

01/2020

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# EXTRUSION INTERNATIONAL

USA



**Guill**  
EXTRUSION TOOLING

Single-Point Concentricity Adjustment

## Profile stacking machine PRO



### Profile length measurement during extrusion

Using special sensors the length of individual profiles can be detected before the formation of a profile layer to stack. The measured length can be used for checking and correcting the cutting unit of the extrusion line or for documentation (quality assurance) of the produced profile lengths.

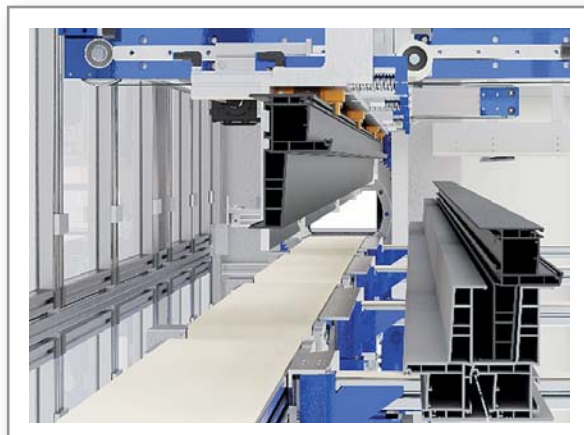
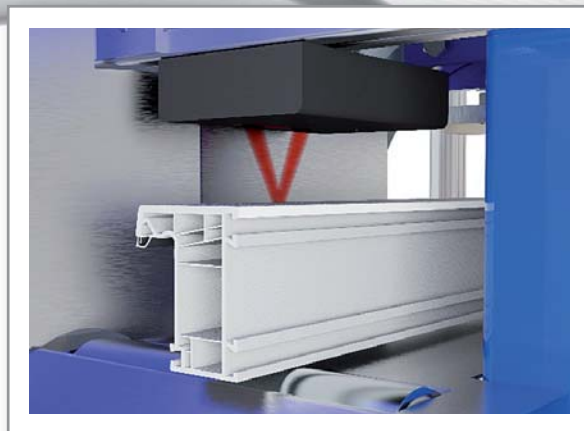
### Weight determination during extrusion

Special weighing units can be used to weigh individual profiles before forming a profile layer. The determined weight can be used to optimize the extrusion process.

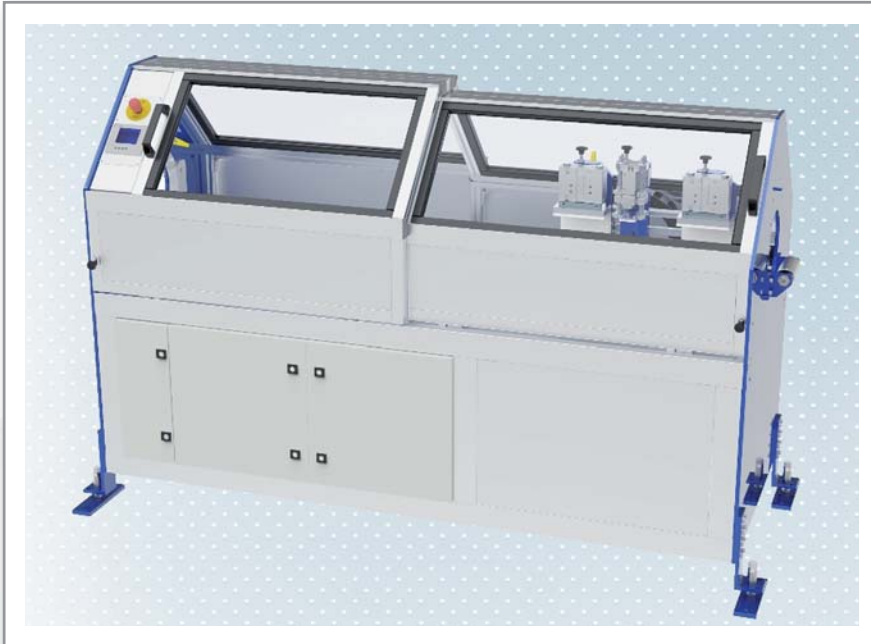
### Stacking special profiles

STEIN Maschinenbau offers technical solutions for stacking heavy and large monoblock profiles.

Based on decades of experience, unusual profile geometries or special layer patterns can be evaluated by STEIN for their automated stacking.



## Laminating foil cutting unit - turnable

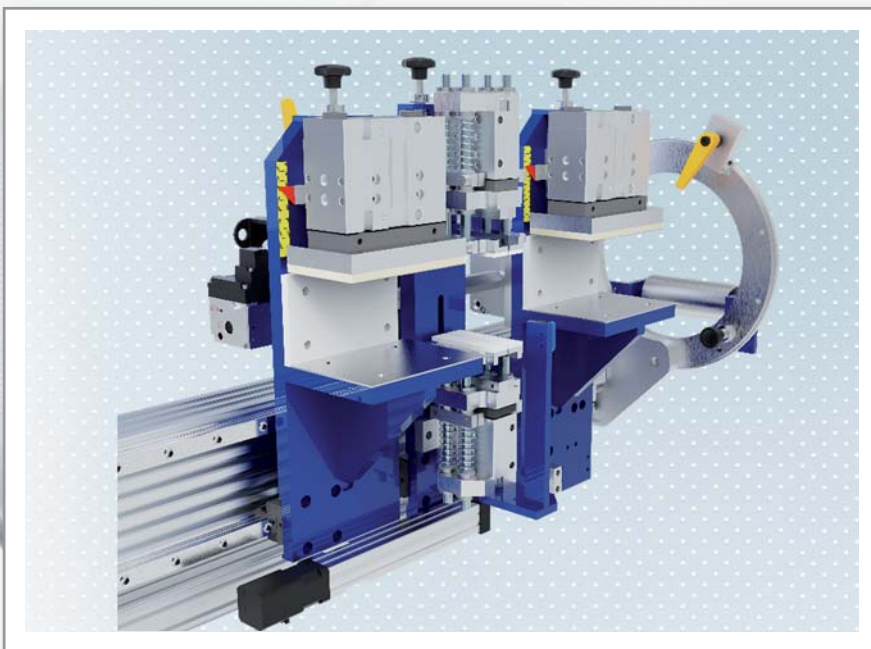


### Foil cutting for laminating lines

For the offline lamination of profiles single profile sections are provided to the laminating line **end to end** and are laminated with foil continuously.

After the lamination process the laminating foil has to be cut to separate the profiles again.

The **laminating foil cutting unit** detects the profile ends, makes a gap in between the ends and cuts the laminating foil automatically.



### Advantages of the laminating foil cutting unit

- No damage of the profiles when cutting the laminating foil.
- No interference of the cutting process into the laminating process.
- Turnable cutting unit for different film orientations.
- No danger to employees due to manual cutting.

**„STEIN BLUE-LINE – for a sustainable future“** stands for sustainable and energy-efficient equipment.

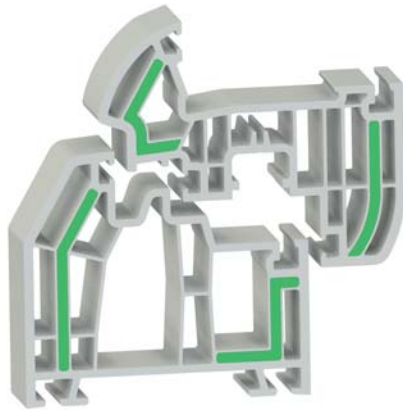
Almost 100% domestic production and the high degree of manufacturing penetration guarantee compliance with even the most stringent of demands.



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# 38

Modern insulation is a key to effective climate protection, and this also applies to window profiles in new and renovated buildings. BASF has developed an Ultradur® that can be used for co-extrusion with PVC and is now available with a significantly improved property profile.



# 44

With the Ultraplex 1000 UP fine impact mill, Hosokawa Alpine will show a versatile mill for the size reduction of soft materials to 3.5 Mohs' hardness at wire 2020 in Düsseldorf, Germany. Dependent on the feed material, the fine impact mill can be equipped simply and quickly with different, interchangeable grinding elements.

ZwickRoell offers a wide range of possibilities for automation in materials testing. Testing systems range from efficient automation of small series tests using collaborating robots in the lab to fully automated testing laboratories that work around the clock.

# 37

ing robots in the lab to fully automated testing laboratories that work around the clock.



# 40

In late March 2020 the world's No. 1 trade fairs for wire, cable and tube, wire and Tube, will once again open their doors in Düsseldorf. What's new about the two trade fairs? There are a number of new features at the industry highlights wire and Tube but also at the Düsseldorf Exhibition Centre proper. Friedrich-Georg Kehrer, Global Portfolio Director for Metals and Flow Technologies, tells us more in this interview.



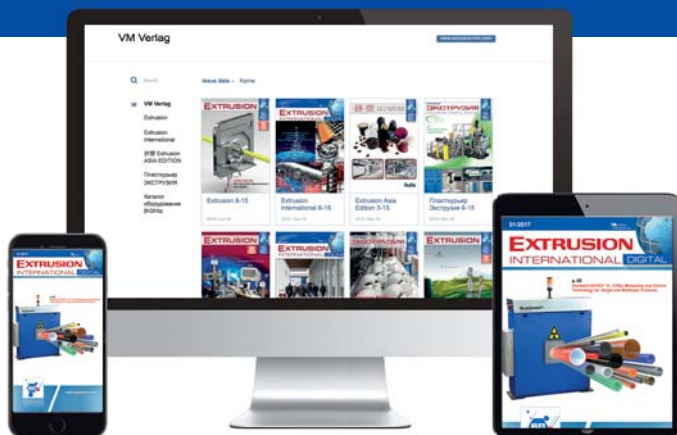
With the new inline gauge ProfilControl 7 S **48** Corrugated Tube developed by PIXARGUS it is now possible to inspect the complete wavy structure of corrugated tubing gaplessly.

