, they are also demonstrating impressive leadership and forward thinking.

This fall, I have attended both Pack Expo and ICEC + AIMCAL's R2R conferences. It's been exciting to see the new product innovations along with improvements to current products and operations as they come to fruition. One notable common theme we have noticed is innovation centered on the push for eco-friendly products. It's great to see how companies in our industry are pressing forward with solutions to help their customers meet goals in this area.

After attending Pack Expo and ICEC + AIMCAL's R2R conferences, it is clear that attendance at events is difficult to predict at the moment but just the fact that lots of people got on an airplane, spent a few days away from home at a trade show, engaged with old friends and saw some new prospects, that is all a positive experience we no longer take for granted. One thing is for sure, this is all a good sign and headed in the direction we have been waiting for so long, people are ready to engage in person, whether or not it's a masked event.

As suppliers and manufacturers aim to improve how they do business and how they can do their part in helping customers achieve success, *PFFC* has the same goal. Whether you are a converting supplier or a contract converter looking for resources or new customers, *PFFC* will continue to explore ways to make it easier for customers and suppliers to find solid resources and to find one another.

We look forward to seeing more of you in person in the coming months while continuing conversations that push the converting industry forward.

Thank you for all your support during this challenging time. Stay safe!

Lori Pisano lori@rdgmedia.net



A RDG Media, Inc. Publication P.O. Box 80915 Rochester, MI 48308 586.227.9344 www.pffc-online.com

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Randy Green, President & Group Publisher

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AIMCAL Holds Its Executive Leadership Conference at the NASCAR Hall of Fame

The 2022 AIMCAL Executive Leadership Conference will take place April 4-5, 2022, at the NASCAR Hall of Fame in Charlotte, NC. AIMCAL Hall of Honor inductees



will be announced and winners in the AIMCAL Product of the Year, Technology of the Year, and Sustainability Award competitions also will be honored. The full agenda will post after the first of the year. Check the AIMCAL website, www.aimcal.org, for details and a registration form.

GAA and AIMCAL Move Forward Together

With the combination of AIMCAL and the Gravure Assn. of the Americas now complete, the Gravure

AIMCAL Alliance (GAA), functions as a standing committee of AIMCAL. In one of its first actions as part of the combined organization, GAA organized a gravure

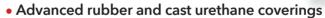


track for the AIMCAL R2R USA Conference and SPE FPD's FlexPackCon in October.

GAA retains its existing leadership: Chair Lou DeFlaviis of INX International, Co-Chair JD Harris of Fres-co System USA, Inc., and board members Rod Sosa, also of Fres-co, John Edwards of Sun Chemical, Bill Poulson of Harper Corporation of America, Dan Comerford of WRE/ColorTech, Todd Luman of Interprint, Inc., Johnny Stamey of Daetwyler Corporation, and Mandee Jones of SAUERESSIG Packaging, a Matthews International Company.

GAA promotes the growth of gravure by understanding customers' needs, demonstrating advantages of the gravure process, promoting operational efficiencies, cultivating innovation, and promoting gravure education. The Alliance collects and distributes information





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to increase industry knowledge while fostering an environment that builds relationships and a spirit of cooperation among member companies worldwide.

R2R Conference at ICEC Adds Gravure Track

Several hundred people attended the AIMCAL R2R USA Conference & SPE FPD's FlexPackCon, October 17-21, which was co-located with the ICEC at the Orange County Convention Center in Orlando, Fla, and served as its technical conference.

The multi-track program included a gravure track, organized by the Gravure AIMCAL Alliance, and sessions on flexible packaging; sustainability; metallizing; solution, extrusion and vacuum web coating; drying; laminating; web handling; batteries and flexible electronics.

Submit AIMCAL Hall of Honor Nominations

The deadline to submit nominations to the AIMCAL Hall of Honor is January 31, 2022. Nominations are

voted on and announced during the AIMCAL Executive Leadership Conference, April 4-5, 2022, in Charlotte, NC. Application forms may be found at www. aimcal.org, click on Conferences & Events.

Hybrid Converting School Course Focuses on Unwinds

A hybrid Converting School course, Unwinds: Overview & Case Studies, will be held daily from 11 a.m. to 1 p.m., January 10 - 14, 2022, with Instructor Neal Michal of Converting Expert, LLC. Michal, an authority in web handling and process design and optimization, serves as a technical advisor to AIMCAL and is a founding member and co-chair of the AIMCAL Web Handling Committee. The author of two patents and five books, Michal has trained more than 1,000 students and provided technical, problem-solving assistance to hundreds of material suppliers and converters.

Hybrid courses consist of online live daily instruction Monday through Thursday plus a private, one-on-one online meeting with the instructor during the final class on



Friday. For more information, visit the AIMCAL website, www.aimcal.org, click on Education and select Courses.

Award Program Entries Due

January 31, 2022, is the deadline for submissions to AIM-CAL's Product of the Year, Technology of the Year, and Sustainability Award competitions. A panel of industry experts judges the entries. Learn more at www.aimcal.org, click on Conference & Events and select AIMCAL Awards.

