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# Film and Sheet EXTRUSION

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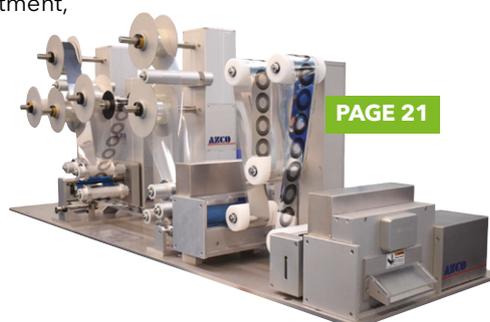
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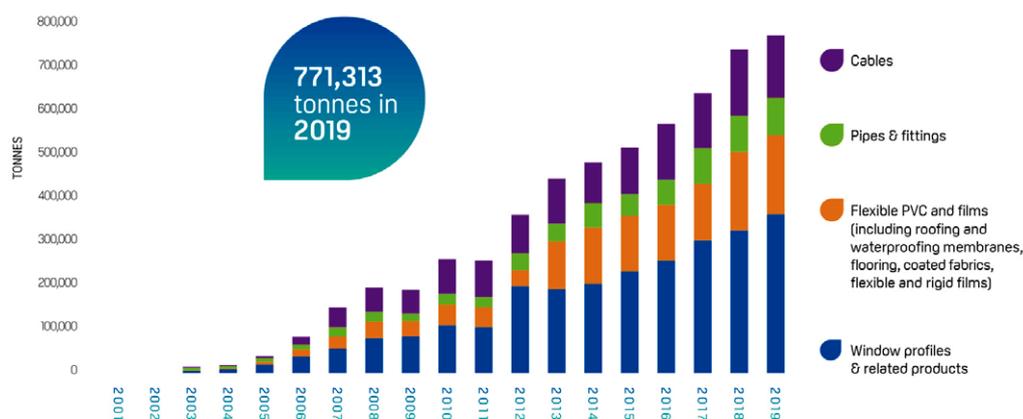
# VinylPlus edges closer to its PVC final recycling target

Recycling rates for PVC exceeded 770,000 tonnes in 2019 - putting it more than 96% towards its final target.

VinylPlus, the voluntary recycling commitment by the PVC industry, set a target of recycling 800,000 tonnes/year by the end of 2020. It has since set a new target - to recycle 900,000 tonnes/year by 2025.

Figures detailing the breakdown of PVC recycled - by region and type, for instance - is laid out in its latest progress report, available from VinylPlus.

Brigitte Dero, managing director of VinylPlus, said: "Each progress report is an opportunity for the industry



**PVC recycling in Europe exceeded 770,000 tonnes last year**

to reflect on its achievements and on future challenges and opportunities. With the culmination of VinylPlus in sight, we are building a new programme towards 2030 - which will be

launched in May 2021."

The report reveals that the European PVC industry recycled 771,313 tonnes of PVC last year, a total rise of around 4%. This is far lower than the 16% rise in recy-

cling seen between 2017 and 2018. Flexible PVC and films accounted for just over 170,000 tonnes of the total - a rise of almost 2% compared to 2018.

► [www.vinylplus.eu](http://www.vinylplus.eu)

## Klöckner Pentaplast adds pharma film in North America

Klöckner Pentaplast is further increasing pharmaceutical barrier packaging film capacity in North America by expanding its facility in Virginia, USA.

The "multi-million dollar" investment will increase the size of the facility by 6,000 sq ft and add new coating capabilities - helping the company to serve the growing North America market, it said.

It follows an earlier US\$25m investment in North America in 2018.

"Sensitive pharmaceuticals must be protected from moisture and oxygen, which



**Peacock: "As the market expands, so will the need for high-barrier solutions"**

is the hallmark of our coating technology. As the market expands, the need for high-barrier solutions

will grow with it," said Tracey Peacock, president of the company's Pharmaceutical, Health & Specialties division.

The expansion is expected to be complete by the end of next year.

The move comes on the back of other recent investments in pharmaceutical packaging film - including a "significant expansion" at its facility in Cotia, Brazil. A new coating line there has increased KP's South American coating capacity by over 30%, which it said will help to shorten lead times.

► [www.kpfilms.com](http://www.kpfilms.com)

## Spartech shifts to acrylics

US-based Spartech has converted several lines to making clear acrylic shields - and added 20 employees - in direct response to Covid-19.

The plant normally makes thermoplastic and high impact polystyrene materials. Demand for products such as sneeze guards led it to convert two production lines to making clear acrylic sheet.

While Spartech will initially hire 20 extra people, this may rise as high as 40.

► [www.spartech.com](http://www.spartech.com)

# Thermoforming lines installed remotely at Russian customers

In the face of the Coronavirus lockdown, two Russian companies recently installed thermoforming machinery - from separate suppliers - remotely.

At the beginning of the pandemic, Georg Polymer - a Russian producer of rigid meat trays - needed its new GN760 machine (from GN Thermoforming of Canada) installed quickly to meet growing demand in Eastern Europe.

Rather than postpone the installation - due to travel restrictions - GN remotely guided the customer through the process using the WhatsApp web platform. The installation, which would normally take

three to four days to install onsite, took around a week via WhatsApp. The machine is now up and running, producing 240,000 meat trays per day.

"It gives us great comfort and confidence knowing that we can accomplish this kind of installation remotely with a customer who has a high degree of mechanical ability," said Paul Phillips, GN sales and marketing manager.

Similarly, WM Thermoforming of Switzerland has helped its Russian customer Upax-Unity to install and commission three machines - which were delivered at the beginning of lockdown.

Here, all the machines were

delivered fully assembled in a single frame - with all electrical connections between electrical cabinet and machine components. Because of this, technicians were able to put the machines in place and connect all utilities using only the instruction manual.

WM machines combine a PLC and control system with advanced software, making it possible to commission the machine - via a stable internet connection. WM said this was the first time a customer had started up a machine without the physical presence of a WM technician.

> [www.gncanada.com](http://www.gncanada.com)

> [www.wm-thermoforming.com](http://www.wm-thermoforming.com)

## PET sheet line for Mexico

US-based Processing Technologies International (PTI) has sold a sheet extrusion line to Laminex of Mexico.

The TDC system includes a high vacuum twin screw extruder, sheet take off unit and dual position differential shaft winding system to make a range of personal protection equipment (PPE).

The Coronavirus pandemic has forced Laminex to move into new markets - such as sneeze guards and face shields

The 1,000 kg/hr PET line will be housed in the company's Guadalajara facility.

> [www.ptiextruders.com](http://www.ptiextruders.com)

## Machine demonstrations made via livestreaming

In the face of a worldwide lockdown, companies must think of more creative ways to interact with customers - and potential customers. Luigi Bandera of Italy recently organised an open house session - via live streaming - to demonstrate the benefits of its new HDBFlex five-layer co-extrusion technology.

The line, which makes heavy duty bags, was first demonstrated to a customer who is due to have a line installed. This private session allowed the customer to preview the running of the line and verify its production parameters. Afterwards, three live streaming sessions were transmitted in



**Bandera ran a livestreaming event to demonstrate a new machine**

two days, attracting more than 500 customers, potential customers and suppliers.

"Thanks to digital innovation, the barriers imposed by the Covid-19 pandemic has been

overcome - and turned a time of temporary stagnation of manufacture into an opportunity for a rapid post-Coronavirus recovery," according to the company.

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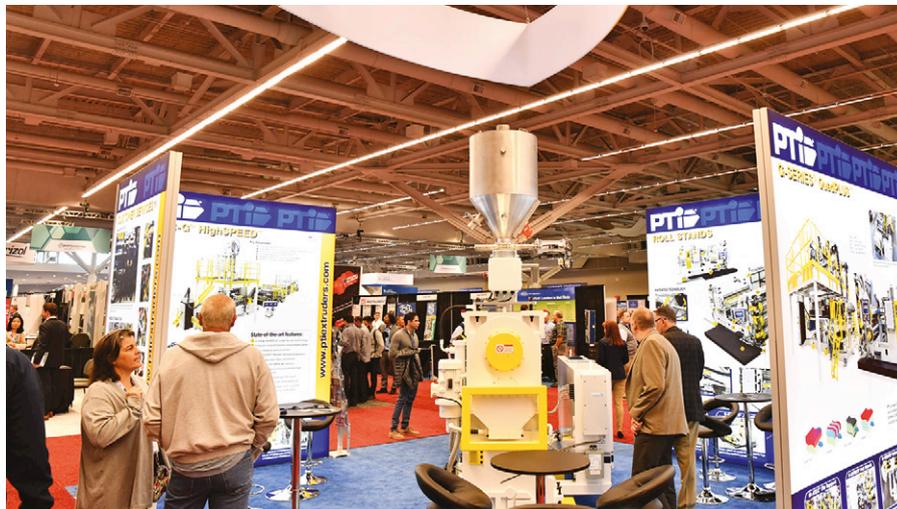
# Free registration opens for plastics industry expos in Cleveland, Ohio

Free online [registration](#) has now opened for four exhibitions focused on plastics extrusion, recycling, compounding and testing. Organised by AMI, the Plastics Extrusion World Expo, Plastics Recycling World Expo, Compounding World Expo and the Polymer Testing World Expo will all take place at the Huntington Convention Center in Cleveland, Ohio on November 4-5, 2020.

By registering in advance, visitors will receive free admission to all four exhibitions, featuring more than 250 leading suppliers, plus free entry to five conference theatres hosting technical presentations, educational seminars and business debates. Attendees and exhibitors will also have the option to buy tickets (just \$40 each) for a networking party at the Punch Bowl Social on the evening of November 4.

"The event will provide visitors with a great opportunity to meet and compare suppliers from around the world, as well as giving them the chance to learn from business leaders and technical experts in the conference theatres," said Rita Andrews, head of exhibitions at AMI. "When we ran these expos in Cleveland last year, we attracted 4,375 visitors, making them the biggest plastics industry gathering in the USA in 2019".

The four expos will occupy the



The co-located events take place on 4-5 November this year

largest halls at the state-of-the-art Huntington Convention Center in downtown Cleveland. They will feature a wide array of leading manufacturers of extrusion, compounding, recycling, and testing and analysis equipment, plus suppliers of a huge variety of polymers, additives and related services.