Only announced to the plastics industry in the run-up to K 2019, a COMPEO 88 compounder from BUSS is already in industrial use. The first user is a multinational masterbatch manufacturer, which has been producing color masterbatches with this system since late October 2019. **34**



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#### COMPLAST South Africa 2020

03. – 05. 03. 2020  
Johannesburg / South Africa  
[www.complastexpo.in](http://www.complastexpo.in)

#### 12th European Thermoforming Conference

18. - 20. 03. 2020  
Geneva / Switzerland  
SPE - European Thermoforming Division  
[www.e-t-d.org](http://www.e-t-d.org)

#### OMANPLAST 2020

23. - 25. 03. 2020  
Muscat / Sultanate of Oman  
Silver Star Corporation LLC  
[www.omanplast.net](http://www.omanplast.net)

#### wire 2020 and Tube 2020

30. 03. – 07. 04. 2020  
Düsseldorf / Germany  
[www.wire.de](http://www.wire.de), [www.Tube.de](http://www.Tube.de)

#### Plastics Extrusion World Expo Europe

03. - 04. 06. 2020  
Essen / Germany  
<https://eu.extrusion-expo.com/>

#### COMPLAST Ethiopia

19. – 21. 06. 2020  
Addis Ababa / Ethiopia  
[www.complastexpo.in](http://www.complastexpo.in)

#### Plastasia 2020

19. – 22. 06. 2020  
Bangalore / India  
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#### COMPLAST Myanmar

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14. - 16. 07. 2020  
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## 20 Years of Keeping PE Pressure Pipe at the Top of its Game



■ The PE100+ Association celebrated its 20th anniversary. Founded in 1999 to assure consistent quality at the highest level in the production and application of materials for PE100 pressure pipes, it is just as relevant today as it ever was.

Member companies of the association offer high-density polyethylene (HDPE) for pressure pipes for gas and water with excellent hydrostatic strength that last for decades, combined with high resistance to slow crack growth and to rapid crack propagation. Performance targets set by the PE100+ Association surpass standards around the world for PE100 materials.

The PE100+ Association was founded in 1999 by three European polyethylene producers a few years after the very first introduction of PE100 in the market. Today, it comprises 13 companies from around the world (in China, Korea, Thailand, the Middle East region, as well as Europe), and the number of members continues to grow. An advisory committee of non-affiliated independent experts that are active across the pressure pipe value chain supports the Association.

The members have made a voluntary commitment to regular quality checks – at least on annual basis – in cooperation with an independent administrator Kiwa and several other independent test labs across Europe. Kiwa asks for batches of materials from material suppliers on a random basis. Pipes are usually made in members' own processing centres and sent to independent institutes for testing. An important principle of the PE100+ Association is that certified PE100 materials are listed as ready-made black or coloured and fully formulated compounds, rather than supplied to pipe makers in a natural base resin form that is coloured using masterbatch and other additives at the pipe extrusion line.

The PE100+ Association monitors the decisive test methods for PE pressure pipes in round-robin tests, which involve it checking to make sure that the independent test institutes verifying pipes are performing tests in ways that make them comparable.

Adapting to new pipe laying techniques: Although members are all suppliers of HDPE, the PE100+ Association communicates with the full value chain, including converters, installers and standardisation bodies, with whom it has an active dialogue on such matters as product criteria for new pipe laying methods.

At present, there is no uniform resin or pipe requirement for resistance to slow crack performance. The PE100+ Association is acting as a driving force for change, working on development of new and much faster – but still reliable – accelerated test procedures.

The PE100+ Association unveiled in 2017 an online “No Dig” technical guide. This identifies the properties, benefits and applications of PE100 in trenchless techniques for use by designers and decision makers, enabling them to decide which methods are applicable to a specific project.

“The PE100+ Association continues to grow and to evolve as it adapts to changes in technologies and markets,” says Hans Pierik, President and Chairman of PE100+ Association, and Business Manager at SABIC. “I believe we are now an invaluable link in HDPE pressure pipe value chain, all the way through to consumers who demand reliable, consistent and safe delivery of gas and water to their homes. We have come a long way in 20 years, but we still have work to do.”



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## Forecast for Italian Manufacturers of Plastics and Rubber Processing Machinery

■ A negative year-end result is expected for the Italian plastics and rubber processing machinery industry as reiterated in the foreign trade data just published by ISTAT (Italian National Statistical Institute) for January-September, analysed by the Amoplast Studies Center. The statistics show a continuing slump in the two trade flows: -13.1% for imports (overall value of 645 million euros) and -8.5% for exports (just below 2.16 billion euros) with respect to the first nine months of 2018.

Extending the gaze to the previous quarterly results, a downturn that is less accentuated for imports is to be observed, which had fallen by nearly 17 points in June and 20 points in March.

Exports, on the other hand, tended to seesaw: the September results represent a new worsening with respect to the -5% in June, which had partially shored up the losses of -8% in March. The balance of trade remains fully positive – well over 1.5 billion euros – but nevertheless has contracted by six percentage points.

The many issues and unknowns characterizing the current world economic climate, compounded by the announced but as yet poorly defined legislative and fiscal measures aiming at reducing the use of plastics, have begun to affect the Italian machinery manufacturers, who are expecting negative year-end results across the board.

“Speaking with my colleagues in the machinery manufacturing industry,” comments Amoplast President Dario Previero, “I note a certain amount of concern deriving from the less-than-encouraging prospects for both the domestic and foreign markets. However, we must not overlook the fact that this slump – whose first signs were seen in the year-end results for 2018 – comes after a long period of growth. With the sole exception of 2013, we have witnessed seven years with a plus sign that strengthened the industry and allowed companies to invest in research and development in order to offer their customers increasingly technologically advanced solutions.”

Previero continues: “It is no simple matter to understand whether this is a cyclical recession or a structural weakening of the sector. It is mainly the diffuse uncertainty – economic, political, commercial – that induces an increasingly marked tendency in our customers to reduce or defer investment. Of course it is true that the recent K in Düsseldorf gave us a gasp of air, but many companies complain of rather meagre results in their order books. It is thus difficult to venture a forecast for 2020, which could be a year of great volatility if the political and economic uncertainties that have plagued us in 2019 are not cleared up. I would also add that the theme of the circular economy was prominently featured during the German tradeshow. This great challenge could transform into significant opportunities for development for Italian manufacturers of plastics and rubber processing machinery, who are increasingly ready to market systems within an Industry 4.0 perspective, with production cycles characterized by energy savings and ability to process recycled plastics.”



*Dario Previero,  
President  
of Amoplast*

Looking further down in the rankings, it is worth noting the following results regarding outlet markets that have been historically relevant for Italian plastics and rubber processing machinery manufacturers:

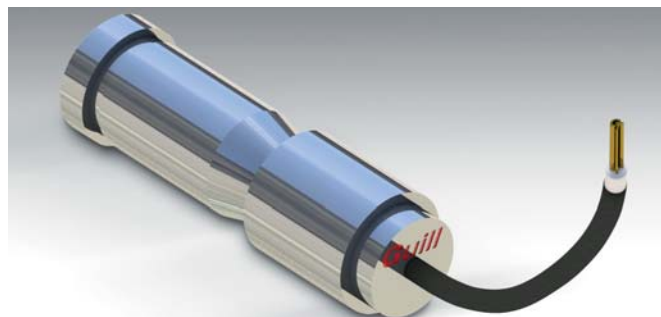
- neighbors Austria and Switzerland registered -24% and -28%, respectively
- the -30% for Turkey is not particularly surprising, given the country's uncertain economic situation and the poor performance of the local converting industry, which also pushes Turkish manufacturers to concentrate more on exports. We must also keep in mind the effect of the devaluation of the Turkish lira starting in August 2018
- Russia recorded a further slide of 19 points, following on the recently-witnessed double-digit decreases
- Brazil showed a weak +1% after the +5% in June, which had raised hopes. Argentina is also worthy of note in the South American markets with +8%, although it represents a drop from the +18% of June
- as regards Asia, there are clearly encouraging sales trends in two weighty markets – Thailand (+24%) and Indonesia (+39%) – while that in the equally important South Korean market has fallen by 31%
- among the main markets on the African continent, we must distinguish between the Mediterranean countries – where only Tunisia shows positive results (+57%) as Morocco (-11%) and Algeria (-38%) fall further back – and Sub-Saharan Africa, where South Africa records a very modest +2%
- in the Middle East, excellent results are seen in Saudi Arabia (+33%) and the Emirates (+86%), while the collapse of sales to Iran continues to represent heavy losses (-64%).

As regards imports of machinery into Italy, we observe a general decrease in purchases from European partners, for example: Germany -30%, Austria -13%, France -30%, Switzerland -35%, and a simultaneous rise in purchases from the two principal Asian suppliers: China +14%, Japan +33%.

## 10-Day Extrusion Tooling Program launched

■ Guill Tool & Engineering, a global manufacturer of extrusion crossheads, tips and dies, has announced its new 10-day tooling program. This program applies to eligible tips and dies that will be shipped within 10 business days of receiving the purchase order from the customer.