AIMCAL Membership Grows; New Program Rewards Referrals

The membership of AIMCAL continues to grow with the addition of 12 organizations during the third quarter of 2021. With three newcomers based outside North America, AIMCAL's international scope continues to expand.

To spur membership, the AIMCAL Membership Committee has created a Member Referral Program. It provides recognition for a member company referring a nonmember organization with a callout on social media and in the AIMCAL newsletter. The person making the referral receives a \$100 discount on future AIMCAL events. A credit is added to the person's AIMCAL account after the new member pays for its membership. The reward can be gifted to a customer if the member wishes to pass it on. When referring a company, please email Tim Janes, AIMCAL member outreach director, at tim@aimcal.org so your individual AIMCAL account can be credited as soon as the new member pays for its membership.

With an AIMCAL membership, each employee of the organization receives access to a range of technical resources and discounts on event registration fees. Member benefits include a profile for each employee and access to a Community Forum, plus the AIMCAL TV video library and more than 10 years of Conference Proceedings. Member organizations are listed in the AIMCAL SourceBook. Personnel from member organizations may present live webinars and participate in committees and technical training.

Learn more at www.aimcal.org, click Membership, or contact Janes at +1 803-948-9469 or tim@aimcal.org.



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FDA and EFSA Food Grade Recycled Resins are Required to Reach Global Industry Targets

By **Paula Leardini**, Senior Analyst, Plastic Recycling, The Americas & **Carolina Perujo Holland**, Analyst, Plastic Recycling

Targets set by brand-owners and regulations have been contributing to a growing demand for recycled plastics globally, particularly for use in food and beverage packaging. However, the supply of high-quality food grade recycled polymers remain limited. Challenges include, among others, low volume and quality of post-consumer waste, costly sorting and washing technologies to eliminate contaminants, and the need of approvals from governmental agencies.

Countries have their own local agencies that, among other responsibilities, control and supervise materials used in contact with food. Two central agencies widely recognised are the United States Food and Drug Administration (FDA) and the European Food Safety Authority (EFSA). Their main safety concerns are related to possible contaminants from post-consumer waste that can be harmful to human health if remained in the packaging that will be in contact with food. Any

material, including virgin polymers, must be regulated for food contact use, thus the same principle applies to recyclates.

Companies that wish to use recycled plastic for a food-contact application in the U.S. must submit a description of both waste source and recycling process, results of tests that prove the process removes potential contaminants, and a proposal of use conditions in the final application, such as temperature, type of food, and duration of the contact. A full

guidance is published on FDA's website.

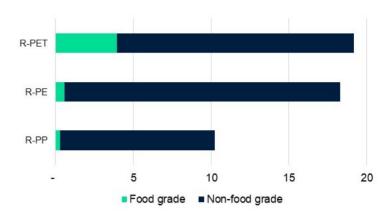
Once submitted, the FDA then evaluates each proposal, case-by-case, and provides companies with a Letter of No Objection (LNO), which is a recommendation as to whether the recycling process is likely to produce plastic that is appropriate for food-contact purposes.

The EFSA evaluation of recycling processes requires companies to prepare a dossier along with a request for authorization of the use of recycled plastics in food contact materials to one of the EU Member States' (MS) competent authorities. EFSA receives the dossier from the EU MS, evaluates it and then provides an opinion on the safety of the recycled plastic given its intended use. The EFSA opinion is then used by the EU MS to grant or reject authorization of the recycled plastic.

The dossier must follow an EFSA guidance which includes a description of the recycling process showing critical parameters such as temperature, pressure, process duration and other operative details, and the characterization of input focusing on qualification and evaluation of suppliers, origin of the feedstock, traceability, and the ability to prevent entry of non-suitable materials into the input stream. Also included are the results of challenge tests to demonstrate the decontamination efficiency of the recycling process, characterization of the end recycled plastic product, its intended application in food contact, and compliance with relevant provisions on food contact materials.

"Apart from evaluating whether the recycling process can reduce contaminants to levels that do not pose a risk to hu-

FOOD GRADE CAPACITY BY POLYMER



Source: ICIS, Recycling Supply Tracker - Mechanical, 2021

man health, EFSA also monitors whether the material changes the food composition, taste, and odour in an unacceptable way. And unlike the FDA, EFSA requires that no more than 5 percent of the plastic waste input used for recycling comes from non-food contact applications." said Carolina Perujo Holland, ICIS plastic recycling analyst, EMEA.

Food grade resins currently represent only 10 percent of the global annual capacity of recycled polymers of over 45 million tonnes, according to ICIS Mechanical Recycling Supply Tracker. The research includes recycled polyethylene terephthalate (R-PET), recycled polyethylene (R-PE), and recycled polypropylene (R-PP).

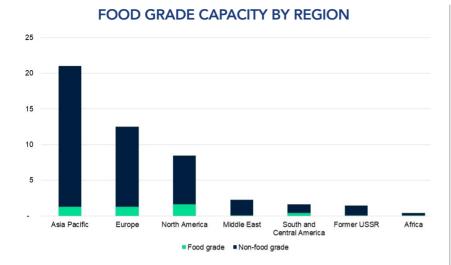
However, the food grade availability varies extensively among the resins, as represented in the following chart. Slightly over 20 percent of R-PET capacity globally is food grade in comparison with only 3 percent of polyolefins.