The exhibitor line-up already includes companies such as Amut, BYK, Cardinal Recycling, Clariant, Coperion, CPM Century Extrusion, Cumberland, Davis-Standard, Dover Chemical, Dynisco, Entek, Erema, Geon, Heritage Plastics, Intertek, Konica Minolta, KraussMaffei, Leistritz, Macro, Maguire, Matsui, Milliken, Netzsch, NGR, Nordson, Omya,

PerkinElmer, PTi, Reifenhauer, Q-Lab, SI Group, Struktol, Thermo Fisher, Vecoplan, Windmoeller & Hoelscher, and hundreds more.

The limited number of remaining booths are filling up fast. To find out more about exhibiting at any of the expos, visit <https://www.ami.international/exhibitions>.

The five focused conference theatres will feature more than 120 expert speakers over the two days, including influential representatives from leading compounders, extruders, recyclers and testing organisations.

A free ticket for the expos and conferences, which is valid for both days of the event, is available [here](#).

## Asahi Kasei claims victory in patent case

Asahi Kasei of Japan says it has won a patent infringement suit against two Chinese distributors of battery separator film.

The case was filed at Shenzhen Intermediate People's Court in China in August 2018. It alleged that two sister companies

(known as Xu Ran Electronic) had infringed an Asahi Kasei Chinese patent on lithium ion battery separator film.

The lawsuit required Xu Ran Electronic to stop selling its 'single-layer W-scope' battery separators in China and compensate Asahi Kasei for damages.

The claim was supported by the court's judgment in April 2020. Xu Ran Electronic was ordered to stop selling the infringing products indicated and "make compensation for the related damages". However, the judgment of the court is not final - and can be

appealed by Xu Ran Electronic, said Asahi Kasei.

"We will pay close attention to issues concerning our intellectual property rights and take specific measures proactively against any infringement," it said.

➤ [www.asahi-kasei.eu](http://www.asahi-kasei.eu)

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# German packaging firms report varied Covid-19 impacts

A survey of members of Germany's plastic packaging industry association, the Industrievereinigung Kunststoffverpackungen (IK), has shown that the effects of the Covid-19 epidemic on the companies varied considerably in April.

This was largely a function of the industries they serve.

In all, 120 mostly medium-sized companies responded and 37% of them had fewer orders compared to March, with 25% of them reporting declines of over 20%. This was most marked in companies serving the automotive industry, where demand has slumped.

The industrial sector also saw falls, said IK.

By contrast, slightly over half reported an increase in orders in April, mostly of around 10-20%. "Manufacturers of system-relevant packaging for food, pharmaceutical and medical products are in some cases reaching the limits of their capacity," the IK noted.

Martin Engelmann, director general added, however, that this positive picture is "only a snapshot" and that 56% expected a decline to follow.

"After frequent panic buying in

many places in mid-March, less food and daily necessities are now being stockpiled again.

However, the demand for hygiene and cleaning products remains high," he said.

Just under 80% of the companies have managed to fulfil all orders received, but around half reported corona-related restrictions.

Shortage of personnel is the key issue, albeit less markedly than in other sectors of the plastics processing industry, said IK.

Almost 40% of respondents were short of personnel, while almost 25% had to introduce reduced hours. Engelmann said there is a high level of commitment and team spirit in the workforces.

One positive knock-on effect is that public perception of plastic packaging has changed, thanks to the industry's contribution to fighting Covid-19.

"The function of the packaging - the hygiene and protection of the product - is being perceived more strongly again. We hope that this will contribute to a more objective discussion about plastic packaging in the future," according to Engelmann.

➤ [www.kunststoffverpackungen.de](http://www.kunststoffverpackungen.de)

## HOW DOES THE CORONA-PANDEMIC AFFECT THE ORDER SITUATION IN THE PLASTICS PACKAGING INDUSTRY?



Source: IK

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# Extrusion machinery bucks trend of falling sales in North America

Sales of primary plastics machinery in North America decreased in the first quarter of 2020 as a result of Coronavirus-related shutdowns.

Statistics from the Plastics Industry Association's Committee on Equipment Statistics (CES) reveal that sales fell almost 7% - to around US\$254 million -- compared to the equivalent period in 2019. Compared with Q4 2019, the drop was almost 20%.

While total sales fell in Q1 2020, single-screw extruder sales rose by nearly 35%, with twin-screw extruders up by 19%, compared to Q1 2019. In comparison with Q4 2019, single-screw extruders rose nearly 16%, and twin-screw extruders were down by about 1%.

Compared to Q1 2019, the value of single-screw

and twin-screw extruders were significantly higher by 34.9% and 19.3%, respectively.

While total sales fell in the first quarter, figures for single-screw extruders rose by nearly 16%, while those for twin-screw extruders were down by about 1%.

For comparison, injection moulding equipment sales fell nearly 12% compared to Q1 2019, and around 24% compared to Q4 2019.

"First quarter shipments were expected to come in lower due to the coronavirus shutdowns in March," said Perc Pineda, chief economist at the association.

"Nevertheless, we saw robust growth in single-screw and twin-screw shipments on a year-over-year basis."

Exports of plastics machinery in the first quarter grew by nearly 2%



**Pineda: "Lower first quarter shipments were expected, due to Coronavirus shutdowns"**

since Q4 2019, to exceed US\$358m. Imports rose by 0.5% in the same period, to US\$746m. The USA continues to rely on Mexico and Canada as its first and second largest plastics machinery export markets. Combined exports to these partners exceeded US\$153m, accounting for nearly 43% of all US plastics machinery exports.

In its quarterly survey of plastics machinery suppliers, CES found that nearly 19% of respondents expect conditions to improve or hold steady in the next quarter - far lower than the 69% who that felt that way in Q4 2019. Over the next 12 months, nearly 23% expect market conditions to be steady-to-better, down from nearly 74% in the previous survey.

"The coronavirus pandemic continues to disrupt the manufacturing and service sectors of the economy, both impacted by the plastics industry. However, the demand for plastics remains fundamentally healthy, particularly in the medical and consumer essentials spaces, and the economic slowdown is transitory," said Pineda.

➤ [www.plasticsindustry.org](http://www.plasticsindustry.org)

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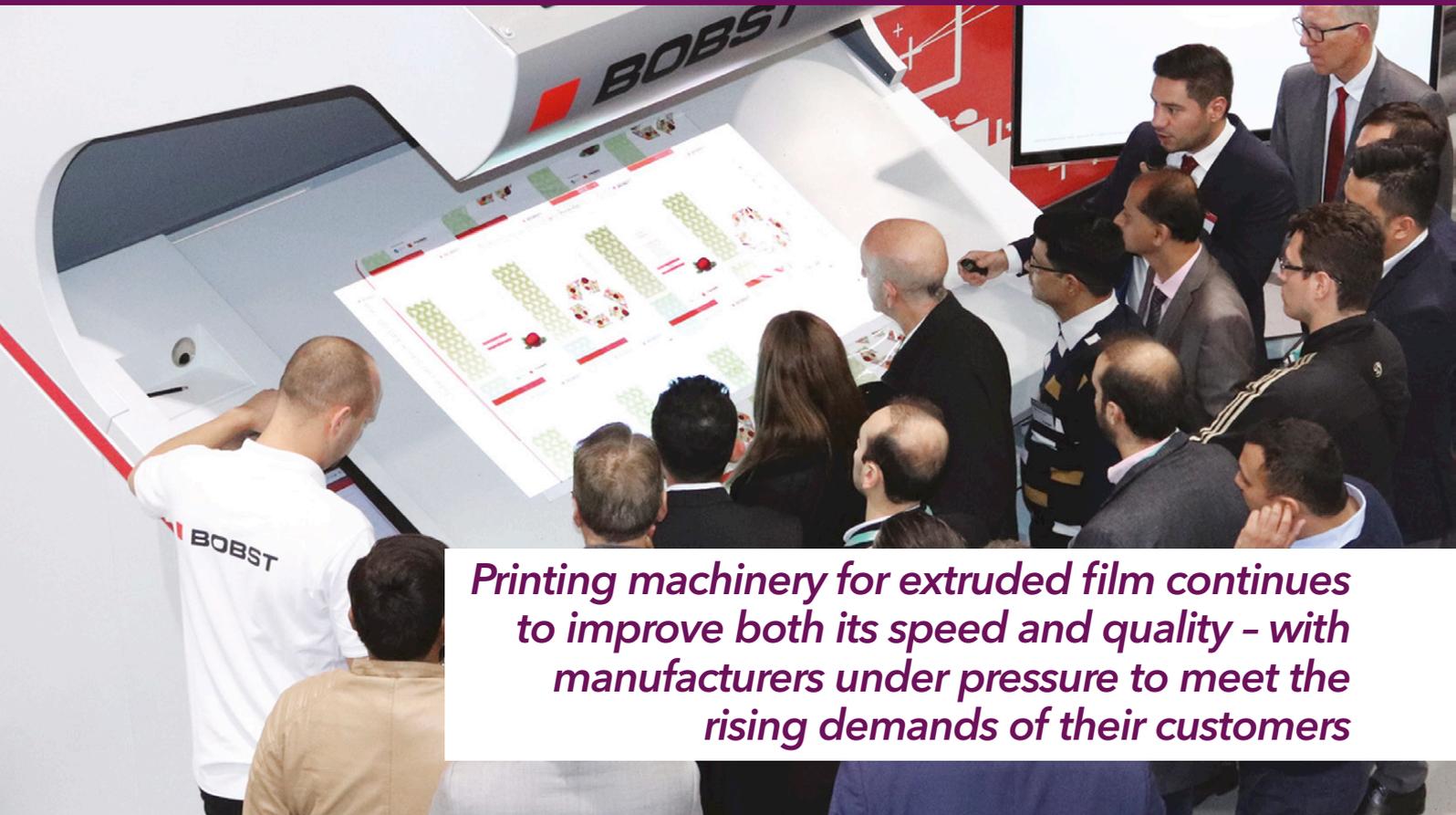
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*Printing machinery for extruded film continues to improve both its speed and quality - with manufacturers under pressure to meet the rising demands of their customers*

# Pressing issue: latest in printing technology

Printing technology is vital to flexible packaging: it's almost impossible to think of supermarket shelves that are not filled with highly decorated packaging. The sheer volume of today's packaging market - coupled with an increased need for quality - makes fast, accurate printing more important than ever.