The company's quality precision tips and dies have been manufactured in the U.S. for 55 years. All Guill extrusion tools are produced using certified and documented quality steel material specifically qualified for the polymer to be extruded. Furthermore, Guill designs tips and dies for any application the customer needs. These feature multi-lumen, stripe, multiple stripe, wire and cable, hose, pipe, tube, fiber optic, blown film, corrugated tube and profile. Dies include face seal, shouldered, snap together, floating die plates, interchangeable die plate and custom dies. Available tips include single and multi-lumen, threaded style, snap together, fixed center shoulder, profile, tapered style and custom. To find out which tools are eligible for the program, customers can check with any sales representative. For all other parts, company personnel will review the customer's drawing to determine if it is eligible for the program.



*A typical Guill extrusion tip and coating wire eligible for the new 10-day delivery program*

Eligible tips and dies for this program cannot be plated and must have a diameter less than 1.5" and a length less than 4.75." Guill proudly manufactures all its products in the U.S. under the quality standards ISO 9001:2015 and AS 9100:2016.

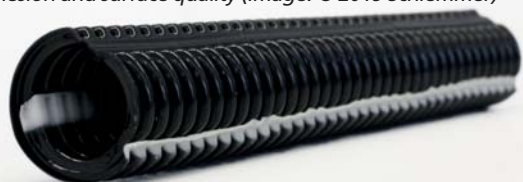
■ Guill Tool & Engineering  
www.guill.com

## Co-Extruded TPEs

■ An innovative new thermoplastic elastomer (TPE) family made by KRAIBURG TPE transfers the established properties of injection-moldable TPEs for multicomponent applications with polyamide (PA) to extrusion. Cable management systems in motor vehicles are the first application for which the Schlemmer Group (Munich) is producing new types of Polyflex corrugated tubes by co-extruding PA and a THERMOLAST® K AD/PA/CS2 compound. Direct adhesion of TPEs to polar plastics, such as PA, requires carefully selecting the two components and matching them to the specific requirements for each application and processing method. KRAIBURG TPE has performed an extensive study of these criteria and is supporting its customers in using PA/TPE applications by providing specific recommendations and custom-engineered compounds.

The new types of Polyflex corrugated tubes for flexible cable management systems, particularly in vehicle construction, mean that the Schlemmer Group's requirements for TPE components have risen. In order to avoid sharp edges and allow faster installation thanks to slit corrugated tubes, the product developers' design was aimed at combining PA and TPE by co-extrusion.

*A new type of Polyflex corrugated tube for cable management systems in vehicle construction, which is co-extruded combining polyamide and a thermoplastic elastomer from KRAIBURG TPE that provides outstanding temperature resistance, processability, adhesion and surface quality (Image: © 2019 Schlemmer)*



"We were looking for a TPE that not only provides the necessary heat resistance and cold toughness for use in motor vehicles, but can also be extruded economically – i.e. without the use of bonding agents – with polyamide.

It was also necessary to ensure reliable adhesive strength in this material composite," explains Michaela Zagler, Material Development Specialist at the Schlemmer Group. "THERMOLAST K AD/PA/CS2 is a compound that we found among KRAIBURG TPE's THERMOLAST K materials that provides this combination of properties."

After extensive testing, Schlemmer chose a TPE from the new AD/PA/CS2 THERMOLAST K series, which was specially developed for sophisticated injection molding and co-extrusion applications with polyamides such as PA6, PA6.6 and PA12. The products are characterized by their excellent adhesiveness and provide an outstanding compression set. While their maximum service temperature is 125°C (3,000 hours), they also resist peak temperatures of up to 150°C for short periods (240 hours). They also feature high elongation at break, tear strength and resistance to tear propagation, as well as slow burning (UL94 HB). In addition, the TPE family provides a very aesthetic surface quality with excellent wear resistance that does not require finishing, at a hardness range between 40 and 80 Shore A. The selected compound shows a peeling resistance of more than 8.5N/mm during tests in accordance with the VDI 2019 standard.

THERMOLAST K compounds in the AD/PA/CS2 series are available worldwide in natural color (colorable) as well as in black, and they are produced in accordance with identical quality standards at all KRAIBURG TPE sites.

■ KRAIBURG TPE GmbH & Co. KG  
www.kraiburg-tpe.com

## New Production Hall in the USA

■ The Bekum Group has recently celebrated three anniversaries – 60 years of Bekum in Berlin, Germany, 50 years of Bekum in Traismauer, Austria and 40 years of Bekum in Williamston, USA. As part of the celebrations at the American location, the groundbreaking ceremony for the expansion of the production capacities was held on November 26, 2019. A new building with a production area of 3,700 m<sup>2</sup> and almost 700 m<sup>2</sup> of office space is being built. This increases the site's operational area to more than 15,000 m<sup>2</sup>.

Michael Mehnert, Managing Partner, who traveled to the United States for the laying of the cornerstone and celebrations, comments proudly on the historical events: "My father founded this company 60 years ago. Today I am standing here and laying the foundation stone for a new production hall to serve the continuously increasing demand in the USA in the future! "

"This is a historic week for Bekum America," Steven London, COO and President of Bekum America Corporation, said. "With this cornerstone laid our new plant has a great start to our 40th anniversary with our dedicated employees. The Bekum team always offers its customers state-of-the-art products. This event is a perfect opportunity to celebrate with everyone who supports Bekum in its development."

Bekum America was founded in 1979 with the goal of introducing the highest quality extrusion blow molding machines for the manufacture of plastic bottles, containers and other large plastic parts to the North American market by combining German design and technology with American skill and ingenuity.

*The managing partner Michael Mehnert (2nd from left) at the groundbreaking ceremony with the managers of the US subsidiary: CFO Owen Johnston, Chairman Martin Stark, President & COO Steven London (from left)*



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A dosing unit for all extrusion and compounding tasks.

## Appointments

■ Davis-Standard announced that Rich Kanarski has been appointed Manager – Technical Product Management. Effective January 1, he will lead efforts to drive the evolution of technologies associated with key product lines in support of Davis-Standard’s strategic plan. The new role involves a combination of tactical and strategic activities centered on advancing product performance. Kanarski and his team will collaborate with suppliers and customers to evaluate market trends and capabilities, and develop technology accordingly. Kanarski has been with Davis-Standard the last seven years, most recently as a Process Engineer with converting systems. He has worked closely with product management, application engineering, sales and field service teams to help specify and optimize extrusion processes. During this time, he has developed relationships with colleagues worldwide and has supported customers in all project phases. This includes on-site sales meetings, process support, start-ups and commissioning, acceptance and ongoing troubleshooting. Prior to Davis-Standard, he was at Coperion where he led extrusion technology scale-up and development for research programs serving polyolefin, bio-plastics, food and pharmaceutical businesses.

James Johnson



Rich Kanarski



“Rich is a talented and experienced leader with established relationships and practical technical expertise,” said Rich Pastor, Vice President of Operations at Davis-Standard facility in Fulton, N.Y. “His move into this strategic role will be beneficial to customers and our teams as we address future market trends and customer requirements worldwide.”

In addition to his professional role, Kanarski has expanded his industry presence and networking by participating in technical conferences and tradeshows. He is currently on the SPE (Society of Plastics Engineers) Board of Directors, Extrusion Division. As part of SPE board leadership, he supports efforts in member services including recruitment and outreach activities, serves on the technical paper review committee, the finance committee and young professionals committee.

Davis-Standard also announced that James Johnson has joined the company as Regional Sales Manager, Sheet and Foam, for the Southeast region of the U.S. He will support customer sales and service in the states of TN, NC, MS, AL, GA, SC, MO, OK, AR, TX, LA. This includes collaboration with customers to assess equipment needs and requirements, support of product engineering, equipment upgrades, cost-assessment and production strategies. He comes to Davis-Standard from Polymer Systems, Inc. where he was a sales engineer. Prior to that, he was with Shurtape Technologies.

“James brings industry sales, manufacturing and adhesives experience to his position, which will be beneficial to our sheet and foam business,” said Steve DeAngelis, Davis-Standard Vice President, Sheet and Foam Systems. “His communication and technical abilities, knowledge of the Southeast, and ability to address complex issues and deliver results will serve customers well.”

■ Davis-Standard, LLC  
[www.davis-standard.com](http://www.davis-standard.com)

## Market Study: Bags and Sacks – Europe (3rd ed.)

■ Products made from plastic are in Europe currently in the spotlight of the public’s attention. Especially the thoughtless and excessive use of single-use bags has received a lot of criticism. The European Union stipulates to further restrict the use of plastic carrier bags until 2025. In the public debate, however, products, numbers, and facts are often confused and important contributing factors are sometimes ignored entirely. The latest, third study on this subject by Ceresana therefore aims to make a contribution towards the objectification of this discussion. The report analyzes the entire European market for bags and sacks made from polyethylene film, films made from other plastics, woven plastic bags, and paper bags. Polyethylene is by far the most widely used material. However, the various materials may account for highly different market shares in individual applications. As a whole, this analysis constitutes an overview study that aims to incorporate a multitude of individual products.

The Study in Brief: Chapter 1 provides an overview of the European Market for bags and sacks, including forecasts until 2026. Data on

production and demand volumes as well as on the individual material types and application areas are listed in tables and figures.

Chapter 2 analyzes production, demand, as well as import and export for 28 individual countries. Additionally, detailed information is given on the demand for bags and sacks split by application areas for the eight most important European countries (Germany, France, the United Kingdom, Italy, Poland, Russia, Spain, and Turkey). The production of bags for these countries is furthermore split by materials (LDPE, LLDPE, HDPE, other plastics, woven plastics, and paper). The applications are separately analyzed for plastic and paper.

Chapter 3 provides useful profiles of the largest bags and sacks manufacturers, clearly arranged according to contact details, turnover, profit, product range, production sites, profile summary, product types, and application areas. Extensive profiles of 93 manufacturers are provided.