This difference is a result of usage of each polymer in different applications, where PET resin is

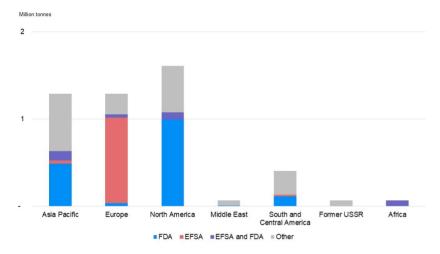
used predominantly in food packaging compared to other polymers thereby increasing the available post-consumer sourced feedstocks for recycling back into food grade recycled polymer. In addition, currently, some countries allow the use of recycled plastics in food contact applications but many other do not and this can vary by polymer also. This is the case in Brazil, where the National Health Surveillance Agency (ANVISA) only authorizes food grade for R-PET.

There is no country-specific regulation to explicitly allow or prohibit the use of recycled plastics in food applications in Asia except for Japan, hence the lack of any regional agency equivalent to FDA and EFSA. However, recent developments in Korea, China and Thailand indicate food packaging applications using recycled materials may emerge.

Korea's Ministry of Food and Drug Safety revised legislation allowing the use of R-PET and polyethylene naphthalate (R-PEN) in food contact materials as part of multi-layer structures. Thailand's Food and Drug



FOOD GRADE CAPACITY BY REGION AND BY AGENCY



Source: ICIS, Recycling Supply Tracker - Mechanical, 2021

Administration is considering permitting the use of R-PET and R-HDPE for food contact applications. China's National Center for Food Safety Risk Assessment (CFSA) agency is initiating a risk assessment method for recycled food contact materials.

"Although the EU has set recycled content targets under the Single Use Plastic (SUP) Directive which is one of the main factors driving demand for recycled plastics in the region, many EU countries have not always encouraged the use of food grade recycled plastic in food contact applications. Italy only approved the use of more than 50 percent non-virgin material in PET plastic bottles in 2020.", added Perujo Holland.

Historically, the European food grade recycled polyolefin market has had difficulty in growing because the level of investment was not seen to carry sufficient returns. The UK is the only successful example of food grade recycled HDPE with EFSA positive opinion due to the discrete waste collection stream for post-consumer HDPE milk bottles used as its feedstock. The remaining EFSA positive opinions for food grade recycled polyolefins are for closed loop processing PP and HDPE transit packaging.

From the regional perspective, although Asia-Pacific is the largest producer of recycled resins alone, accounting for almost 45 percent of the global capacity, the region's food grade resins only represent nearly 5 percent of the region's total recycling capacity, while the United States and Europe have a share of 20 percent and 10 percent, respectively.

Reasons behind that include the fact that the largest recycling end market in Asia is fibre, which is not required to be food grade. In Europe, for instance, sheet and food contact bottles are the largest end markets using R-PET from PCR bottles, with a share of the total R-PET supply of 38 percent and 32 percent, respectively, in 2019. In the U.S., food contact bottles have been gaining space in the market supply of R-PET, growing from a 21 percent share in 2018 to 28 percent in 2019, while fibre reduced from 47 percent to 41 percent year-over-year.

FDA LNOs and EFSA positive opinions are internationally recognized high standards for food contact plastic recycled material throughout the industry and allows companies with these accreditations outside the US and EU to potentially trade with them.

FDA is the largest agency alone with almost 35 percent of the global registered recycling food grade capacity whereas EFSA represents slightly over

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20 percent. While EFSA is more prevalent in Europe, FDA is more widely used internationally, as represented in the following graph. One of the main reasons for that is the fact that the process, including traceability of feedstocks to meet the 95 percent food contact origin source, to obtain a EFSA positive opinion is challenging for some suppliers and is not a requirement of FDA.

End markets for packaging with recycled content are driven, among others, by brand owners, regulation, industry associations, and consumers.

The EU has mandated the industry to include 25 percent recycled content in PET bottles by 2025 and 30 percent in all plastic bottles by 2030 under the Single Use Plastics (SUP) Directive. Likewise, in the U.S., in California, manufacturers are required to include an annual average of 15 percent of post-consumer recycled plastic (PCR) in beverage containers starting in 2022. By 2025 the mandate is set to increase to 25 percent and by 2030 to 50 percent. Also, Washington state has recently announced a schedule for PCR requirements for different product categories, starting with beverage containers and trash bags in 2023, adding certain household cleaning and personal care products in 2025, and expanding to dairy milk containers in 2028.

In addition to legislation, several brand owners have been setting voluntary targets following the lead of the Ellen MacArthur Foundation Global Commitment which aims to have 25 percent of post-consumer recycled content in plastic packaging by 2025. Many global PET beverage bottle brands have even set sustainability targets beyond those required, averaging

In order to fulfil targets, companies need to source recycled resins, and applications such as beverage containers and primary food packaging, require high-quality food grade recycled resins, which are currently limited.

at 50 percent R-PET by 2025 in Europe. Even extending to 100 percent R-PET content in some European markets in timeframes earlier than 2025. In order to fulfil targets, companies need to source recycled resins, and applications such as beverage containers and primary food packaging, require high-quality food grade recycled resins, which are currently limited. Investment is needed in collection systems, consumer education, and recycling capabilities in order to increase the global supply of recyclates to reach industry targets.