Zim's Bagging Company - a US-based manufacturer of printed polyethylene rollstock, bags, and foam and bubble pouches - recently invested in its first printing press from **Windmoller and Holscher**.

The press, a 59in, 10-colour Miraflex II, has been installed at the company's plant in Prichard, West Virginia.

"After a thorough installation, the press is running and quickly meeting the speeds we expected," said Kevin Worthy, general manager of Zim's. "We currently out-produce our older equipment by three to one - with an expectation to increase our throughput to four-to-one as we become more proficient with the technology."

The Miraflex II was supplied with a Turboclean Advanced E inking and wash-up system with

electric pumps that are energy efficient and save on both time and wash-up solvent usage.

"This reduced an eight-colour wash-up that used to take 1.5 hours manually to just three minutes in total for all eight colours," said Worthy.

The press is equipped with W&H's Vision web inspection system, including Defect Check and Bar Code Check that provide operators with real time production data and control of the jobs on press. A closed loop solvent reclaim and recycling unit to allow for the reuse of ink and solvent waste was also installed.

## Chinese launch

**Bobst** has launched the Nova RS 5003 gravure press, which can print with water- or solvent-based ink on a wide variety of flexible packaging materials including the new eco-friendly substrates.

The launch took place at the company's Chinese facility in Changzhou, in Jiangsu province.

"Our gravure solutions bring together the advantages of our technology with the flexibility of configuring them with market-related technical solutions," said Sebastien Geffraut, zone business

**Main image:**  
**The Digital Inspection Table from Bobst is now available for use in flexible packaging applications**



**Above: Comexi has delivered an F2 ML high-speed flexographic press to Polytec of Guatemala**

director SEAP, for the web-fed business at Bobst. "For example, the choice of inking systems that can handle a broad variety of ink types - including the market-specific varieties that are used in the Indian and Asian flexible packaging industry."

The new machine is highly automated and includes the possibility to add TAPS - a fully automatic pre-register setting - at the touch of a button. Job make-ready and changeovers are fast: the new doctor blade system is easy and quick to

set, and the Twin Trolley solution, enables the printing cylinder to be changed without changing the ink - minimising job changeovers and colour matching time, said Bobst.

The twin flow dryers is also an exclusive technology. The efficient ventilation system minimises residual solvent on substrate, maximises energy savings and ensures low noise level in the pressroom. It is ideal for water-based inks, where drying capacity is one of the main concerns.

**Live inspection**

Bobst has also made its Digital Inspection Table available for use with its flexible packaging solutions - adding to its use in the corrugated board and flexo post-print sectors.

The Digital Inspection Table is designed to raise productivity and virtually remove print production errors. The first live demonstrations of the Digital Inspection Table with a CI flexo press took place at an open house last year, during K2019. It was shown in use with its latest CI flexo press innovation, the VISION CI.

"The reaction at the open house was incredible," said Mark McNulty, managing director of CI Flexo



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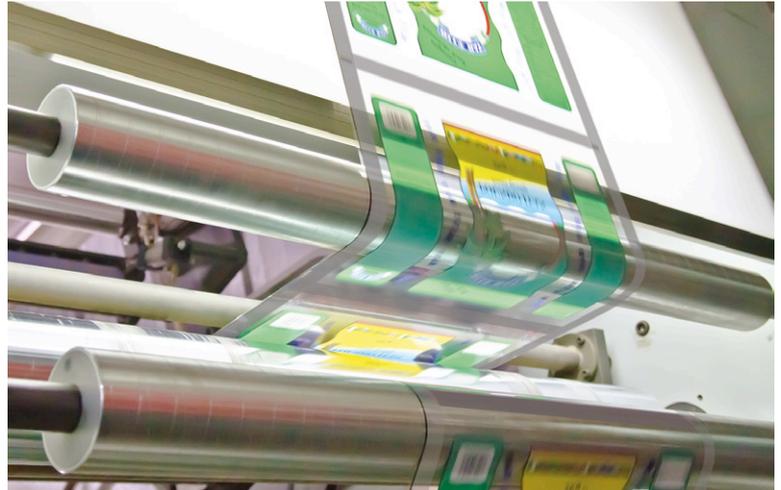
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- Anti-fog agents
- Specialty fluids
- Polymer masterbatch

Printing. "Converters could see the value of this solution, which helps them transition from analogue to digital quality control processes for their packaging production - driving improved quality checks and validation. By applying digital quality control functionality and capabilities, the risk of a costly production recall is significantly reduced."

The Digital Inspection Table - which has been available in the corrugated board sector for around 18 months - incorporates digital projection for proofing purposes, while providing real-time visual representations to match product with digital proofs. It uses HD projectors to illuminate the product sample with quality control imaging, enabling the operator to easily see if quality standards are matched or compromised. Results are summarised in a digital report that easily can be shared and distributed internally and externally, including with brand owners.

**Latin American deliveries**

Spain-based **Comexi** recently delivered flexographic presses to two separate customers in Latin America. Polytec of Guatemala recently took delivery of an F2 ML, a flexographic press for large



developments and high speeds.

Since the machine began running, its print quality and consistency - coupled with the ability to change jobs rapidly - has helped the company meet rising demands, said plant manager Óscar Escobar.

The F2 ML incorporates an innovative doctor blade positioning system with low friction pistons, a robust structure, and carbon fibre air mandrels with hydraulic intermediate sleeves. A wide upper platform encompasses a heating and drying

**Above: Isra's PrintStar inline inspection can check both sides of a printed film**

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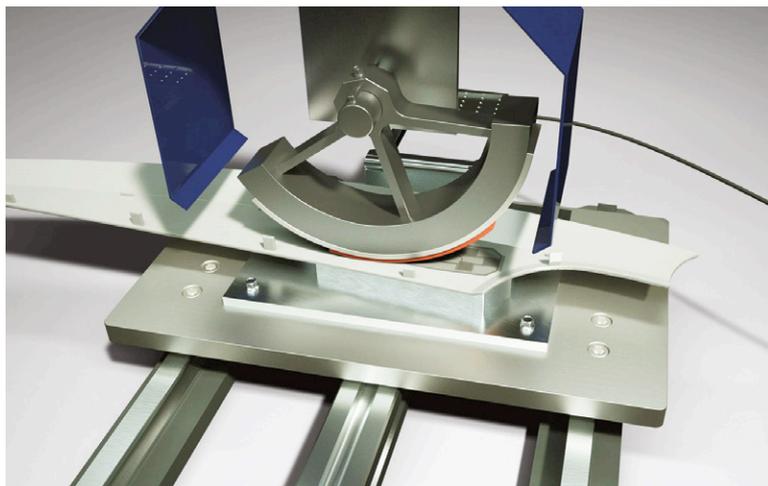
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**Above: Kurz's patent-pending FFB process was shown at K2019, applying touchscreen sensors to plastic parts**

system and two independent systems with automatic air recirculation regulated by the concentration of solvents.

As a result, it can print at speeds up to 500 m/min.

In addition, Epema of Brazil has installed a Comexi F3 flexographic press at its factory in Araraquara (São Paulo). It says the new press will help it raise productivity, and offer better quality to its customers.

It is the second commercial agreement between the two companies: Epema previously bought a Comexi laminator.

Epema, founded in 1987, makes coextruded films and bags for food, hygiene, and chemical products. It produces 18,000 tonnes/year of products. Rogério Mani, owner of the company since 2007, said he chose Comexi's technology because "we were strangled in our production of printed products". From now, he says, the company can focus on serving its clients by offering them "better quality, productivity and agility".

The F3 flexographic press is designed to satisfy the printing needs of the whole flexible packaging sector. It has a printing width of 1270mm, capacity of eight colours, and printing developments of up to 800mm. It includes electronic systems for high quality printing on different substrates. It has easy doctor blade access, and offers uncomplicated cleaning of drying between colours and cleaning of the central drum.

### Simultaneous inspection

**Isra Vision** says that its PrintStar inline inspection solution offers continuous quality and process control of printed images, lamination, and coatings - including metallised surfaces.

A medium-sized packaging producer is already using the system for applying cold seal adhesives to flexible packaging. The expertise gained from the inspection is used to further improve printing.

After printing, flexible film is moved to the laminator, where a patterned adhesive is applied to the reverse of the film. The application must then be aligned with the print on the front in the precise position in the register at a speed of up to 1,000 feet per minute. Another challenge is that the various films are typically finished with reflective surfaces.

The system detects all defects in the cold seal and monitors the process to ensure that the coating is even, free from voids, and aligns with the repeating print. Using high-resolution LCCD cameras - combined with ultrabright LED lighting - PrintStar detects both individual and recurrent cold seal defects in real-time. Both sides of the film are checked with the same system platform.

The system allows users to set acoustic alerts to warn them if the cold seal application is misaligned with the print - freeing up operators to handle other tasks while the inspection is running.

Isra's technicians helped the packaging producer to find the ideal location for installing the cameras in its existing machine set-up. The inspection system was ready to use immediately after installation, offering reliable inspection results just a view weeks later.

### Surface sensors

Plastic surfaces can be imbued with more than printed words and images - such as the addition of surface features. At K2019, **Kurz** demonstrated the automated integration of touchscreen sensors into plastic parts.

The sensors were applied to a white goods control panel using Kurz's patent-pending Functional Foil Bonding (FFB) process. The process has been adopted in several series production applications. A semi-rotary variant of FFB was shown at the Kurz booth for the first time.

In earlier FFB applications, touch sensors were applied by vertical stamping. This technique was not suitable for the application shown at the exhibition. So, Kurz developed a new roll-on technology that can transfer large-area sensors without air entrapment.

This was achieved by replacing the dispensing roller previously used in the roll-on process with a half-round silicone segment. This development helped to reduce cycle times.