■ Ceresana  
[www.ceresana.com/en/market-studies/packaging/bags-and-sacks-europe/](http://www.ceresana.com/en/market-studies/packaging/bags-and-sacks-europe/)

## European Plastics Films and Sheets Association is growing

■ IVK Europe represents the joint interests of companies producing sheets made of plastic and caoutchouc for a multitude of applications. The focus on the organisation's work is on pursuing the interests for the material PVC and its substitutes.

IVK Europe welcomes two new members to the association: Sauleda and Mondoplastico.

Dr. Hans-Hinrich Kruse, President of IVK Europe association, stated at the most recent General Assembly, where both companies joined: „IVE Europe e.V. is delighted to welcome new members of the association. It is great to see our membership growing constantly. They shall give our association an even more important voice in Europe. We are looking forward to working together with the new members on common goals.“

The Sauleda Group is a business group which manufactures technical fabrics for sun protection, outdoor upholstery and the nautical industry, with more than 100 years of experience. Since Sauleda was first es-

ablished in 1897, it has had one objective: to manufacture high quality and design fabrics. More than a century later, it remains true to this vision, leading the Spanish market with a presence in more than 70 countries and a workforce of 300 employees. ([www.sauleda.com](http://www.sauleda.com)) Mondoplastico is a worldwide-known PVC and PET film producer, focused on high-quality calendered films. The company was established in 1949, experiencing constant growth to reach the current organisation: 3 production sites – 8 production lines – 230 employees. The company produces and sells approx 38,000 tons of film per year. Mondoplastico's products are formulated to be ready today for future certifications. This means that customers can take advantage of supplies on the cutting-edge, high value technical and qualitative. Mondoplastico is a supporting partner of VinylPlus. ([www.mondoplastico.com](http://www.mondoplastico.com))

■ IVK Europe Plastic Sheets and Films Association  
[www.ivk-europe.com](http://www.ivk-europe.com)

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## Certification to Key Food-Contact Standard

■ Clariant's Business Unit Masterbatches, a leader in the field of color and functional additive masterbatch concentrates and compounds, announced it has completed ISO 22000 certification for its site in Santa Clara Coatitla, near by Mexico city. The Mexican site is the first in the Americas, to have completed the GMP (Good Manufacturing Practice) certification, and joins the global footprint of certified sites in Asia Pacific and Europe.

Certification strengthens Masterbatches global capabilities and leadership position as a supplier of high-quality, high-performance color for the regulated industries of food, healthcare and toys. Applications supported by the Mexican site include plastic caps and closures, food tabs and bottles, as well as film and sheet. In recent years, regulators have determined that packaging that comes in direct contact with food products must be considered a food ingredient and must meet the same standards for safety. Because Clariant's color and additive concentrates are used in making plastic packaging, achieving ISO 22000 status for its manufacturing plants simplified the certification process for its customers and their clients.

"Our objective is to expand the business related to food contact applications and support our long-standing collaborations with current local and international customers in the region," says Miguel Ramirez, Head of Region Latin America BU Masterbatches.



Clariant Masterbatches plant in Mexico joins growing list of global sites to comply with ISO 22000 (Photo: Clariant)

ISO 22000 belongs to a family of international GMP standards such as ISO13485 for medical, devices, ISO22715 for cosmetics that address assessment and management of risk in the manufacturing and associated processes. ISO22000 is focused food-safety management and lists the measures that an organization needs to put in place to control eventual food safety hazards. These regulations are more stringent than earlier standards governing simple food contact. The need for such a standard is driven by an increased level of awareness of consumers towards food safety.

■ Clariant  
www.clariant.com

## Corona Technology for Quality Extrusion

■ One of Thailand's leading suppliers of flexible packaging, Prepack, has installed Vetaphone Corona technology on its two extrusion lines located in Amphawa Samutsongkram, some 100 km south-west of the capital Bangkok. The company, which is renowned for the international quality of its work, is set up as a single source supply for its portfolio of 'A list' customers. In addition to extrusion, Prepack has gravure and flexo print capabilities, as well as solvent-based lamination and forming.

Established initially in 1973 from Prepac France, the company's early work was for the Nongpho Ratchaburi Dairy Corporation for which it produced packaging for pasteurised milk under Royal patronage. Other early products included 5kg rice bags the Prathum Rice Mill. Today, the company has expanded its product range to

supply flexible packaging to industries as diverse as food, personal care and hygiene, snacks, chemical and industrial, and various other consumer areas.

Setting such high standards of production quality is not without its problems, as Production Manager of 20 years at the plant, Veraphan Thiampu explained: "We are located close to the sea and there is always a high level of salt in the air, which added to the humidity levels that we experience in southern Thailand creates a perfect environment for corrosion. This was having a disruptive effect on production and creating high levels of waste."

Disappointed that it was incurring such issues with well-known European brands of Corona treaters, Prepack made contact with Techno Global Graphics, who represent Vetaphone in Thailand. The result was the replacement of the existing surface treatment unit on one of its extruders with Vetaphone VE2B station, and after twelve months of satisfactory performance, the replacement of the treater on the other extruder with a Vetaphone VE2C unit. The B station is 1.8 m wide and runs at 90 m/min with a 6 kW (2 x 3) capacity. The C station is 1.6 m wide and runs at 80 m/min. It has an 8kW capacity and is fitted with a larger backing roller – both Vetaphone units are for double-sided treatment.

■ Vetaphone  
www.vetaphone.com

(left to right) Pakorn Chotikorn of Techno Global Graphics and Finn Hinze of Vetaphone with Prepack Thailand's Production Manager Veraphan Thiampu





## Consortium for Chemical Recycling

■ ALPLA Group, an international plastic packaging and recycling specialist, joins a new consortium for chemical recycling of PET. The consortium intends to speed up the commercialisation of enhanced recycling technology, BP Infinia, which turns opaque and difficult-to-recycle PET plastic waste into recycled feedstocks.

Leading companies operating across the polyester packaging value chain – including businesses involved in the manufacture, use, collection and recycling of polyethylene terephthalate (PET) plastic packaging – today announced they have formed a new consortium that aims to help to address the problem of plastic waste by accelerating the commercialisation of BP Infinia enhanced recycling technology.

The consortium intends to combine the capabilities and experience of its members – packaging and recycling specialist ALPLA; food, drink and consumer goods producers Britvic, Danone and Unilever; waste management and recycling specialist Remondis; and energy and petrochemicals producer BP – to develop a new circular approach to dealing with PET plastic waste.

PET is a plastic widely used for rigid food packaging and drinks, personal care and homecare bottles. It is a lightweight, durable and versatile material and one of the most collected and recycled types of plastic.[1] Of the PET plastic bottles collected globally, more than 75 per cent are recycled, but only 12 per cent of those collected make it back into new bottles.[2] The remainder is currently lost from the bottle-to-bottle loop[3], as it is used for other applications which are usually disposed of directly after use to landfills or incinerators, due to lack of separate collection.



The consortium members believe by joining forces they can speed up the commercialisation of the technology, infrastructure and demand needed to process billions of opaque and difficult-to-recycle PET bottles and food trays that are currently disposed of each year, including those that are difficult to recycle by current conventional recycling methods.[4]

### Notes

- [1] Source: Ellen MacArthur Foundation: The New Plastics Economy, Napcor.
- [2] Based on Wood MacKenzie Chemicals Data. PET collection rates are based on bottle consumption alone; of the 27 million tonnes of PET produced for food and drinks packaging, 23 million tonnes is consumed as bottles and 4 million tonnes as thermoformed products, such as food trays. In 2019, it is estimated that some 13 million tonnes of bottles are collected globally and converted into 10 million tonnes of post-consumer resin. Of that, 1.6 million tonnes is used for bottles.
- [3] Recycling a PET bottle back into a new PET bottle.
- [4] Source: BP calculations based on production of recycled PTA from multiple facilities – amounting to a scale equivalent to a typical virgin PTA plant of around 1 million tonnes – would require total feedstock of many millions of tonnes of opaque and difficult-to-recycle PET packaging. Based on the average weight of specific packaging types suitable for this technology (from 10 to 30 grams), this feedstock would equate to billions of packaging items.

■ ALPLA Werke Alwin Lehner GmbH & Co KG  
[www.alpla.com](http://www.alpla.com)

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## Twin-Screw Extruder Manufacturer equips a new Pelletizing Line with an Underwater Pelletizer

■ Extruder manufacturer Useon (Nanjing) Extrusion Machinery Co., Ltd. has installed a 70,000 ton per year polypropylene pelletizing line that incorporates a BKG® underwater pelletizer from Nordson Corporation.

The new line, which is up and running at the facility of an Indonesian customer, is powered by Useon's SAT-X 175 co-rotating twinscrew extruder. The unit has a 2,000 kW motor and Useon's patented high-torque gearbox. The throughput of the line is 8 to 10 tons/hour.

"The start-up is the culmination of a mega-integrated polyolefin pelletizing project in which Useon was responsible for design, manufacturing, installation, and commissioning," said Allen Zhang, sales manager for Useon. "The size of the project and our comprehensive role in it marks a milestone for made-in-China twin-screw technology in a market until now dominated by Western suppliers."

The pelletizing component from Nordson includes the BKG AH D 300 underwater pelletizer, with throughput capability up to 35 tons per hour, and the Optigon™ 5 automatically self-cleaning water and dryer system, with throughput up to 15 tons per hour. BKG pelletizers are widely used in China and elsewhere, noted Aaron Kong, Nordson sales director for China. "To support this market, last year we started up a new pelletizing laboratory line at our facility in Shanghai, including a 300 kg per hour twin-screw extruder. It is used by our direct customers as well as OEM companies like Useon, whose customers can run trials in our lab to demonstrate our BKG equipment."