Long-term solutions

In the long-term, chemical recycling can be a potential complementary solution to mechanical recycling to secure supply of recycled resins suitable for food contact applications. The industry has high expectations for the higher volumes of feedstock that chemical recycling can process, in addition to its source, as any waste stream can potentially be used, including films and flexible packaging. Recycled resins produced

through chemical recycling have near-identical properties to virgin and as such are not subject to food-contact regulation restrictions

However, despite current investments in chemical recycling facilities, ICIS expects that industrial scale may not be achieved before the 2030 deadlines for mandates and sustainability related pledges. Moreover, the magnitude of its environmental impact as well as its legal status are unclear.

In conclusion, immediate measures are needed to improve collection rates and sorted fractions while reducing contamination in the recycling stream, in addition to mid and long-term solutions, such as regulations and technologies. Including a review of the criteria around the food safety regulations, such as the 95 percent feedstock origin, which presents more challenges for polymers that have lower concentrations of food contact material from origin in their overall waste stream.

ABOUT THE AUTHORS

Paula Leardini is the senior analyst, plastic recycling, the Americas, and Carolina Perujo Holland is analyst, plastic recycling at ICIS. ICIS helps businesses make strategic deci-





sions, mitigate risk, improve productivity and capitalize on new opportunities.

Additional reporting by Helen McGeough, senior analyst at ICIS



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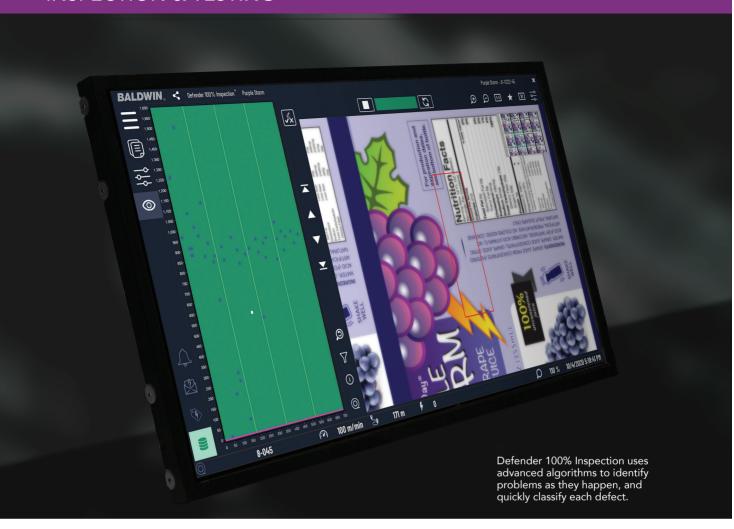
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Newest Data-Connected Inspection Technologies

Offering instant detection and easy removal of defects.

By Craig Du Mez, Global Branding, Public Relations and, Communications Manager at Baldwin Vision Systems

In today's highly competitive environment, printers and converters often think in terms of survival rather than growth. It's easy to slide into the mindset that operating costs are, for the most part, fixed—as are profit margins. Minor process improvements here and there can result in minor successes,

and keep the business going.

However, there are large operational and competitive advantages to be realized by committing resources and organizational focus to delivering consistent print quality. Investment in the latest automation and data-connected technologies can quickly pay for itself and

provide significant bottom-line growth far into the future.

When considering that investment, it's crucial to factor in not only the up-front capital expense, but also the business expenses that can be greatly reduced or even eliminated. What is the annual cost to your business for

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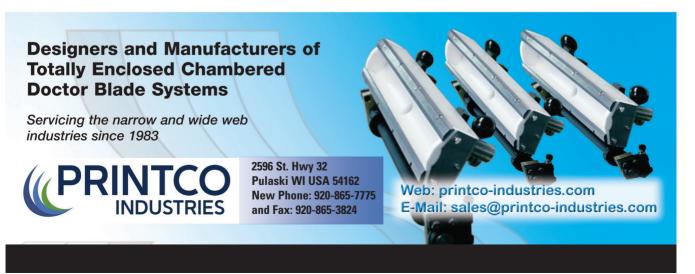
The Defender inspection workflow from Baldwin Vision Systems makes it possible to make tactical decisions based on facts and eliminate all defects from outgoing product.



material waste—both substrates and ink? What is the annual cost of press down-time to manually fix print quality issues or simply set up the next job? What is the annual cost incurred by returns and re-runs? What is the annual or potential cost of litigation associated with defective print? What is the cost of losing a valued print customer due to quality issues?

Many of these costs are easy to calculate before making decisions on technology investments. Other returns on investment are no less real, but more difficult to quantify: The cost of damage to your reputation, the savings realized through monitoring and improving processes, the cost of retaining and retraining skilled press operators, the value of being able to remedy problems as they occur (rather than after the job is run), the value of comparison and consistency from press to press, shift to shift, facility to facility.