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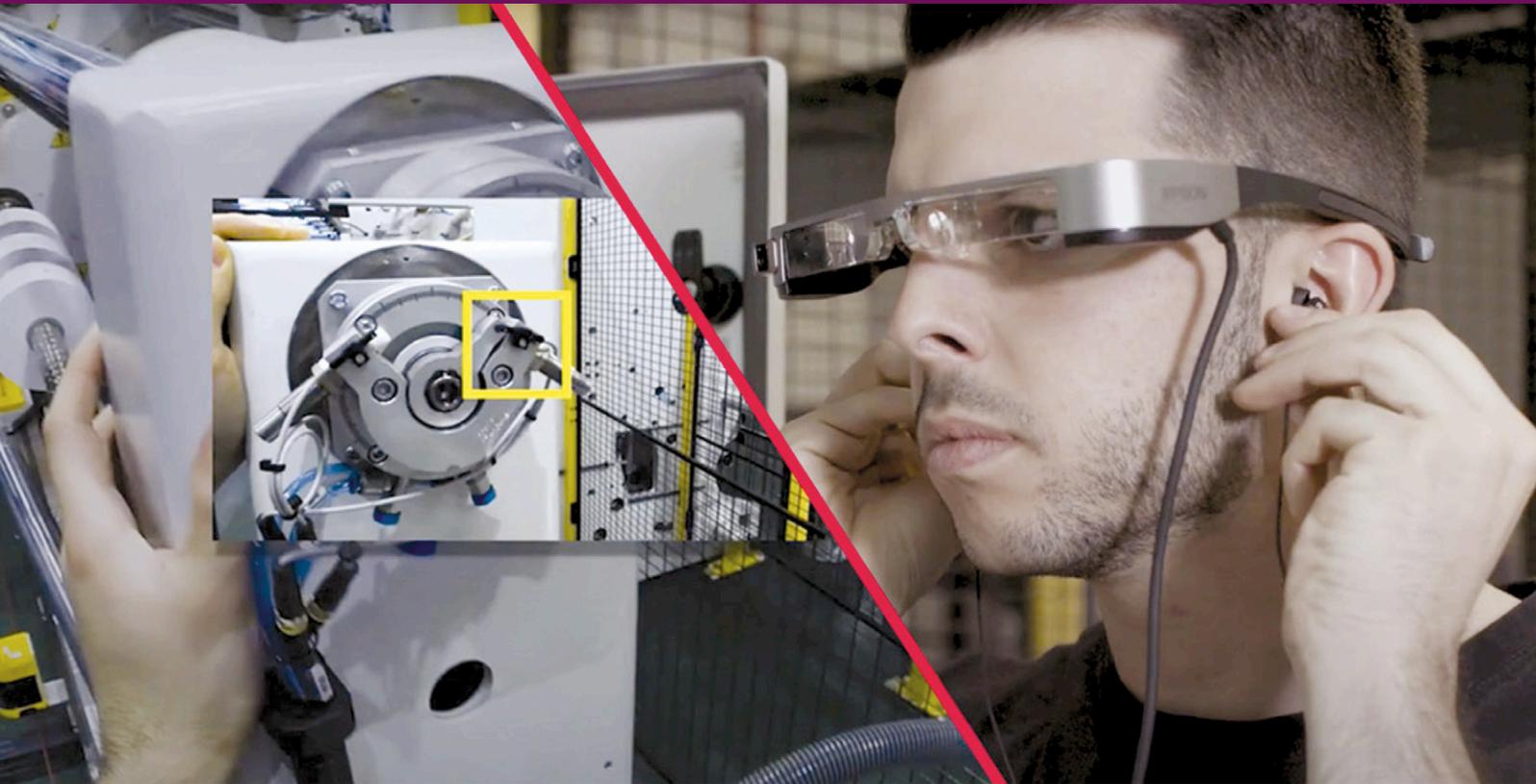
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# Post-process: advances in downstream equipment

*Whether it is slitters, web inspection systems or surface treatment, downstream equipment helps to control the properties of film and sheet output*

Downstream equipment describes a wide range of post-processing machinery, encompassing systems including web inspection, slitting, stretching and surface treatment. Though they all work very differently, together they help to ensure that film and sheet quality is controlled during the extrusion process.

Remote installation are becoming more commonplace right now, due to Coronavirus travel restrictions.

Earlier this year, **Comexi** completed its first totally remote installation and commissioning of a machine during the pandemic - at a company in Indonesia. The remote installation relied on the collaboration between the company's headquarters in Spain and its sales and service hub in Bangkok, Thailand.

During the installation - of an S1 MS slitter for large output reels - the distance between the plant and the headquarters was not a problem. This is because Comexi adopted Industry 4.0 and IOT technology early.

Comexi has been increasing automation in its products for some time, but says this has been particularly marked in its slitting business unit - which has been focused on automation to differentiate it from its competitors. This applies not just to slitters, but also to end-of-line automation, it said.

Following the remote installation in Indonesia, Comexi has begun working on its the next three projects - two in Central America and one in Thailand. The presence of Comexi local technicians around the globe - and the use of Industry 4.0 technologies, such as augmented reality smart glasses - will ease the installation process, both now and in the future says Comexi.

## Close control

**BST Eltromat** says that the growth of Industry 4.0 (or 'Converting 4.0') is changing the way that equipment such as slitters are monitored and controlled.

At K2019, it showed how its CLS PRO 600 digital line and contrast sensor helped to make automatic

**Main image:**  
**Comexi**  
**recently carried out a remote installation of a machine in Indonesia**



**Above: Cleaning electrodes regularly is vital in order to surface treatment equipment working at maximum output, says Vetaphone**

## Tips to maintain surface treatment equipment

All production equipment needs to be maintained if it is to remain in peak condition. Steen Clausen, customer support engineer at Vetaphone, lists five points that users should add to their maintenance schedules for downstream surface treatment equipment.

1. Inspect regularly, at intervals of no more than two weeks, to avoid potential problems down the line. This prevents unexpected stoppages and downtime, which saves time and money. For plants that run 24/7, inspection frequency should be more frequent.
2. Clean electrodes regularly to keep them performing at maximum output. Carefully remove any deposit build-ups. Also, check that they are all working. Replace any faulty electrodes so the system continues to operate at full power. Do not be tempted to continue running with a failed electrode.
3. Check inside the unit for carbon build-up - which is a fire risk. However, it can easily be prevented: look for burn or scorch marks on the side plates and clean off any deposit before it becomes a hazard.
4. Check the air gap between the electrodes and the substrate. On installation, it is set to achieve an even spread of power - but can begin to open or close through usage. This can lead to inconsistent performance that can cause costly issues downstream.
5. Make sure the ozone exhaust system is operating correctly. If it has been specified and installed correctly, it simply needs to be kept free of any blockage. If back pressure is a problem - and the machine uses 100mm diameter ducting - consider upgrading to 200mm tubes. Performance improvement can be exponential.

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positioning possible on a ConSlitter-type slitting machine from Kampf. The integration allowed the sensor technology and the motor-driven knife axle of the slitter to be set up automatically. With this concept, knives are no longer aligned with the sensor. Instead, lines and objects on the webs are aligned with the knife axle and the sensor. The sensor automatically moves to the preset lines and then supplies information useful for optimising the cutting process.

### Web errors

Techniques such as artificial intelligence can also help to classify errors on a film web.

In one example, BST has collaborated with SeeOne Vision Technology - an Italian manufacturer of surface inspection systems. Their joint project links information from film extrusion with quality data from the printing process. SeeOne's systems detect surface defects in different materials such as films (including metallised films), and use artificial intelligence to classify them as holes or inclusions, or as foreign matter such as insects or dirt. The findings gained from surface inspection can be used in various ways to optimise production processes.

For instance, the quality logs feed into BST's iPO-Workflow, which allows defects to be interpreted across process boundaries. The causes of undesired effects in the printing process can then be identified, if anomalies are documented in the quality logs of the film extrusion process in the same area of the film.

### Label improvement

**NDC Technologies** says that it recently installed its non-contact, on-line measurement system at SMI Coating Products, a label stock manufacturer in India.

The system helps SMI to monitor adhesive coat weight and moisture levels of the web during adhesive coating, helping it to improve the quality of its label stocks. The system solution comprises NDC's SlimTrak scanner and an on-line near infrared (NIR) gauge.

With its small footprint, the SlimTrak single-beam scanner fits into small spaces. Its IG710e NIR gauge gives fast gauging performance and versatile measurements of moisture, coat weight and coating thickness. This gauge is not affected by changes in process and ambient conditions, such as light, temperature, humidity or variations in batch substrate. Last year, NDC installed four systems on SMI's water-based and hot melt coating lines. Benefits of installing the systems include higher productivity, reductions in scrap and change-over time and more accurate coating weights.



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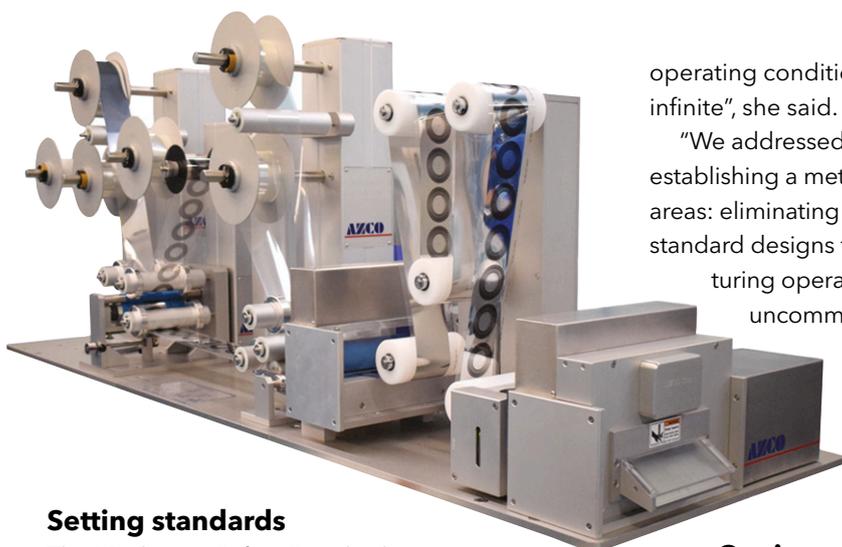
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### Setting standards

The Machinery Safety Standards Committee of the **Plastics Industry Association** has released a new American National Standards Institute-accredited safety standard for plastic sheet and film winding machinery.

Available at a reduced price for association members, *ANSI/PLASTICS B151.5-2020, Safety Requirements for Plastic Film and Sheet Winding and Unwinding Machinery* sets the latest industry standards for plastic film and sheet winding, slitter rewinding and unwinding machinery.

"Helping to provide for the safety of plastics industry personnel is one of our hallmarks," said Tony Radoszewski, the association's president and CEO. "Our ANSI standards programme ensures this standard will minimise hazards to personnel by establishing safety requirements for the manufacture, care and use of these machines."