*New polypropylene pelletizing line in Indonesia, with Useon's SAT-X 175 co-rotating twin-screw extruder; skid-mounted BKG® underwater pelletizer is in foreground*

Since established in 2006 in Nanjing, China, Useon Extrusion has successfully delivered more than 2,600 twin- and single-screw extrusion lines worldwide for polymer processing applications including compounding, direct extrusion, foam extrusion, and recycling. They are headquartered in Nanjing, Jiangsu, China.

■ Nordson Corporation  
[www.nordson.com](http://www.nordson.com)  
[www.nordsonpolymerprocessing.com](http://www.nordsonpolymerprocessing.com)

Useon Extrusion  
[www.useon.com](http://www.useon.com)

## High-Performance Thermoplastic Film

■ Solvay has signed an agreement with Safran to supply Halar® ECTFE high performance film for its LEAP1 engine acoustic panels. Film made from Halar® ECTFE with additional plasma treatment of-

*Solvay has signed an agreement with Safran to supply Halar® ECTFE high performance film for its LEAP engine acoustic panels. From left to right: Isabelle Lindemann, Key Account Manager Safran, Solvay Specialty Polymers global business unit; Thierry Haud, Vice President Safran Purchasing, Safran; Sonia Bouquet, Composite Materials Purchasing Department, Safran; Dr. Alexander Vogel, Head of Compounding, Solvay Specialty Polymers global business unit; Etienne Collart, Regional Sales Manager EMEA South, Aerospace Business Line, Solvay Composite Materials global business unit (Photo: Solvay)*



fers excellent adhesion to composite substrates providing superior aesthetic surface aspects to perfectly blend with its surroundings.

Solvay's high-performance Halar® ECTFE, a partially fluorinated semi-crystalline polymer, is used as a protective layer on the engine acoustic ring panel against the aggression of the harsh environment typical of the entrance of an aircraft engine. It is strong and tough and its resistance to erosion, abrasion, and aircraft chemicals and fluids make it ideal for this application.

Solvay's Halar® ECTFE film retains its properties over a broad range of temperatures, displaying particularly outstanding impact resistance at low temperature. It has demonstrated excellent erosion properties, extreme UV radiation resistance and can be considered as an excellent barrier to water vapor, oxygen and other small gas molecules. It is also lightweight and durable and meets stringent aerospace industry requirements regarding fire and burn-through resistance due to its inherent flame retardancy.

<sup>1</sup> The LEAP engine is a product of CFM International, a 50/50 joint company between GE and Safran Aircraft Engines.

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■ Solvay Specialty Polymers  
[www.solvayspecialtypolymers.com](http://www.solvayspecialtypolymers.com)

# Creating New Connections and Simplifying Recycled Plastics Use



There was considerable interest in plastship's offer at the Recycling Forum in Wiesbaden, Germany (© plastship)

■ A joint approach gets the best out of plastics recycling and needs to be transparent if use of recycled materials is to increase. About that, everyone was in agreement at the International Recycling Forum in Wiesbaden, Germany in late November 2019. It is, however, often not straightforwardly possible to replace or supplement virgin material with recycled pellets since no comparable data about their service and moulding characteristics is available. Networks capable of sourcing standards-compliant materials can help out here. Andreas Bastian is the Managing Director of plastship, a young company whose principal shareholder is RIGK GmbH. Bastian and Co-Managing Director Konstantin Humm took this as their starting point for developing concepts for boosting the use of recycled materials.

Bastian explains where stumbling blocks often still remain in the way of recycling plastics: "There are many good approaches to collecting plastic scrap from various sectors and to establishing closed loops. Some improvements are also being made in terms of the quality of post-consumer recycled materials. But we still haven't arrived at uniform standards in terms of grades or created a transparent market for recycled materials."

According to Bastian, information is primarily what is missing. All too often, there is a quality and information gap between application and recycled raw material and there is no uniform way of making comparisons with virgin material. "The recycled pellets which are currently commercially available have, by definition, all already been used once. If the application is now to be changed, new and different requirements apply", is how Bastian explains the problem.


plastship's offer plugs this gap between recycled material manufacturers and processors. Bastian explains the advantages: "We offer manufacturers of recycled material a sales tool with the possibility of performance analysis, while, for purchasers of recycled materials, we simplify procurement and enable comparisons. Our platform provides details about recycled plastics in a standardised form and gives an overview of which recycled pellet grades are suitable for specific applications, so processors can quickly and reliably find what they're looking for. If necessary,

we can have technical parameters checked by our partners in polymer analysis."

Bastian and Humm have adopted specifications in their nomenclature which only apply to recycled materials. Humm outlines the advantages: "Recycled pellet manufacturers can, for example, promote their products by particular features in the process while polymer processors can assess the quality of a raw material. We can, of course, provide personal advice and for instance obtain approvals and conformity certificates." The company's founders are currently drawing up standard grades for recycled pellets on the basis of real market data.

But plastship's offer does not stop there. Plastics processors can, for example, also market their recyclable materials or surpluses directly to recyclers. Offers for specific services, such as converting recyclable materials into recycled pellets or toll grinding can be generated via calls for proposals. Offers for individual raw material preparation or for carrying out audits can also be obtained via the platform. All the stated functions will be available to every user from version 2.0 of the platform.

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www.plastship.com




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## In-House Rheology Lab launched

■ Guill Tool, manufacturers of extrusion tooling for the global market, has opened an in-house rheology laboratory, making it the only extrusion tooling manufacturer in the industry with such a capability. Seeking to obtain better results and minimize the time it takes between testing and production, Guill built its own rheology lab in their facility in West Warwick, Rhode Island, USA. The lab features several key machines that ensure optimum results, when testing materials, especially new compounds to be extruded. The testing equipment includes a Hybrid Rotational Rheometer, a Differential Scanning Calorimeter, and a Thermal Conductivity Meter. Third-party testing facilities are typically not experienced in extrusion processes. Guill, however, can not only gather data the same way third-party testers can, but can also interpret that data as it applies specifically to extrusion. Likewise, third-parties simply supply data, not recommendations. Guill is now equipped to both test its customer's materials and work with them to create extrusion tooling that will give them a competitive edge. Accurate simulation and interpretation by extrusion experts greatly reduces the number of physical reworks needed, as the tooling has a greater

*New Guill Rheology Lab at company headquarters in West Warwick, Rhode Island*



*TA Instruments DTC-300 Thermal Conductivity Meter*



*TA Instruments Discovery HR-2 Hybrid Rotational Rheometer*

chance of producing a good product at the outset. In-house testing also speeds up the turnaround on test results, reducing delays during the tool design process and offering better control over the processes and test parameters.

The new Guill rheology lab processes standard materials, custom formulae and it is equipped to mix materials. These materials include plastics, thermoplastic elastomers, all types of rubber and silicone. Information from the lab is transmitted directly to the Guill engineering department via computer link for review by the design team.

The lab will be offered for use by extruders and chemical formulators, among others in the industry. Please contact Guill for full details.

■ Guill Tool & Engineering  
[www.guill.com](http://www.guill.com)

## Record-Breaking Stretch Film Line

■ With the largest cast film line ever displayed at the K, the world's premier trade fair for plastics and rubber, SML clearly demonstrated its leading position in the field of extrusion machines. The new PowerCast XL stretch film line showed a proven start-up time of less than 5 minutes, hands-free production changes and extraordinary high output, setting new benchmarks in over-all efficiency for film production – unreached by others so far.

Right at SML's booth at the K 2019 and in front of hundreds of visitors, the PowerCast XL was producing ready-to-use 12 micron

*PowerCast XL – the new benchmark in over-all efficiency for stretch film production*



high elongation film, directly delivered to the European market. Due to innovations like the new Booster technology, the huge 1,600 mm diameter chill roll, a triple chamber vacuum box and the Cloeren touchless Reflex® die, the line reached a production speed of 525 m/min in less than 5 minutes – field-tested and demonstrated at K 2019 several times. In this very short start-up time, the thickness cross-profile variation of the film is already lower than 0,24 micron 2-Sigma and therefore the film is ready for sale.

During production changes, no intervention of an operator is needed – it is done hands free. To demonstrate this performance, SML increased the production speed of the PowerCast XL – twice a day live at the K 2019. By pushing just one single button, line speed went up from 525 to 710 m/min fully automatically. The 9-up line reached a net production output of over 2,150 kg/h. The new technology integrated in SML's new PowerCast XL has significant effects on over-all line performance and effectiveness, reducing downtimes and waste to a minimum.

■ SML Maschinengesellschaft mbH  
[www.sml.at](http://www.sml.at)

## Halogen-Free Compounds Help Meet Carriers' Demand for Control / Fiber Optic Cable Constructions

■ At Wire 2020, Teknor Apex Company will feature a full range of compounds for the emerging 5G wireless infrastructure (Hall 9, Stand E-6-01).

The company has developed Apex® PVC, Flexalloy® PVC elastomer, and Halguard® halogen-free low-smoke compounds for every component in the complex antenna cables required for the new infrastructure.

"With the advent of 5G, the wireless antenna market is evolving away from large coaxial cables and toward composite constructions incorporating control and fiber optic cables," said David Braun, wire and cable industry manager for the Vinyl Division. "These new constructions meet the needs of wireless telecom carriers, who are seeking to add new spectrum bands while lowering operating costs."