Data-connected inspection workflows apply intelligence to the process of finding, classifying, and removing every defect. The defect data can be used during the print run to automatically apply optimum inspection tolerances to each



job. Manual fine-tuning makes it possible to reduce false or nuisance alarms by simply adjusting sensitivity levels for multiple defect types and different substrates. Job settings can quickly be modified and saved for future use. With print defect data stored on a central server, quality control operators can analyze roll maps for defect distribution, count, and type. Out-of-tolerance areas are identified for fast removal, and job-based quality reports can be generated. These reports can be highly valuable to improve your processes, or to prove your print quality to customers or in litigation scenarios.

For all advanced print inspection technologies, ease of use is another important consideration for quickly deploying new technologies and realizing a fast return on investment. Systems that require very little training to operate will benefit the bottom line—not only when the technology is installed, but also far into the future as workforce turnover impacts the business. Aside from training, systems that are powerful yet simple to use deliver a day-to-day boost to production efficiency and increase your ability to achieve perfect print quality.

Advanced, data-connected workflows give printers and converters the ability to make strategic decisions based on facts. With a tracking workflow, it's possible to eliminate all defects from outgoing product, providing perfect quality to brand owners. It is also possible to make tactical decisions about which defects do and do not need

to be removed, based on your customers' speci¬fications. This ensures maximum yield and maximum profitability—job after job. ■

ABOUT THE AUTHOR

Craig Du Mez is Baldwin Vision Systems' global branding, public relations, and communications manager. Baldwin Vision Systems and manufactures print inspection an



manager. Baldwin Vision Systems designs and manufactures advanced print inspection and color management technology, including the "Defender" and "Guardian" data-connected inspection workflows.

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Tetra Pak Expands Production of Plant-Based Coatings for Aseptic Cartons to North America

As demand for sustainable packaging continues to grow, Tetra Pak has expanded production of aseptic cartons made with sugarcane-based polyethylene (PE) coatings to its Denton, Texas converting plant. The cartons



incorporating plant-based PE will come with a plant-based cap, also derived from sugarcane.

The plant-based PE coating reportedly offers the same recyclability, functionality and food protection as traditional polymers but made from renewable materials with a lower climate impact.

All Tetra Pak packages include thin layers of polyethylene to prevent moisture from getting in or out and to keep the product inside safe. The plant-based option has been previously available at other Tetra Pak converting factories in France and Brazil. By bringing this capability to the Denton plant, the company is increasing the share of renewable material in the packages manufactured in the U.S. and making such cartons more accessible to North American customers.

The plant-based PE option does not require any modifications to existing filling equipment. Further, customers using plant-based PE have the option to apply the Bonsucro Chain of Custody certification seal on-pack.

Advancing use of plant-based PE coatings in North America is the latest move in Tetra Pak's efforts to deliver the carton of the future. Tetra Pak launched the industry's first plant-based caps in 2011 and, in the U.S., the company is accelerating use of leading-edge technology such as a new digital printer and a new state-of-the-art laminator in the Denton plant to help deliver more advanced packaging formats.

For more information, visit www.tetrapak.com.

Marvaco Moves to New UV-LED Technology

Marvaco recently announced its new UV-LED plate-making technology install and FlexoExpert certification completion in all of its plate production units in the Nordics.

Marvaco continues its pioneering work by starting to use LED exposure in flexographic plate production – the first of its kind in the Nordic countries. At the same time, the company's new production unit in Finland has passed its final FlexoExpert audit.

"This investment further increases our product quality and environmental sustainability of our production as we move to LED exposure. The previously unseen new LED technology allows us to move from HD and Full HD plate quality to Ultra HD screening in flexo plates," said Marko Valkamo, chief prepress production officer, Marvaco.

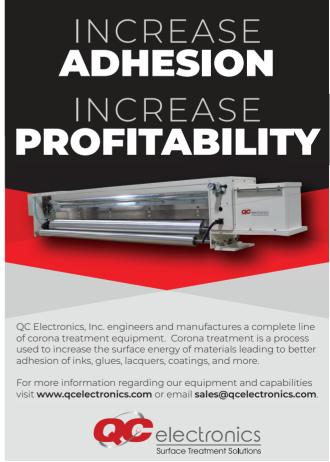
"The full completion of the FlexoExpert certification at Marvaco has unified our operations and way of working between sites. The streamlined production



further harmonizes Marvaco's production quality. For this, I would like to thank our team and the supervisors from the XSYS. It required a lot of work, but we all are happy about the results," said Vesa Maukonen, head of Pori unit, Marvaco.

For more information, visit www.marvaco.com.







HOW TO: November 18th, Episode 5 of the Nordmeccanica series.

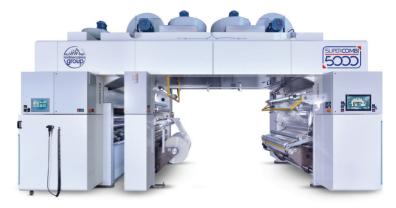
Episode 5 of the Nordmeccanica series will be broadcasted live on November 18th at 11 am EST.