The document has an expanded scope, and additional definitions and performance levels. It was created with input from 46 members on the Machinery Safety Technical Committee.

Jennifer Jones, director of industry standards at the association, added: "The wide variety and sizes of plastic film and sheet winding machines complicates any standard detailing their safety requirements."

Combinations of parts, production methods and

operating conditions in the industry are "virtually infinite", she said.

"We addressed this in our updated standard by establishing a methodology to pinpoint important areas: eliminating common hazards; establishing standard designs for competitors with similar manufacturing operations; safeguarding machines with uncommon designs for technical or operational reasons; and warnings in instances where the total elimination of hazards may not be technically or operationally feasible." The document is available to buy [here](#).

**Left: Azco has developed a system to unwind different materials from rolls, laminate them and cut them to length**

### Cutting to length

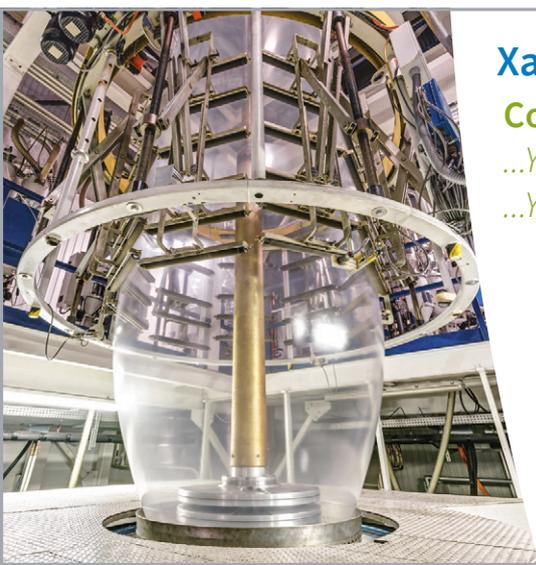
US-based **Azco** has developed a complete system to unwind four different materials from rolls, laminate them then cut the finished product to a specified length.

The rolls of material - which include PET film, aluminium-coated PET with adhesive, and release liners - are loaded onto four separate cantilever design brake unwinds. A roll feeder pulls the materials off the unwinds and laminates them together. The product travels through a dancer accumulator using urethane drive rollers. An internal guide directs it from the drive rollers into the knife assembly.

A registration eye recognised a mark which signals where to cut the product. The modular designed knife assembly is pneumatically operated, requiring 2.75-3 bar (40-60psi) of regulated air pressure. An operator control panel is provided which includes an HMI colour touch screen for easy setup and operation of the unit.

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# Not bursting the bubble: controlling film quality

*Methods to stabilise the bubble in blown film production are vital to ensuring that die output is converted into a high-quality end product*

IMAGE: MESSE DUSSELDORF/CONSTANCE TILLMANN



Once material has emerged from a well-designed blown film die, it requires precise treatment to ensure that the final film is fit for purpose. Precise cooling and bubble control are among the factors that help turn an extruded melt into high-quality extruded film.

US-based **Addex** has moved to the next phase of its Intensive Cooling technology for air rings. It says that by going through a continuous improvement process it can keep refining and improving stability and output from the bubble cooling system.

These improvements come about by Addex visiting existing customers and learning of any minor problems they are experiencing. From here, the company can make adjustments to its product in order to raise performance.

"Intensive Cooling allows us to push output so far that we start to see where other parts of the cooling system begin to break down, such as the main air ring lip designs, air collars and IBC - so that's where our R&D is focused," said Bob Cree, president of Addex.

Addex guarantees a minimum of 10% increase in output rate, though customers have reported higher: a 30% increase in output is typical, especially for stiffer materials.

"The only drawback to retrofitting a line with

intensive cooling is that the customer may need to make further investments in blowers and extruders to handle the increases in output rate," he said.

In addition, Addex has signed an exclusive agreement with Germany's **Windmoller & Holscher** (W&H) as a partner. The deal gives W&H exclusive rights to incorporate the technology into its machines - though Addex retains the right to install the system on a retrofit basis, said Cree. For this, Addex says it will focus on the North American market.

## Cool customer

**Hosokawa Alpine** has developed an efficient cooling system for blown film extrusion. The system comprises its Alpine CRX cooling ring - for outer cooling - and the Alpine HT cooling tower for inner cooling. The system made its debut at K2019 last year.

The cooling ring is a key factor in energy-efficient film production, says the company.

"For the Alpine CRX series, we opted for a low-counterpressure system," said Holger Niemeier, managing director and head of film technology at Hosokawa Alpine. "This allows us to make more efficient use of the available cooling capacity and increase line throughput."

The base body is fully thermally insulated and

**Main image:**  
**W&H unveiled its licensing deal with Addex during K2019**



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helps to increase energy efficiency. The insulation avoids condensation forming on the outer surface. The cooling ring is also characterised by optimised air distribution, resulting in improved film tolerance, said the company. The Alpine CRX only a single cooling air supply line, so is easily integrated into the system.

Inner cooling is provided by the Alpine HT cooling tower. New nozzle geometry reduces the counter-pressure, which optimises the use of the available cooling capacity. A patented monomer collection system for paraffin retention is also used. The system also prevents paraffin splashes on the film bubble, which lengthens cooling tower cleaning intervals. High volumetric flow helps to raise line output.

### Direct control

Bubble control is another important aspect of blown film production, and US-based **DR Joseph** showcased a number of technologies in this area at K2019 - including layflat calibration and neck height control.

Its DRJ 3G-IBC - which can be retrofitted to existing blown film lines - helps to improve the layflat

tolerance and increase cooling rates. This, in turn, can help to raise production rates. It uses a flat width measurement device placed near the winder, which automatically calibrates and compensates for film stretch and shrink as it makes its way down the tower.

Many factors cause degrees of stretching and shrinking, which affect the width of the film as it is wound: using automatic layflat calibration (ALC) boosts the precision of layflat tolerances, simplifying width management operations via automation - while improving user safety.

Neck height variance on high stalk bubbles can lead to variance in dart impact properties. As process conditions such as ambient temperature change, so will neck height - resulting in off-spec dart impact and layflat. DRJ has corrected the issue of drifting neck height with a new neck height control feature, which can be integrated into its width control systems.

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*Plastic pouches are now a common form of packaging - and developers are working hard to improve their recyclability by designing single-material versions*

# Standing start: latest news in plastic pouches

Where once the metal can ruled the packaging roost, these days many products - from oxygen-sensitive foods to detergent tablets - are supplied in a stand-up pouch (SUP).

Despite their many useful qualities - chiefly their convenience, light weight and high performance - SUPs have recently come under fire for their lack of recyclability. Often, the combination of barrier and mechanical property can only be achieved through multiple layers of different materials - which proves to be a recycling challenge.

However, many producers of SUPs - and materials and machinery suppliers - have risen to the challenge. Many are involved in projects to develop single-material SUPs.

## Recyclable PP films

**Profol** says that its CPPouch family of films provide flexible packaging pouch structures that are completely recyclable - and do not require the use of foil or solvents.

The films meet the packaging industry's need for highly functional, single-material solutions that can be more easily separated and recycled, says the company.

CPPouch polypropylene film - for stand-up and pillow pouches - offers high functionality and differentiated performance for narrow web and traditional pouch converting markets. As well as improved sustainability and recyclability, PP-based pouches can offer operational efficiency and can be designed for low haze, directional tear and higher stiffness advantages in comparison with PE pouches.

To expand on solutions where this pouch film can be used, a version suitable for retort applications is being developed. The films also provide a barrier to moisture and options for an oxygen barrier.

"Our CPPouch gives manufacturers an important tool for improving sustainability of packaging materials," said Mark VanSumeren, director of new business development at Profol.

CPPouch solutions include a coextruded, PP-based film material. There are no extra lamination steps and no need for adhesive curing, which allows pouch manufacturers to increase production speed and reduce costs, says the company.

## Quad seal pouch

Flexible packaging specialist **ProAmpac** has developed a recyclable quad-seal, flat bottom bag

**Main image:**  
**Profol's CPPouch family of films provide a flexible structure that is completely recyclable**



**Above: Emsur's three-layer compostable bag boasts high barrier performance**

for a range of organic fertiliser from High Island Organics.

To make the bag, ProAmpac collaborated with its customer. ProAmpac refers to the bag as ProActive Recyclable Quadflex, part of its ProActive Sustainability product offerings.

"To be among the first in the industry to design a quad-seal bag that provides durability and sustainability - without sacrificing one for the other - makes this a remarkable innovation," said Maria Halford, vice president of global marketing for ProAmpac.

Vance Fortenberry, director of product development for ProAmpac, added: "One of the key challenges we faced was how to create a recyclable structure that met seal strength requirements and provided the barrier needed to lock in product freshness."

The recyclable PE bag features the benefits of ProAmpac's durable Quadflex bag format, and ProActive recyclable film structure. Approved for store drop-off recycling through PE recycling streams, the premium quad-seal, flat bottom format features five panels of billboard space to deliver enhanced store shelf presence, and a sturdy design to allow the pouch to free stand on the shelf.

Other benefits include: reclosable options, such as an Aplix zipper for ease of use while preserving product freshness; and an optional clear window or side gusset option for product visibility. It can accommodate filled product up to 15lbs and can be used in a variety of applications, including lawn & garden, dry snacks and pet food, cereals, confectionery and frozen food.

**Compostable barrier**

**Emsur** of Spain has developed a compostable bag with a high-performance triplex structure - using

adhesives and special inks that are also compostable.

It was created in response to customer demands for a two- or three-layer barrier bag of sustainable origin, with compostable characteristics.

The bag can be transparent, opaque or colour-printed, in gloss or matt, with a range of visual and sensory effects to enhance product differentiation.

As well as its sustainability, the main advantage is the high barrier performance compared to other compostable plastics.

The laminated structure was specially designed for the coffee market but can be applied to other products such as dry food, snacks, confectionery and pet food. It is suitable for both rotogravure and flexographic printing and can be made at Emsur facilities worldwide.

Emsur says that the concept could be adapted for other applications or structures - including both flexible and rigid formats.