Compounds are available from Teknor Apex for these 5G antenna cable applications:

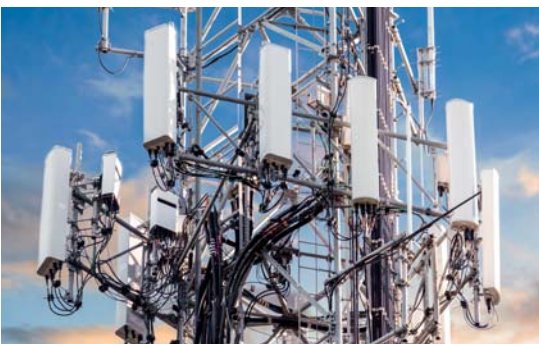
- Buffers for high-speed data fibers at the core of the cable;
  - Jackets for the multi-fiber core;
  - Jackets for the bundles of 600-volt control cable surrounding the core; and
  - Sheathing for the entire construction.
- David Braun noted that the suite of compounds offered by Teknor Apex for these applications include variations that meet different specifications from each wireless carrier: "We offer specialty formulations for oil-resistance, UV-resistance, low- and high-temperature

environments, and wet- and dry-rated insulations. Many Halguard non-halogenated low-smoke alternatives to PVC are available, including a stress crack-resistant compound for jacketing over corrugated metal armor."

**Wire 2020: Hall 9, Stand E-6-01**

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[www.teknorapex.com](http://www.teknorapex.com)

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## Crosshead Embodies Smart Technology for Hose Applications

Model 3000A



■ In an effort to continually improve system productivity through smarter technology, Davis-Standard has introduced the Model 3000A (automatic) crosshead for rubber hose applications. As overhead costs for labor, energy and materials put pressure on the margins, it is essential to have faster, more versatile equipment to merge economics with sustainability. The Model 3000A crosshead is an example of this technology, enabling hose manufacturers to reduce scrap and attain faster start-up times for smaller lots. Material savings, quick product changes, simplified maintenance, reduced scrap and improved quality equate to competitive efficiency.

“Every component on the Model 3000A is engineered to improve processing while providing cost savings,” said Joe Wnuk, Vice President, Davis-Standard Elastomer and Profile Systems. “There are production advantages when the crosshead is used as part of a fully integrated and automated elastomer line, or when used separately as a second step in the manufacturing process. In many cases, the return on investment can be realized in less than a year.”

The Model 3000A incorporates an automatic, servo driven concentricity adjustment system. This new, proprietary system

allows for adjustment of the core tube/tip assembly with a simple, accurate joystick control. This enables the operator to easily minimize eccentricity, maximize concentricity, and reduce downtime during product changeovers. In addition, the servo drives enable monitoring and adjustments throughout the run to account for lot-to-lot variations, day/night variations, and corrections for gum space adjustments. A hydraulic pump system is not necessary and the compact design does not require hoses.

Additional features such as a tapered mandrel and highly engineered flow paths ensure consistent flow through all speed ranges. The thrust bearing supported core tube/pin assembly enables wall thickness modification under pressure without interruption. Die adjusting screws are located in removable inserts to protect the body from thread damage. A larger surface area in the water jacket improves heat transfer efficiency. Models are available to accommodate 2-inch (50mm), 3-inch (76mm), 4.5-inch (102mm) and 5.5-inch (140mm) diameter braids.

Wnuk added: “One of the best features of this automatic design is the precision adjustment. This contributes to material savings due to tighter tolerances within specifications. This is especially valuable with frequent product and dimension changes, which are becoming more and more common in the industry. We look forward to seeing the benefits of the crosshead for customers worldwide.”

Davis-Standard’s Aftermarket group is available to review your existing elastomer line to determine how the new Model 3000A crosshead can improve your efficiency and bottom line. Wendell Whipple, Vice President, Global Aftermarket Sales, said: “In addition to new lines the Model 3000A crosshead can be integrated into an existing line. In most cases existing Model 2000 crossheads may be upgraded with this new automatic technology”.

■ Davis-Standard, LLC  
www.davis-standard.com

## Extrusion Control System enables to Maximize Throughput while Maintaining Tight Tolerances

■ An innovative extrusion control system for wire and cable provides accurate control of grams-per-meter yield, improves product integrity, and reduces operating costs, it was announced by Maguire Europe, which will highlight the system at Wire 2020 (Hall 10, Stand D37).

The Maguire + Syncro™ extrusion control system can be deployed in extrusion or coextrusion operations and in new or retrofit installations. Using data from a digital post-extrusion encoder and tachometer, the system adjusts extruder screw RPM and capstan speed to ensure tight coating tolerances and end-product consistency. In coextrusion, ratio control provides accurate dimensions for multiple sheathing layers or identifying stripes.

There are three basic components in the Maguire + Syncro system: 1) the Maguire® WXB™ Weigh Extrusion Blender, which incorporates a gain-in-weight (GIW) weigh bin and a loss-in-weight (LIW) mix chamber; 2) the Maguire 4088 controller, which controls the loading, blending, and metering of raw material to the extrusion process; and 3) the Syncro® controller, which uses the consumption data from the 4088 controller and the downstream encoders to adjust line speed and haul-off. Modes of extrusion control available with the Maguire + Syncro system include grams per meter (or ounces per foot) of extruded product and kilograms (or pounds) per hour.

“Given the high speeds in wire and cable extrusion, any coating errors can quickly escalate into severe rejection rates, extensive

Maguire + Syncro™ blender and control



Maguire® MGF™ gravimetric color feeder



downtime, and costly waste of polymer compound and conductor or optical fiber,” said Paul Edmondson, managing director of Maguire Europe. “The Maguire + Syncro extrusion control system enables the manufacturer to maximize throughput while maintaining tight tolerances, drawing on Maguire’s expertise in control of material handling with Syncro’s expertise in controlling extrusion lines.”

The Maguire + Syncro system is the product of a partnership between Maguire and Italy-based Syncro srl that began in 2016 with Maguire taking an investment position with Syncro, which specializes in controls for all types of extrusion process. The Syncro components in the extrusion control system for wire and cable include a master PLC touchscreen controller, digital encoder and tachometer, and a coextrusion interface (one for each layer) that provides polymer consumption data from each additional extruder via the Maguire WXB blender.

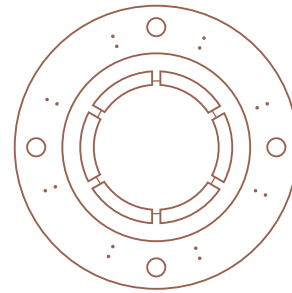
Because color is a key factor in wire and cable for branding and coding, Maguire also supplies the MGF™ gravimetric feeder, which precisely measures the amount of additive that is fed directly into the extruder throat. “Over-coloring to compensate for possible inaccuracies in color addition is a problem because it wastes a costly additive and can compromise electrical and mechanical performance,” said Paul Edmondson. “The MGF feeder prevents this by automatically recalibrating its dosage rate and holding the letdown ratio to within +/- 0.2%.”

Maguire also supplies raw-material vacuum loaders ranging from a compact “mini-central” loader to plant-wide systems. Turnkey systems that includes the Syncro controller and loading, blending, and color feeding equipment from Maguire are available directly from Syncro or can be ordered through Maguire representatives. For an existing production line which includes a standard Maguire GIW blender instead of the WXB unit, the processor can obtain the new extrusion control capability by installing the 4088 controller, an LIW hopper, and the Syncro controller.

**Wire 2020: Hall 10, Stand D37**

Maguire Products, Inc.  
www.maguire.com

Syncro srl  
www.syncro-group.it



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## Chinaplas 2020 postponed

■ In order to control the novel coronavirus epidemic in China and in accordance with the instructions issued by the Shanghai city government to stop all large-scale activities, please be informed that CHINAPLAS 2020, the 34th International

Exhibition on Plastics and Rubber Industries, scheduled to be held on 21-24 April 2020 at National Exhibition and Convention Center in Shanghai will be postponed.

■ **Adsale Exhibition Services Ltd.**  
[www.ChinaplasOnline.com](http://www.ChinaplasOnline.com)

## Market Study: Bioplastics (5th edition)

■ Polylactic acids, starch blends, cellulose, and other bioplastics achieve significantly higher growth rates than conventional standard plastics made of mineral oils or natural gases. „Bioplastics can be used in a growing number of application areas,” explains Oliver Kutsch, CEO of market research institute Ceresana. With its newest study, Ceresana has examined the world market for “green” polymers for the fifth time already. Analysts predict their future development to remain dynamic: revenues generated with bioplastics are expected to reach approx. USD 4.4 billion by 2026. The study in brief: Chapter 1 provides a comprehensive analysis of the global market for bioplastics – including forecasts until 2026: the development of demand, revenues, and production is presented for each region. Furthermore, individual application

areas for bioplastics are examined. We differentiate between the categories rigid packaging, flexible packaging (bags and sacks), other flexible packaging, consumer goods, automotive and electronics, and other applications.

Chapter 2 examines the eight most important countries for sales of bioplastics separately: Germany, France, the United Kingdom, Italy, Spain, USA, China, and Japan. Demand and revenues, demand within individual application areas, demand per product type are presented.

Chapter 3 provides useful company profiles of the most important manufacturers of bioplastics, clearly arranged according to contact information, revenues, profits, product range, production sites, and profile summary. In-depth profiles of 75 manufacturers are listed.

■ **Ceresana**  
[www.ceresana.com/en/market-studies/plastics/bioplastics/](http://www.ceresana.com/en/market-studies/plastics/bioplastics/)

## Pelletizing – Circular Economy

■ APK AG has deployed a complete downstream melt processing system from Nordson Corporation for use with its innovative Newcycling® process, which carries out the dictates of the circular economy by transforming mixed and multi-layer waste into purified polymer with properties close to virgin resin.