This episode will be featuring all of the latest synergies in Lamination, Coating and Vacuum metallization for flexible packaging. The industry race toward more sustainable solutions brings in daily innovations. Innovations that only cooperation through the value chain within industry leaders will eventually develop into market realities. Nordmeccanica and its partners are leading that race and are now ready to present to the industry new exciting results. As an evidence of consistency data will not be offered as simple charts and dry numbers only. Results will be shown live during actual production runs. Very little "bla bla" and a lot of action. No ZOOM like close up on faces, but wide angles on actual machine runs. A unique format that Nordmeccanica pioneered last year with Episode 1 in June 2020. All previous episodes are now available in download streaming at www.nordmeccanicaevents.com. Credentials to access the website will also allow to attend the "Episode 5" November event.

During this episode we will showcase the latest in terms of barrier enhancement for flexible packaging and technical evolutions targeting sustainability. Real, actual solutions to reduce the mass of the packaging while allowing for improved protection of the packed goods.

Demonstration will be live at our Laboratories. A unique location in our industry allowing for Vacuum Metallization and substrate conversion by lamination and coating. All in one place.

Two main live demonstration runs during the event:





- Conversion of packaging substrates by AlOx deposition. The demonstration will be completed by comparative data analysis of the combined effect of the vacuum deposition, lamination and the coating of barrier enhancing formulations. During the demonstration will be shown the quick time to production while setting up the metallizer from regular metallization to AlOx metallization.
- High efficiency metallization of CPP demonstrating the features of the most recent releases of the Nordmeccanica Vacuum product range.

As usual for the Nordmeccanica Events format, the live machine runs will be completed with overviews on the processes, detailed machine presentation, technical sessions, third parties generated data support, market analysis and

some entertainment too...

The location for this live event, Nordmeccanica R&D laboratories, is located on premises at the Nordmeccanica Corporate headquarters. A place to tests and R&D developments around all of the products and technologies part of our offer to the market. Super Combi 5000, the compact machine concept designed around the innovation of interchangeable coating heads allows to run laminations and coatings as needed while the Vacuum metallizer NordMet 12Plus takes care of the technologies connected to Vacuum deposition. R&D Laboratories are available to our customers year around for product development R&D projects and technology testing. Please contact our local representatives for more information and reservations.

www.nordmeccanicaevents.com www.nordmeccanica.com



HOW TO: Identify What Perforation Method is Right for Your Application

There are HOLES in many more places, performing important tasks than most of us realize. Papers, films, foils, foams, cardboards, nonwovens, composites and other materials can all be MACRO, MICRO or NANO PERFORATED for a wide range of reasons.

There are obvious applications, like the holes that allow air in bags to extend shelf life. In food packaging, the most common applications are packaging for pet foods, frozen foods, boil in bag, microwaveable packaging, lidding films, steam vents and easy tear openings. The applications are vast and endless.

How do I Know What Perforating Technique Will Work Best for my Project?

This question is literally the reason why we have become a one-stop shop for perforating solutions. We take the following simple steps to take you from concept to production:



- 1. Discuss the project and expected outcome
- 2. Study material and see which process works best to achieve your perforating goals
- 3. Determine hole size and pattern that is suitable
- 4. Run samples
- 5. Design tooling and machinery
- 6. Run toll perforating or
- Install and setup perforation tooling or machinery in your facility.

Whether you are having issues with trapped air or liquid, looking to add grip, texture, extend the surface area of a material for increased absorbency of liquid or sound, our experience in the hole making arena will fast track you to where you need to be.

Perforating Technologies Available:

- Hot pin perforating (rotary and vertical);
- Cold pin perforating (rotary and vertical);
- Slit perforating (razor and crush);
- Tear line perforating (cross tear, inline tear, both or custom);
- Punch perforating (vertical cam, electro-pneumatic and electro-mechanical);
- Rotary punch perforating (ejection and suction);
- Laser perforating;
- Thermal (flame) perforating;
- Vacuum perforating; and
- Embossing.

No matter whether you have an extruder, laminator, flexo-printer, coating machine, slitter, center folder, bag making machinery or other process, perforating can be added to your existing equipment



as tooling, as an attachable unit, or can be offered as an offline process.

We are excited to introduce an expansion to our already diverse range of perforating solutions! Machine direction AND cross web direction slit perforating in one, compact unit.

Whether you want to add slit perforating capabilities to your existing machinery or, if you are looking for a drop-in unit to keep things simple, we can help.

Custom to your specifications, any length slit, any spacing. Send your material to us for examination, and we can design a blade and pattern to suit your requirements.

Vent lines that double as easytear lines can be made continuously at a repeated distance, or in register after reading a color mark if you need the perforations in a particular location.

We have the perforating solution. Got holes?

Finzer Roller

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HOW TO: Prevent Defects From Reaching Your Customers

Although everyone strives for zero scrap on the jobs they run, there are a myriad of reasons that coating, extrusion, printing, processes etc. can't of produce 100% saleable product. Whether it's a mosquito stuck to an extruded web, a splice, or a streak in the printing, some defects are just unavoidable.