**Mono material options**

At last year's FachPack show, **Jindal Films** showcased a variety of barrier and sealing technologies to help switch from non-recyclable laminates (such as those containing PET) to mono-material alternatives. A number of the technologies were shown in plastic pouch applications.

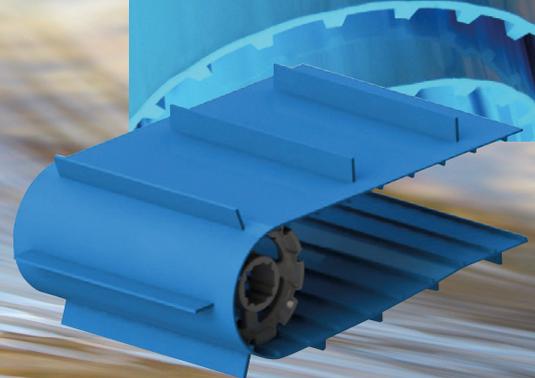
Metallyte 16MM883 is an ultra-high barrier (UHB) vacuum metallised OPP film used in three-ply laminates to replace thin aluminium foil or high barrier metallised PET webs. It is designed for long shelf life products by delivering a high barrier to light, moisture (WVTR 0.1g/m<sup>2</sup>/day), gases (OTR 0.1cc/m<sup>2</sup>/day), aromas and mineral oils. At the show, it ran as part of a three-ply all-OPP laminate on a horizontal stand-up pouch machine from SN Maschinenbau.

Alox-Lyte 16AO893 and AO894 are clear high barrier vacuum AIOx-coated OPP films for barrier applications in two- or three-ply laminates that require transparency. Alox-Lyte films can replace PET-AIOx or PET-SiOx containing laminates to deliver mono-material PP-rich or mixed PO solutions. They provide high clarity, yet with high moisture and gas barrier properties - as well as an effective barrier to aromas and mineral oil. AO893 was seen running as part of a three-ply, all-OPP clear laminate on a vertical stand-up pouch (SUP) machine from Wolf Verpackungsmaschinen.

Jindal also showed its enhanced sealing OPP co-extrusion technology - which was deployed in Bicolor SUP490 film and used in applications for flat pouch, stand-up pouches and VFFS formats.

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**Right: Dow and Mespack are working to understand how stand-up pouches can better be designed for recyclability**

SUP490 has a high seal strength - a three-fold improvement compared with common co-ex OPP films, said the company.

**SUP collaboration**

At last year’s K2019 show, a multi-company collaboration demonstrated how stand-up pouches (SUPs) can be made from a mixture of virgin and recycled polyethylene (PE) materials.

The collaboration, between **ExxonMobil**, **Hosokawa Alpine**, **Erema** and **Henkel**, led to an SUP package that combines 30% recycled PE - from the SUPs themselves - and 70% virgin resin. They are aimed at non-food applications such as detergents.

“Flexible packaging is a highly complex product requiring different material layers to enable it to meet a wide range of requirements,” said Marcin Lapaj, global business development manager for circular economy at Henkel. “This complex mix of materials poses the main challenge for recycling flexible packaging today.”

By choosing appropriate materials and processing technologies allowed the creation of the all-PE SUP.

“ExxonMobil introduced full PE laminated SUP packaging solutions as a replacement for conventional multi-material structures which can be difficult to recycle,” said David Hergenrether, vice president of polyethylene at ExxonMobil Chemical. “These full-PE SUPs can be easily recycled where programmes and facilities to collect and recycle plastic films exist. This recycled PE is now being used in combination with our PE polymers to manufacture new SUPs, helping customers create sustainable solutions.”

The SUP films are fabricated on Hosokawa Alpine film MDO lines with Trio technology - which orientates the film and improves both optical and mechanical properties. In addition, solvent-free adhesives from Henkel allow the homogenous laminates to be recycled mechanically. Once the SUP has been used, it is recycled using Intarema TVEplus technology from Erema, to produce recycled PE that can be used in new laminated SUP packaging.

ExxonMobil’s Exceed XP material helps to retain the properties of the film when recycled content is added to the formulation.

**Horizontal efforts**

**Dow** is working with **Mespack** - a leading manufacturer of horizontal form fill and seal (HFFS) packaging machines - to develop a greater understanding of the processability and machinability of stand-up pouches to be designed



for recyclability. Jointly developed PE-based prototypes were seen on Dow’s stand at K2019.

The collaboration will see the companies evaluate various mono-material packaging structures to optimise machine-packaging interaction. Over the next five years, they expect to identify and develop key machinability and multilayer film structure parameters to enhance productivity, optimise machine settings as a basis for more sustainable packaging.

Applications to be assessed range from SUPs for baby food, condiments, and detergents, to personal care applications such as shampoos, shower gels, or body lotions.

Dow recently installed a Mespack 180 FE HFFS machine at its Pack Studios location in Freeport, Texas. The companies are also working on trials at Mespack’s technical centre in Barcelona, making films and laminates for testing on Mespack machinery.

“With about 86 billion stand-up pouches being produced every year, there is a clear opportunity to make them recyclable, so that this flexible packaging format can play a key role in the circular economy,” said Peter Sandkuehler, global application technology leader for Dow’s Packaging and Specialty Plastics business. “Our development work with Mespack can help enable the fast commercialisation of pouches made of PE-based films.”

**Mono-material barrier**

In a separate project, also shown at K2019 last year, **Dow** showcased a selection of PE-based pouches with medium-to-high barrier - in a joint project with **Bobst**, **Hosokawa Alpine** and packaging producer **Elba**.

The packaging was made with machine direction oriented (MDO) films that are designed for recyclability.



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“One of the biggest challenges in designing PE-based packaging for recyclability is to incorporate barrier functionalities that are today carried out by different materials in multi-material structures,” said Jaroslaw Jelinek, EMEA marketing manager at Dow Packaging & Specialty Plastics. “We have developed our next generation of resins to enable the production of PE-based mono-material packaging solutions.”

The combination of MDO conversion machinery with Dow’s PE-based polymers gave similar production efficiency to existing multi-material packaging structures, said the company.

A number of Dow products were used in the solution. Its Elite resins offer high stiffness, thermal resistance, good clarity and a wide enough orientation window - which is important for the MDO process - while its Nucrel copolymers create a suitable surface for the coating and metallisation. Innate resins add balanced toughness and stiffness - plus higher dimensional performance - while Affinity sealants provide a low seal temperature and a good operating window on the packaging line.

**Film analysis**

**Innovia Films** has worked with Interseroh - a German recycling and consulting company - to have its new high barrier BOPP Propafilm Strata SL film evaluated. The film has been awarded a ‘very good’ rating and awarded the ‘Made for recycling’ logo.

Interseroh analyses and evaluates packaging based on sound criteria along with the entire after-life processes - collection, sorting, recycling and processing - says Innovia. The result of the analysis is a scale that determines whether the packaging is non-recyclable through to very good.

Alasdair McEwen, global product manager for packaging at Innovia Films said: “This certification proves the recyclability of our new Strata BOPP film. As it is a mono structure, the film performs much better in recycling than composite films and can be added to the PP closed loop and reused.”

Propafilm Strata SL provides an effective barrier to aroma, mineral oils and oxygen even at high relative humidity levels, to increase shelf life and reduce food waste. It is glossy, food contact compliant and chlorine free. The film is suitable for

use in a range of markets, is printable and offers a wide seal and hot tack range.

**Finished article**

Packaging group **Mondi** of Austria teamed up with Reckitt Benckiser (RB) to launch recyclable, mono-material flexible plastic packaging for its Finish dishwasher tablets Quantum Ultimate.

This product had previously used a multilayer, PET/PE laminate pouch construction that was not recyclable. With RB’s commitment to make 100% of its plastic packaging reusable or recyclable by 2025, this had to change.

“We worked closely with RB to find the best solution and make this product fully recyclable without sacrificing the high-end look, feel and performance,” said Olivier Seux, global key account manager at Mondi Consumer Flexibles.

The packaging uses Mondi’s BarrierPack Recyclable, which combines a high oxygen and moisture barrier with ease of recyclability.

“It was vital that the stand-up pouch was rigid enough with a smooth appearance, while offering exact colour matching and a quality feel,” said Seux.

In similar fashion, BarrierPack Recyclable helped Yarrow

Organic Petfood to develop more sustainable packaging for its brands. Yarrow wanted to introduce a fully recyclable pouch to replace a multi-layer laminate packaging - which was difficult to recycle - to keep it in a circular economy. The pouch also needed to be resealable to keep pet food and snacks fresh, while adding convenience for pet owners.

“With this material from Mondi, we make another step in reducing our carbon footprint,” said Bas van Tongeren, CEO of Yarrow.

**Passing the test**

More recently, Mondi developed high-barrier triplex laminate packaging for Qiagen’s Coronavirus test kit. The test cartridge kit - when loaded into the company’s QIAstat-Dx syndromic testing platform - can identify the Coronavirus within an hour.

Mondi has an ongoing relationship with Qiagen and is providing packaging for the test cartridges using a customised design. The white, unprinted,

**Right: Mondi used its BarrierPack Recyclable material to develop mono-material flexible plastic packaging for a range of petfood**





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multilayer pouches consist of a polyester/aluminium/polyethylene (PET/Alu/PE) construction to provide the necessary protection from light and moisture so that the test kits are not compromised before they are used.

"We worked closely with Qiagen to understand how best to ensure test kits are packaged safely," said Emilio Vidri, sales director for Europe at Mondi Consumer Flexibles. "We are now ready to scale up production of this product and meet the new demands."

### Ultra reliable

Also in the medical field, **Amcor** says that its Ultra pouches are now certified for sterilisation using either hydrogen peroxide - or steam at 134°C. The accreditation means that hospitals can rely on a single product for all their sterilisation needs, says Amcor.

Hospitals typically use steam sterilisation, reserving hydrogen peroxide for instruments that are sensitive to high temperatures. Traditionally, different packaging is used, depending on the process and the nature of the instruments being sterilised. This requires hospitals to hold a large



variety of stock and additional staff time to support these processes, says Amcor.

"We've already had very positive feedback from customers, many of whom are benefitting from increased efficiencies thanks to Ultra's superior seal-strength and burst-resistant durability," said Max Baruch, hospital sales director at Amcor. "With this new accreditation we're confident we are delivering the ultimate in convenience."