The first Newcycling® plant, located in Merseburg, Germany, began commercial operation in June with an annual capacity of 8,000 tons and is used for separating polyethylene and polyamide from multi-layer packaging films (post-industrial

source). The Newcycling® process produces the polymers in purified form by shredding the waste, using solvents to selectively dissolve the plastics, separating liquid and solid components, purifying the polymer, and removing the solvent for reuse in the process. An extruder delivers polyamide to BKG melt delivery and pelletizing components for production of APK's Mersamid® polyamide resins.

The BKG equipment includes a BlueFlow™ gear pump, Hi-Con™ screen changer, polymer diverter valve, underwater pelletizer and Master-Line™ process water / pellet dryer system.

“Our Mersamid® products are intended for demanding technical applications as alternatives to virgin plastics,” said Florian Riedl, Director of Business Development for APK. “Nordson's BKG pelletizing and melt delivery equipment contributes to meeting our requirement for high-quality granulates with homogeneous properties. In addition, these systems help us achieve a level of production efficiency that is consistent with our sustainability approach.”

Elsewhere in Europe, Florian Riedl noted, APK will build a second Newcycling® plant, with a capacity of 20,000 tons, for processing of mixed film waste of post-consumer origin.

■ **APK**  
[www.apk-ag.de](http://www.apk-ag.de)  
Nordson Corporation  
[www.nordsonpolymerprocessing.com](http://www.nordsonpolymerprocessing.com)

*Newcycling® plant at Merseburg, Germany*







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[www.ikv-symposium.com](http://www.ikv-symposium.com)



## 30<sup>th</sup> International Colloquium Plastics Technology

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[www.ikv-colloquium.com](http://www.ikv-colloquium.com)

## SPE Shape Extrusion Topcon

May 12-14, 2020, Nashville, TN, USA

■ To succeed in today's "Industry 4.0 environment" a thorough knowledge of fundamentals, advanced theory and techniques is required. Hence, the SPE Shape Extrusion Topcon was conceived. The SPE Shape Extrusion Topcon will feature 20+ technical presentations, an exhibitor display area and access to some of the top technical minds in the world relating to the extrusion of precision products. This technical program will feature industry experts from industry, the SPE Extrusion Board of Directors, and leaders from academia.



## SHAPE EXTRUSION TOPCON 2020

Nashville, Tennessee • May 12-14, 2020  
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Event corporate sponsors are Witte Pumps, Compuplast, Coperion, Brabender Technologie, Davis Standard, US Extrusion, Leistritz Extrusion, Plastics Technology Magazine, Barr Inc., and others.

For additional information contact

■ Charlie Martin, Leistritz Extrusion,  
cmartin@leistritz-extrusion.com  
[www.4spe.org/i4a/pages/index.cfm?pageid=5086](http://www.4spe.org/i4a/pages/index.cfm?pageid=5086)

## 25th Anniversary as Leading Manufacturer of All-Electric Blow Molding Machinery

■ W. Amsler Equipment Inc. is celebrating its 25th anniversary as a leading manufacturer of all-electric stretch blow molding (SBM) machinery for the plastics industry. The company founded by Swiss-born Werner Amsler, a 49-year veteran of the plastic industry, has grown from humble beginnings to its current position as a strategic global supplier of blow molding machinery for the production of plastic containers. The company serves a broad client list in the personal care, household cleaning, pharmaceutical, beverage, and food packaging markets.

In 1994, Amsler started W. Amsler Equipment in Concord, Ontario, to focus on fully-electric machines instead of standard hydraulic presses. Operations were later transferred to Richmond Hill in May 1999. The company has spent the last 25 years pushing the boundaries of stretch blow molding technology. The trademarks of Amsler machinery are highly repeatable processing, energy savings up to 50% versus hydraulics, and a 75% reduction in maintenance costs. One of Amsler's primary beliefs is that company owners should be able to sleep at night while their machines keep running efficiently.

"Our success has been built by the many great employees whose steady focus on innovation have lifted our company to new heights in terms of productivity, quality, and growth," said Amsler. "Our simple formula has been to stay ahead of the curve in terms of technology, and meeting the needs of our customers in terms of quality, productivity, and sustainability."

The company has machines in 18 countries and the product line includes machines with one to six cavities between 50 ml and 23 liters. The product line also includes linear machines with output to 10,000 bottles/hr and rotary equipment for up to 40,000 bottles/hr. W. Amsler's first all-electric L22 model machine, built in 1996, is still running today. Other technology achievements include the 2002 launch of the L16 single-cavity with 6L capacity and the 2010 introduction of the L32 convertible machine with adjustable cavitation for different bottle sizes. At NPE 2018, the company launched its next-generation L42X all-electric reheat machine with preferential heating, neck orientation, and hot-fill capabilities.

In August 2018, W. Amsler relocated its operations from Richmond Hill to an expanded site in Bolton. The company's new 34,000 sq ft of space more than doubled the company's previous facility and came in response to rapid growth over the last five years. The new location provides more room for machine development, pilot production, and classroom-style training.

W. Amsler was honored for its technology achievements with the 2010 Plastics Innovator Award from the Canadian Plastics Industry Association.



■ W. Amsler Equipment Inc.  
[www.amslerequipment.net](http://www.amslerequipment.net)

## New President and CEO appointed

■ The leadership team of Baldwin Technology Company Inc. has appointed Joe Kline as its new President and CEO, effective January 17, 2020. Baldwin is a leading global manufacturer of innovative process-automation technology for the printing, packaging and converting industries. Acting CEO Kyle Chapman will continue as Baldwin's Chairman, and devote greater focus to BW Forsyth Partners' rapidly expanding portfolio. In 2012, Forsyth acquired then-public Baldwin and took it private.

"After a rigorous search and vetting process, it became apparent that Joe is a perfect fit, with the vision and flexibility to lead Baldwin and to take advantage of the significant opportunity we have to serve the industry," said Chapman. "Joe is a seasoned leader who is highly people-focused—which fits perfectly into both our corporate culture, and into building long-term positive relationships with customers."

Prior to joining Baldwin, Kline served as the president of a division in Eaton's electrical sector. In addition, his previous experience includes commercial leadership roles at Eaton, Duke Manufacturing and Emerson. He holds a bachelor's degree in electrical engineering from Ohio University and a Master of Business Administration in international business from Saint Louis University.



"Joe is a proven business leader with a robust track record of identifying and developing growth opportunities through his strong commercial orientation," Chapman continued. "He will help us get closer to our customers. I'm excited about the innovative solutions that he will help us develop and grow to support our customers as they further unlock their potential."

When asked about what attracted him to Baldwin, Kline remarked: "Baldwin has an impressive and growing collection of connected technologies under one roof, and I'm excited to partner with our global organization to bring these comprehensive solutions to our global markets and customers. I look forward to engaging with our customers around the world to strengthen our product and service capabilities, and to build upon Baldwin's rich heritage of delivering product and service solutions that help our customers improve their operations."

Kline's appointment follows the 2019 appointments of four Baldwin business segment presidents: Rich Bennett at AMS Spectral UV, Tomas Anderbjer at Baldwin Precision Applications, Vince Balistriero at Baldwin Vision Systems, and Matt Shishikura at Baldwin Japan.

■ Baldwin Technology Company Inc.  
baldwintech.com

■ BW Forsyth Partners  
bwforsyth.com

## Expansion of Network in North America

■ Asahi Kasei is accelerating its marketing activities towards the automotive industry. Its regional headquarter in North America, Asahi Kasei America, has just opened an office in Novi, Michigan, to strengthen its marketing functions in North America, mainly in the automotive field.

Mobility is identified as a priority field in Asahi Kasei's medium-term management initiative „Cs+ for Tomorrow 2021“, published in May 2019. In North America, the Japanese technology company manufactures and sells compound resins, battery separators, electronic components and fiber materials for the automotive interior as well as provides technical support to customers in the automotive industry. Many products have been adopted by major automotive manufacturers in the region.

By concentrating the company's automotive marketing functions in Novi close to Detroit, the center of the North American automotive industry, Asahi Kasei will continue to propose innovative products that meet rapidly changing market needs. „This new office will give us a place to connect and collaborate with



our different automotive businesses in North America“, said John W. Moyer, Senior Executive Officer of Asahi Kasei Corp. And Chief Strategic Officer of Asahi Kasei America, Inc.

In addition to mobility, there are many other potential growth fields in North America. To accelerate new business creation, Asahi Kasei America will continue to strengthen its marketing function in collaboration with the Marketing & Innovation unit of Asahi Kasei Corp. Which was established in April 2019.

■ Asahi Kasei Europe GmbH  
www.asahi-kasei.co.jp/asahi/en/  
www.asahi-kasei.eu

## Modern PET Bottle Concepts

■ New concepts in PET bottles are the next big thing in wine and Amcor unveiled its most recent designs at the Unified Wine and Grape Symposium in February in Sacramento. In addition to custom designs, Amcor is announcing its collaboration with British multi award-winning start-up Garçon Wines to make their signature and more sustainable flat wine bottles available to the U.S. market.

"We know today's wine consumers are looking for a unique experience," said Beth Rettig, vice president of spirits, wine and food, Amcor Rigid Packaging. "Amcor's concepts are sleek, modern and perfectly matched to today's lifestyle requirements for convenience and sustainability. PET bottles are unbreakable, beach- and pool-friendly, and the designs are only limited by the imagination. There are also environmental benefits: our bottles are lightweight, infinitely recyclable\* and have a lower carbon footprint than glass bottles or aluminum cans."