As a result almost all companies have to accept that there will be some flaws in their processes. However none of their customers expect any of those flaws to be passed along to them. So locating and accurately marking those sections of web are critical to a process. Material determined to be out of spec must be easily identified later so it can be culled out before it gets out the door.

Everyone has some method of determining when a section of a job run must later be removed. And most attempt to mark the web somehow to locate those sections later. Some insert slips of paper into the winding roll, some manually apply a pressure sensitive label to the moving web, some use marking pens to mark the bad areas of web as it passes by etc. Not only are these methods dangerous, but as manual operations they are rarely accurate.

100% web inspection systems to verify quality are increasingly popular. However automatic inspection is only one component.



These systems which perform print and surface inspection or gauge coatweight for example, typically all have the ability to output a signal coincidental to location of the flaw sensed. This provides the ability to close the inspection loop and automatically and very accurately mark the location. These signals, along with machine signals correlating to other areas needing marking, can automatically trigger Novation's WebFlaggers. An example of this would be taking a signal from an automatic unwind splice which would then be tracked so a flag will wait to be applied until the splice reaches the location of the WebFlagger.

How the Novation AF3 WebFlagger Works

The AF3 WebFlagger takes operator contact with the web out of the defect-marking

process. With the press of a button, or via machine signal, the AF3 applies a pressure-sensitive flag at the defective location. At speeds up to and even over 4,000 fpm (1,200 mpm), the AF3 instantly and accurately marks the web. Novation's flags are optimized for the job. A film lamination protects against torn flags, and the adhesive is "deadened" on the portion of the flag that extends

off the web's edge to prevent the flag from folding back onto itself, or sticking to idler rolls and other machine parts.

Novation offers a variety of flag types. Some customers are certain that some sections are unusable, and therefore use flags with a very aggressive permanent adhesive which can't be removed from most substrates. Others mark questionable sections which must be re-inspected downstream with removable adhesive flags, allowing them to be cleanly removed if the product is later determined to be acceptable. And with the MultiColor option, the AF3 WebFlagger can even apply different color flags to identify different issues.

NOVATION-INC.COM 610-837-5026













HOW TO: Order your first spooling machine

Peace of mind:

When ordering a machine, especially if it is the first for a company, seeing it in action with the material it will be running is key. There is no better peace of mind than a trial and seeing a finished product with your actual material. Knowing that SRC Systems, Ltd. is here in the United States to provide parts, service & support lends to ensuring our customers are confident they are a priority to us.

SRC Systems, Ltd. Has been selling machines world-wide for over 25 years. Let us connect you with one of our many US based references.



Come and visit us in Montgomeryville, PA and see our trial machine. We do not charge our customers to run their material on our spooler. The only cost to the customer is shipping their material to us, and travel costs. We feel this should be standard when ordering a spooling machine. The show machine that we are bringing into our facility in Montgomeryville, PA is equipped with rotary shear, score & razor in comb slitting. Rewind shafts will be 3" with 6" adapters. It will be a 6 head spooling station as shown. This will allow us to tailor our customers experience.



Key Specifications:

The following specifications apply to:

SP06 (6-head spooler, see photo) SP12 (12-head spooler) SP18 (18-head spooler)

Maximum parent roll width: 24" (or # of heads times 1.5)

of neads times 1.5,

Maximum parent roll diameter:

Slitting: Shear, score & razor

Max mechanical speed: 900 ft/minute Finished spool maximum width: 19.6" Finished spool maximum diameter: 23.6"

Slitting widths (material dependent):

Shear: 1/4" minimum, appx 1.5" maximum Score: 1/2" minimum, appx 1.5" maximum Razor: 1/8" minimum, appx 1.5" maximum

Locations:

Montgomeryville PA: Sales, Support, Parts & Showroom.

Ipswich England: Main HQ, Support, Parts, Assembly & Testing.

Contact information:

Lucas Sheridan 267-421-4679 Lucas@globalequipintl.com Montgomeryville, PA 18936





HOW TO: Put Flexibility Into The Manufacturing Process

Conventional packaging equipment may not provide a simple way to handle product size variations quickly, resulting in unproductive setup times.

The solution is flexibility. The core of flexibility lies in the underlining capability of the automation system. Its functionality and the speed to execute it are crucial for the repetition rates needed in today's manufacturing equipment. Operations include:

- Controlling web tension
- Printing multiple colors
- Registering for die-cutting
- Applying glue spots on the fly
- Die-cutting finished products
- Forming finished products

Synchronized motion of material, forming processes, and coordinated electrical and servo actuated systems to punch, seal, cut, glue, stack, and wrap give flexibility. Different sized products requiring unique settings are accommodated quickly by selecting from a library of recipes on the screen. Make needed adjustments on the operator's terminal to suit the process, and you can save them for future product runs.

How does the controller achieve this functionality? Comparing a mechanical similarity forms a good picture of what is happening in the realm of software. The software configures and reconfigures actions that are allowed by design to perform. These various actions are programmed to duplicate many mechanical efforts with sequences from the controller's library of functionality.

The examples in (Figure A) illustrate some of the software functions available on all IIS controllers as functional block commands.