**Above: Mondi has developed high-barrier triplex laminate packaging for a Coronavirus test kit**



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Other benefits of the pouches include: puncture-resistant durability, as they are made from a tough porous web and a clear film; speed of use, as they are simpler and quicker to pack and process than traditional wrap systems; and a user-friendly design, as each pouch has a window of resilient clear film, allowing users to visually confirm its contents.

The new accreditation gives assurance that Ultra pouches comply with the latest international and European EN 868 and ISO 11607 standards, including the Sterile Barrier System (SBS) requirement. This makes them suitable for use with all reusable surgical devices sterilised by either steam or hydrogen peroxide.



**In the chamber**

**AlliedFlex Technologies**, a manufacturer of equipment to make stand-up pouches (SUPs), has developed a new machine specifically designed for Chamber Pouch - a dual chamber SUP developed by the company of the same name.

The Allied Flex FLX Alpha XL for Chamber Pouch is a small footprint machine designed for product development, R&D, short runs and other low-volume environments. It is the industry's first horizontal fill/seal machine specifically engineered around the properties of the patented Chamber Pouch format.

**Chamber Pouch** says that its patented design of SUP enables food brands to create new product pairings, combinations, and innovations in many categories.

"I see Chamber Pouch as a potential game-changer for club-store environments," said Dennis Calamusa, president and CEO of AlliedFlex. "The package offers new opportunities for brands to showcase new and existing products."

Chamber Pouch adds that Fit Foods - a Canadian nutritional supplement company - has released its first Chamber Pouch-based nutritional

supplement product. Fit Foods has created a two-flavour version of its Mutant nutritional supplement.

Jim McMahon, owner of Fit Foods, said: "This has a trail-blazing effort. The result is a new and unique product - and also the first-ever product of its kind. The added consumer convenience puts two of our proteins into a single product. We see Chamber Pouch as a gamechanger."

The new Chamber Pouch based products will be filled in Fit Foods' 250,000 sq ft facility in western Canada and ship globally.

**Above:**  
Amcor's Ultra pouches can be sterilised using both hydrogen peroxide and high temperature steam

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## BARRIER FILM

## Paper tube-pouch relies on high barrier plastic

Toppan Printing has developed a paper tube-pouch – a new paper-based version of the existing tube-pouch that is shaped like a tube and as easy to squeeze as a pouch. It is ideal for use in the food, toiletry, and pharmaceutical sectors, and full-scale sales are scheduled to be launched in Japan in this year.

Due to the use of thinner film material, it is easier to squeeze and uses 30% less plastic than the typical tube that is widely used for toothpaste, says the company. The new

tube-pouch maintains functionality while making possible a 50% reduction in plastic volume.

Coupled with a redesign of the head section, total plastic use has been reduced by 65%. Despite this, the tube-pouch maintains its shape – even when the volume of content inside decreases. The use of Toppan's proprietary GL Barrier film on the inner surface ensures high barrier performance for items as food and cosmetics.

The body of the paper tube-pouch has a thickness of just 0.1 mm and a special

folded structure. Combined with a horizontal design for the plastic spout, this makes it easier to completely squeeze out the contents, says Toppan.

"This represents a new solution that can meet the needs of manufacturers, consumers, and society as a whole by reducing impact on the environment, enhancing user-friendliness, and offering new possibilities for design," said Shingo Wada, general manager of business strategy in Toppan's western Japan division.

➤ [www.toppan.com/en/](http://www.toppan.com/en/)

## RECYCLING



## Carbon black alternative

BASF has developed Sicopal Black K 0098 FK, a colorant which it says allows smart recycling of dark plastics such as food containers.

Carbon black is typically used in these applications, but hinders recycling because it absorbs near infrared (NIR) technology – which is commonly used by sorting systems. This means that the plastic is more likely to be incinerated or landfilled, says BASF.

However, the Sicopal grade overcomes this – so can act as an effective replacement in place of carbon black.

"Our research and development team has taken on the industry need for recyclable black plastics that can pass through infrared sorting at materials recycling facilities," said Christof Kujat, head of global technical industry management for plastics at BASF.

➤ [www.basf.com](http://www.basf.com)

## STRETCH FILM

## Pallet film based on LDPE from renewable resources

Doxa Plast of Sweden has developed a range of stretch films from renewable resources, using materials supplied by Dow Chemical.

Reborn, the new range of stretch films from Doxa, uses Dow's bio-based linear low-density polyethylene, Elite 5230GC R enhanced polyethylene resin, which is made from renewable feedstock. The feedstock comes from residues of paper production from sustainably managed forests in Finland. It does not compete with the



human food chain, and no extra land is required for its production. The films are made in Doxa's factory in Sweden.

The new film range is optimised for downgauging without affecting functionality. Using a

patented technology, Doxa offers thin stretch films down to four microns of thickness, while maintaining high level performance for improved load pallet stability and reducing overall packaging material.

➤ [www.dow.com](http://www.dow.com)

POLYCARBONATE

# Opaque sheet repels surface bacteria



SABIC says that its Lexan Cliniwall AC6200 sheet provides an anti-bacterial and hygienic surface for areas such as hospital interiors.

The launch of the non-chlorinated, non-brominated opaque sheet comes as there is a rising need for infection prevention and sanitation control. Typical applications include hospitals, clinics, homes for the elderly, primary care centres, laboratories and pharmaceutical factories.

When tested over a 24-hour period at 35°C, the sheet showed greater than 99.99% reduction in MRSA and 99.999% reduction in *E. Coli* on its surface.

“The anti-bacterial material provides a layer of protection to interior wall cladding against the spread and multiplication of potential bacteria, making it an excellent choice for patient care and other hygiene-sensitive clinical operations,” said Peter van den Bleek, product manager at SABIC.

> [www.sabic.com](http://www.sabic.com)

PET

## Flame retardant PET film

DuPont Teijin Films has introduced a range of clear, flame-retardant polyethylene terephthalate (PET) films.

Now available from DuPont, Melinex FR32x PET films have achieved UL’s VTM-0 flame rating classification, in accordance with ANSI/UL 94 and are halogen-free.

“Our team has succeeded in bringing these novel VTM-0 rated films from R&D to production, and now we can provide cost-effective flame retardant polyester film solutions to our customers in large quantities,” said Scott Gordon, business development manager.

> [www.dupontteijinfilms.com](http://www.dupontteijinfilms.com)

PACKAGING FILM

## Barrier packaging allows 35% thickness reduction

Wentoplex Ultra is a new type of barrier packaging film from Wentus Kunststoff of Germany – which claims to use less material than comparable products.

The film offers high protection thanks to a superior oxygen barrier – and is suitable for a wide range of products from red meat to vegan produce. In addition, it has good anti-fog properties to further enhance its optics.

The film is made entirely from polyolefins, to allow better recycling than composite materials that use PET or polyamide, says the company. Material use can also be reduced by up to 35% compared to heavier conventional structure. This conserves

resources and reduces costs through lower waste disposal fees, it says.

The film can be used in the tray-sealing process as it seals to all common materials with high seal integrity. Alternatively, it could also be used to produce HFFS (and VFFS)

flow-wrap packs, such as minced meat packs.

Compared to conventional lidding film, it reduces the amount of plastic material used, which helps to reduce material costs, pack weight and the need for shelf space.

> [www.wentus.de](http://www.wentus.de)





# Plastics Regulations

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## MACCHI: FILM EXTRUSION



This 28-page brochure from Macchi covers the company's wide range of film extrusion technologies including coextrusion lines, wide webs, die heads, take offs, winders, trim recovery and control systems.

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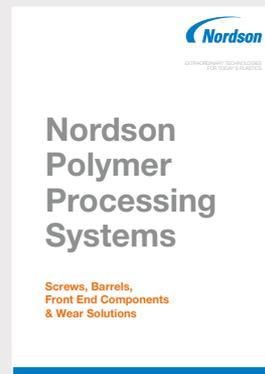
## COLINES: BARRIER FILMS



This new brochure from Colines focuses on extrusion lines for the production of barrier films for vacuum and modified atmosphere packaging to preserve foodstuffs and medical products.

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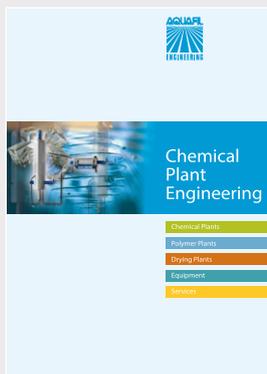
## NORDSON: SCREWS & BARRELS



In this Nordson Polymer Processing Systems brochure, find out about Xaloy bimetallic extrusion screws and barrels, designed to meet process requirements, help optimisation, combat wear, boost output, and improve and maintain quality.

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## AQUAFIL: PLANT ENGINEERING



This 12-page brochure from Aquafil Engineering details its comprehensive range of chemical plant engineering capabilities, which include polyamide polymerisation, polyester condensation and polymer drying installations.

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## ADVERTISE IN THIS MAGAZINE



An advertisement in Film and Sheet Extrusion magazine is a highly cost effective way to reach key decision makers in the global plastics extrusion industry. Download our 2019 media pack to find out more about upcoming features, ad rates and distribution.

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If you would like your brochure to be included on this page, please contact Claire Bishop [claire.bishop@ami.international](mailto:claire.bishop@ami.international). Tel: +44 (0)1732 682948

# Learn more about AMI's upcoming conferences

Click on the relevant brochure cover or link to download a PDF of the full conference programme

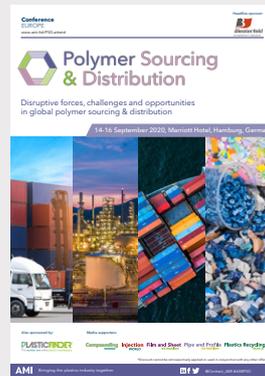
## STRETCH & SHRINK FILM



The 17th edition of AMI's Stretch & Shrink Film conference will take place on 14-16 September 2020, in Barcelona, Spain. This is the only platform that brings together a consortium of industry leaders to share essential information on key issues, technical developments and market trends.

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## POLYMER SOURCING & DISTRIBUTION



The AMI event specifically created for companies involved at every stage of the European polymer supply, Polymer Sourcing & Distribution takes place in Hamburg on 14-16 September 2020, and reviews trends in sourcing options for both commodity and engineering resin grades.

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## PLASTICS RECYCLING TECHNOLOGY



Exploring the future of plastics recycling and finding new ways to boost productivity, quality and profitability are the key reasons to attend AMI's Plastics Recycling Technology event, which takes place for the third time on 16-17 September 2020 in Vienna, Austria.

[CLICK HERE TO DOWNLOAD](#)

## BIAX FILM



The launch Biax Film event on 28-30 September 2020, in Madrid, Spain, is the only global conference dedicated exclusively to the bi-oriented film industry, covering the entire BOPP, BOPET, BOPA and BOPE supply chain.

[CLICK HERE TO DOWNLOAD](#)

## SINGLE-SERVE CAPSULES



The fourth edition of Single-Serve Capsules on 29-30 September 2020 in Berlin, Germany brings together the entire supply chain to evaluate and discuss the trends, challenges and opportunities facing the single-serve capsules industry.

[CLICK HERE TO DOWNLOAD](#)

## PLASTICS REGULATIONS



The 4th edition of Plastics Regulations provides advice on a range of compliance issues at one event. The event takes place on 2-4 November 2020 in Cologne, Germany. The conference provides an ideal environment for regulatory updates.

[CLICK HERE TO DOWNLOAD](#)

To see our full line-up of more than 50 plastics industry events over the next 12 months, please visit [www.ami.international/events](http://www.ami.international/events)

## Polykar

<b>Head office:</b>	Saint-Laurent, Quebec, Canada
<b>CEO:</b>	Amir Karim
<b>Founded:</b>	1987
<b>Ownership:</b>	Private
<b>Employees:</b>	Around 110
<b>Turnover:</b>	Around \$50 million
<b>Profile:</b>	Polykar was founded in 1987 as a family business – and remains that way. Its portfolio includes polyethylene film, recycled garbage bags, compostable packaging, food-approved bags and industrial strength packaging.
<b>Product lines:</b>	The company supplies both PE film and semi-finished products such as bags and sacks. Its PE converter film is used in a range of applications, including bread bags, courier bags and stand-up pouches. Similarly, it offers converter film made from bio-based, compostable resins. Its garbage bags include its Premium line, which have high strength and tear resistance, and its Mint-X range – to deter rodents. Its industrial packaging includes bags and sheets on rolls, box and gaylord liners many options for customisation. Some of its products also include recycled content.
<b>Factory locations:</b>	All of Polykar's products are currently made at its 105,000 sq ft plant in Saint-Laurent in Quebec – where it recently added a new line to take multi-layered film production to around 10,000 tonnes/year. However, the company is now planning to build a new plant in Edmonton, Alberta. The new plant, due for completion in 2021, will have a capacity of nearly 14,000 tonnes/year. The proposed three-acre site – with a 50,000 sq ft factory – will supply customers in western Canada and the USA.

To be considered for 'Extruder of the Month', contact the editor on [lou@filmandsheet.com](mailto:lou@filmandsheet.com)

## Film and Sheet FORTHCOMING FEATURES EXTRUSION

The next issues of Film and Sheet Extrusion magazine will have special reports on the following topics:

### July/August 2020

Bioplastics  
Converting/bag making  
Stretch & shrink film  
Masterbatch developments

### September 2020

Biaxially oriented film  
Thermoforming  
PVC plasticisers  
Laboratory extruders

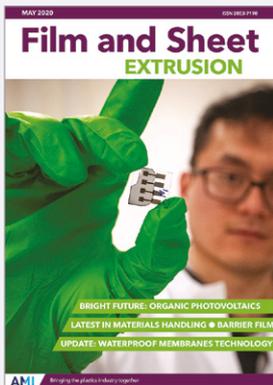
Editorial submissions should be sent to Lou Reade: [lou@filmandsheet.com](mailto:lou@filmandsheet.com)

For information on advertising in these issues, please contact:

Claire Bishop: [claire.bishop@ami.international](mailto:claire.bishop@ami.international) Tel: +44 (0)1732 682948  
Levent Tounjer: [levent.tounjer@ami.international](mailto:levent.tounjer@ami.international) Tel: +44 (0)117 314 8183

# Keep informed: read our latest editions

AMI publishes five process-specific FREE plastics industry magazines. Simply click on the cover below to read each magazine. Or download the issue in the relevant Apple or Android app



## Film and Sheet May 2020

The May issue of Film and Sheet Extrusion features new developments in materials handling and looks at innovations and opportunities in waterproof membranes, barrier film and organic solar cells.

[> CLICK HERE TO VIEW](#)



## Film and Sheet April 2020

The April edition of Film and Sheet Extrusion looks at how chemical recycling could help boost recycling rates for film and sheet waste. Plus in-depth features on agricultural film, recent advances in flat die technology and the latest in slitters and winders.

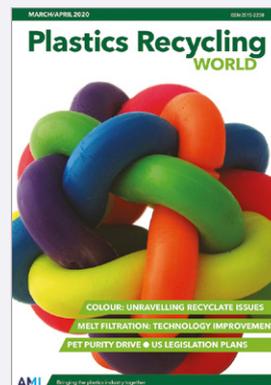
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## Compounding World May 2020

The May 2020 edition of Compounding World looks at the latest developments in natural fibres that are helping deliver high performance bio-compounds. Other features cover the burgeoning 3D printing materials sector, engineering plastics and wire and cable compounds.

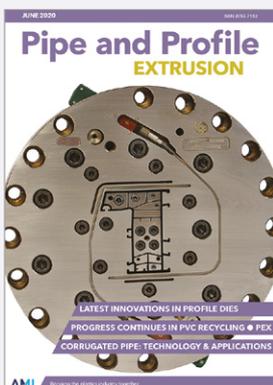
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## Plastics Recycling World March/April 2020

The March/April edition of Plastics Recycling World looks at the challenges of effective colouring, plus the latest developments in melt filtration and PET recycling. It also updates on US recycling legislation moves.

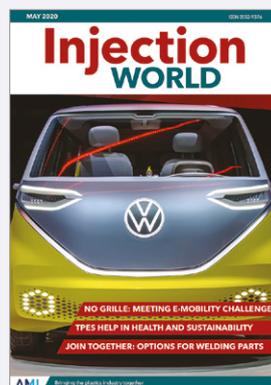
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## Pipe and Profile June 2020

The June 2020 edition of Pipe and Profile Extrusion looks at how the rise in digital operations is influencing the way that profile dies are being designed and operated. Plus features on corrugated pipe, PEX pipe and PVC recycling.

[> CLICK HERE TO VIEW](#)



## Injection World May 2020

The May 2020 edition of Injection World magazine explores how the shift to electric and hybrid vehicles is placing new demands on producers of injection moulded parts. We also take a look at the latest developments in plastics welding and TPE applications.

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Pipe and Profile  
EXTRUSION

Injection  
WORLD

Plastics Recycling  
WORLD

## GLOBAL EXHIBITION GUIDE

2020	<b>7-8 October</b>	Plastics Extrusion World Expo Europe, Essen, Germany	<a href="https://eu.extrusion-expo.com">https://eu.extrusion-expo.com</a>
	<b>13-17 October</b>	Fakuma, Friedrichshafen, Germany	<a href="http://www.fakuma-messe.de">www.fakuma-messe.de</a>
	<b>29-31 October</b>	MECSPE, Parma, Italy	<a href="http://www.mecspe.com">www.mecspe.com</a>
	<b>4-5 November</b>	Plastics Extrusion World Expo USA, Cleveland, USA	<a href="http://www.extrusion-expo.com/na/">www.extrusion-expo.com/na/</a>
	<b>8-11 November</b>	Pack Expo, Chicago, USA	<a href="http://www.packexpointernational.com">www.packexpointernational.com</a>
	<b>10-13 November</b>	Plastimagen, Mexico City, Mexico	<a href="http://www.plastimagen.com.mx">www.plastimagen.com.mx</a>
	<b>23-26 November</b>	All4Pack, Paris, France	<a href="http://www.all4pack.com">www.all4pack.com</a>
2021	<b>1-5 December</b>	Equiplast, Barcelona, Spain	<a href="http://www.equiplast.com">www.equiplast.com</a>
	<b>2-4 December</b>	Plastic Expo, Tokyo, Japan	<a href="http://www.plas.jp/en-gb.html">www.plas.jp/en-gb.html</a>
	<b>25 February-3 March</b>	Interpack, Dusseldorf, Germany <b>NEW DATE</b>	<a href="http://www.interpack.com">www.interpack.com</a>
	<b>13-16 April</b>	Chinaplas, Shenzhen, China	<a href="http://www.chinaplasonline.com">www.chinaplasonline.com</a>
	<b>4-7 May</b>	Plast 2021, Milan, Italy	<a href="http://www.plastonline.org/en">www.plastonline.org/en</a>
	<b>17-21 May</b>	NPE 2021	<a href="http://www.npe.org">www.npe.org</a>
<b>29 June-1 July</b>	Interplas, Birmingham, UK <b>NEW DATE</b>	<a href="http://www.interplasuk.com">www.interplasuk.com</a>	

## AMI CONFERENCES

<b>18-19 August 2020</b>	Agricultural Film, San Diego, USA
<b>14-16 September 2020</b>	Stretch & Shrink Film, Barcelona, Spain
<b>14-16 September 2020</b>	Polymer Sourcing, Hamburg, Germany
<b>22-23 September 2020</b>	Stretch & Shrink Film Asia, Bangkok, Thailand
<b>28-30 September 2020</b>	Biax Film, Madrid, Spain
<b>3-4 November 2020</b>	Chemical Recycling, Hamburg, Germany
<b>9-11 November 2020</b>	Agricultural Film, Barcelona, Spain
<b>16-18 November 2020</b>	Waterproof Membranes, Bonn, Germany
<b>17-19 November 2020</b>	Multilayer Flexible Packaging, Vienna, Austria

For information on all these events and other conferences on film, sheet, pipe and packaging applications, see [www.ami.international](http://www.ami.international)

 **PLASTICS RECYCLING**  
WORLD EXPO

 **POLYMER TESTING**  
WORLD EXPO

**7 - 8 October, 2020**  
**ESSEN, GERMANY**

 **PLASTICS EXTRUSION**  
WORLD EXPO

 **COMPOUNDING**  
WORLD EXPO

**4 - 5 November, 2020**  
**CLEVELAND, OHIO**

[www.ami.international/exhibitions](http://www.ami.international/exhibitions)