Common to all blocks are the Source Position representing

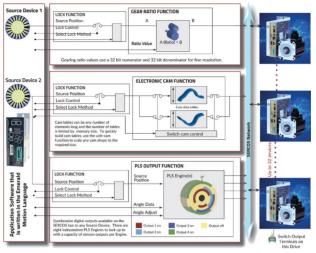


Figure 1

a rotating input value such as a motor, an encoder, resolver, or a software-generated 'pseudo motor.' The Lock Control engaging or disengaging the function, and the Lock Method controlling how and when it will engage or disengage, similar to a clutching method.

Software functions include setting gear ratios, executing Cam tables, and controlling Programmable "limit" Switches. Multiple functions can be instigated, enabled, and executed at the same time in the controller.

Gear Ratio Function

Ratio values range between 0.0001 to 10000. Any motor on the drive network can use output B (Figure A) as its source. This locking method is available to perfectly sync two shafts together recording A's position and accelerating B enough to catch up before locking. For web tension using two motors, connect one pseudo-motor as a source to both motors through separate gear ratio functions. Then, apply a small ratio difference between both to cause and control the tension.

Electronic CAM Function

Continuous positioning of a motor axis along a path using a table of data simulating the function of a mechanical cam. The Source Position addresses the electronic cam table using linear interpolation between data points for smooth transitions. Using three electronic cam tables on three servomotors will create a three-dimensional path. Multiple cam tables can be switched in and out with smooth transitioning in real-time.

Programmable Output Function

Two main functions in this block feature:

- Synchronizing a digital output to turn on and turn off at positions along a path.
- Turning multiple digital outputs on and off based on time.

Unproductive setup times are reduced by providing flexibility using advanced software functions.

Christopher Englert, Director of Sales & Marketing. Industrial Indexing Systems Inc., Victor, N.Y

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HOW TO: Improve Efficiency On Winders, Unwinders And Slitters

Contact and separation between two surfaces creates static electricity, which results in process problems and safety concerns when static reaches shock levels. The **challenge** is that static electricity causes severe problems throughout winding and unwinding applications, whether running plastic, film, paper or textiles. Both AC or DC type of anti-static ionization systems generate an electrical field, which causes the air molecules in the vicinity of the ionizer to break down into positive and negative ions. Because opposite polarities attract, any static charge material or product passing near the ionizer will attract ions of the opposite polarity until the charged material is neutralized.

But, the greatest influence over static bars performing well is "distance to target". Due to AC ionization requiring a static bar to be mounted within inches of a web to effectively neutralize the static charge, this can be a problem if you can't mount the bar close enough to the moving web.

Static Clean offers cost-effective solutions to all these problems. The all new 24vDC long range bar with its revolutionary built in intelligence are ideal for dealing with static electricity on winders. The 24vDC style longrange technology has been the most significant development in the static industry. On most new converting equipment, the 24vDC static bars can operate at higher

speeds and distances from 200mm to 1500mm from the web. Bars are also available for shorter ranges. The 24vDC static eliminators are designed to compensate for the changing geometry of the roll and provide a consistent level of static elimination by reacting to the static charge and emitting the quantity and polarity of ions to neutralize it. The combination of long-range intelligence with intense ion generation creates static eliminators for the most demanding applications.

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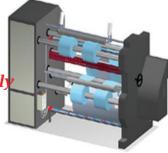
® Static Neutralization tatic to Meet the Requirements of High Performance Machinery at the unwind rewind & slitter

Contact and separation between two surfaces creates static electricity, which results in process problems and safety concerns, when static reaches shock levels.



Our static neutralizing bars are designed to help you learn how to control these troublesome and costly **problems** by neutralizing the static electricity that causes them.





- Cost-effective solutions.
- Available in lengths up to 12 feet.
- Small profiles available for installation in tight
- Improves efficiency on Winders, Unwinders and Slitters.
- Built-in Intelligence.
- "Clean Me" Function.



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HOW TO: Know When It's Too Late to Buy QC Equipment

Why do so many converters look at quality control products for your manufacturing process only after there is a problem? As a manufacturer of web guiding and QC inspection systems, we frequently receive calls only after an issue has occurred, resulting in a substantial financial loss and a significant dent in your company's revenues. This has often been referred to as a defensive purchase. Defensive because you either cannot afford another costly QC issue or your customer has stated that you must fix the problem or lose their business. BST North America manufactures a wide assortment of products that are designed to mitigate any future QC issues you may encounter, such as web guiding



equipment with the most sophisticated sensors and controllers to ensure your product is produced with precise accuracy. We also manufacture print and surface inspection equipment, which ensures that the product's quality is within the tolerances you specify from start to finish.

All too often, older equipment relies on outdated web guides that

simply cannot perform as well as they did when you purchased them. Time to update!

Quality control equipment should never be a defensive purchase because it already cost you money. If you look at this as an offensive purchase, it will ensure the highest quality of products leaving your plant, and your customers will be far more satisfied. So, how much will it cost you not to invest, or how much has it cost you for not investing?

For more information on BST web guiding systems, please contact Paul Henke at "Paul. Henke@BST.group" and for more information of inspection systems, please contact Ernest Schneider at "Ernest.Schneider@BST.group".



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