Amcor and Garçon Wines will also be collaborating to produce the flat wine bottles made with post-consumer recycled (PCR) PET plastic in the U.S. A 2018 Dow Packaging Innovation



Awards Diamond Finalist, Garçon Wines' flat wine bottle has been generating significant interest in its home country of the UK, as well as in Europe, and is now set to come to the U.S. to continue its multinational expansion. A serious challenger to round glass bottles, the recycled PET flat bottle with granted patent and patents pending in the U.S. will become widely available in the U.S. in the second half of 2020. By innovating in shape and using best-in-class material, it becomes a game-changing, sustainable solution.

"As we are facing a climate emergency and existential threat, we urgently need to be making step changes to products to slash their carbon footprint. Flattening the wine bottle saves space and making it from recycled PET saves weight and energy," said Santiago Navarro, CEO and co-founder of Garçon Wines. "We are highly motivated by the opportunity to collaborate with Amcor for our flat wine bottles in the world's largest wine market. As the leading plastic packaging company to the U.S. wine industry, Amcor is the perfect partner for the stateside launch of our innovative wine bottles."

PET, which has rapidly become the world's preferred packaging material, is lightweight, shatterproof, resealable, reusable, and infinitely recyclable (With existing technologies including chemical recycling). PET plastic bottles often have the lowest carbon footprint and their production results in up to 70% less greenhouse gas emissions, according to Amcor's As-set Lifecycle Analysis. For more information:

■ **Amcor**  
[www.amcor.com](http://www.amcor.com), [www.amcor.com/choosepetbottles](http://www.amcor.com/choosepetbottles)  
**Garçon Wines**  
[www.garconwines.com](http://www.garconwines.com)

## Acquisition

■ Davis-Standard, LLC announced that it has acquired Deacro Industries, Ltd ("Deacro") of Mississauga, Ontario. Deacro ([www.deacro.com](http://www.deacro.com)) designs, manufactures and assembles high performance slitting, rewinding and roll handling equipment for the converting process of paper, film and foil materials.

"Deacro is a market leader in high performance slitting and rewinding equipment technology for flexible packaging applications and we are excited to welcome their dedicated team to Davis-Standard," said Jim Murphy, Davis-Standard President and CEO. Murphy added: "We are enthusiastic about this opportunity with Deacro; our organizations share a common focus on providing our customers solutions, service and technology." Clarence Beishuizen, President of Deacro Industries Ltd., remarked on transaction.

"We are very pleased to join Davis-Standard, an organization that shares our business values and long-standing reputation as a global leader in the industry," he said. "With Davis-Standard we have a partner that is committed to our customers, employ-



*Pictured is Deacro's Model T800 duplex twin-turret slitter, which provides unloading of finished rolls and core set-up while simultaneously running web*

ees and advancing technology. Deacro will continue to operate and serve its customers as before and we are enthusiastic about our opportunities with Davis-Standard."

Murphy concluded with: "This is an exciting day for both organizations as we begin our future together."

■ **Davis-Standard, LLC**  
[www.davis-standard.com](http://www.davis-standard.com)

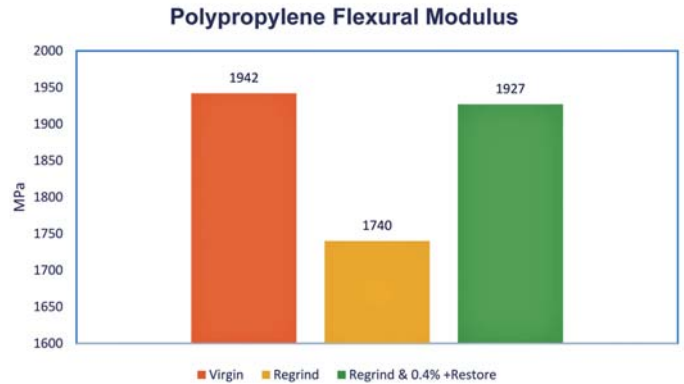
# Low Levels of +Restore™ Additive improve Properties of PP and HDPE Post-Consumer Recyclate

Physical property tests carried out by Riverdale Global in cooperation with a molder of packaging containers has demonstrated that +Restore™ liquid additive is even more effective than was originally claimed for improving the performance of plastics regrind based on post-consumer waste.

The test results indicate that at relatively low usage levels, the +Restore liquid additive enables processors running 100% post-consumer PP or HDPE to obtain products with virgin-like properties. Below are some test results comparing 100% virgin polypropylene with 100% PP regrind containing 0.4% +Restore additive:

- **Flexural Modulus.** Regrind PP tested at 99% of virgin PP.
- **Strain at Yield.** Regrind PP tested at 89% of virgin PP.
- **Strain at Break.** Regrind PP actually tested higher than virgin, at 106%.
- **Izod Impact Strength.** For regrind PP modified with +Restore additive, this property tested at 16% less than that of virgin PP, versus unmodified regrind at 49% less.

“These test results and similarly encouraging data for HDPE show that plastics processors can use the +Restore additive to meet sustainability goals by actually upcycling post-consumer



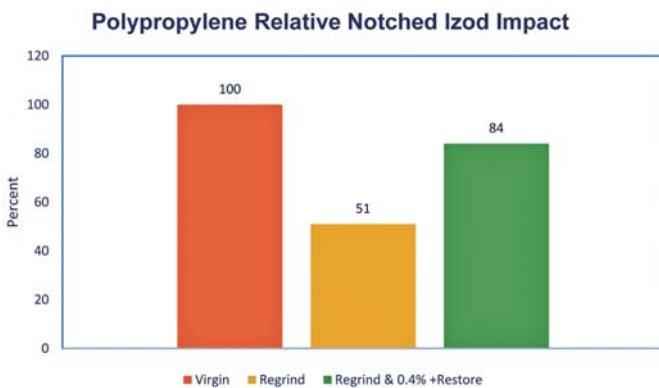
waste, eliminating most, and in some cases all, of the property losses typically incurred in recycling,” said Jared Arbeter, technical sales manager.

+Restore also improves part consistency in comparison with untreated recycled material, Jared Arbeter noted. As measured by standard deviation in a range of physical property tests, for example, HDPE regrind with 3% white concentrate exhibited 50% or more decreases in part variation when it contained 0.4% of the +Restore additive.

Other benefits are provided by the +Restore additive, according to Jared Arbeter: “Because the additive has an affinity for the base polymer, it acts as a lubricant, enhancing melt flow. In addition, the +Restore molecule has a functional group that readily reacts with pigments, fibers, or fillers in the resin, while a different segment of the same molecule is designed to couple with the polymer; as a result, it forms a strong bond between resin and filler without compromising flexibility.”

The +Restore additive can be used in all thermoplastic processes, alone or in a blend with Riverdale Global’s liquid colors. Typical usage rates are in the 0.1 to 0.5% range.

RIVERDALE GLOBAL, LLC  
www.riverdaleglobal.com



## Statement on CHINAPLAS Scheduling Announcement

Plastics Industry Association (PLASTICS) President and CEO Tony Radoszewski says: “CHINAPLAS and NPE® share the same goal of providing a venue where the global plastics industry can come together, network, and grow. The Plastics Industry Association (PLASTICS) and NPE: The Plastics Show have long enjoyed a positive, mutually-beneficial relationship with Chinaplas and its producer, Adsale. Chinaplas’ decision and capability to move their show dates so that they don’t overlap with NPE2021 and move their show venue to a

region with new market opportunities amount to a big win for both our organizations, our events, and for the global plastics industry as a whole. We thank and congratulate the Adsale and Chinaplas team for making this shift and look forward to many more years of a mutually-beneficial relationship that promotes growth in plastics around the globe.”

The Plastics Industry Association (PLASTICS), formerly SPI  
plasticsindustry.org



## Reciprocating Head introduced – Automated Extrusion Process Drastically changes the Extruded Profile

Guill Tool has released its new reciprocating head. The traditional tip and die assembly is replaced with a linear reciprocating assembly that changes the tube's profile within a given length. This process is repeated throughout a single ex-

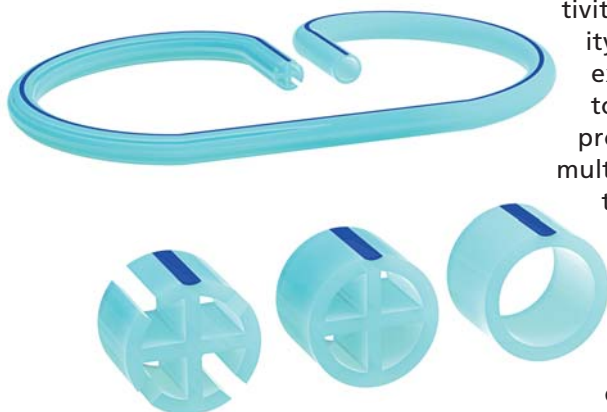
trusion run without interruptions. Cutting capability, in association with the extrusion speed, cuts the finished product to length.

While cost and value stream activities are reduced, quality is improved. Only one extrusion run is needed to produce a finished product, as opposed to multiple extrusion runs with tooling changes along with a manual assembly operation to connect different tubing shapes. Guill's new reciprocating head eliminates an assembly

operation. It also eliminates in-process inventory. Thus, there is no need for storage of various tubing shapes and connectors needed for assembly, fulfillment of orders and replenishment of finished goods.

Furthermore, the reciprocating head eliminates a connecting piece, allows JIT production and products made-to-order. Lastly, it reduces total run time from receiving the order to shipping.

Guill Tool & Engineering  
[www.guill.com](http://www.guill.com)

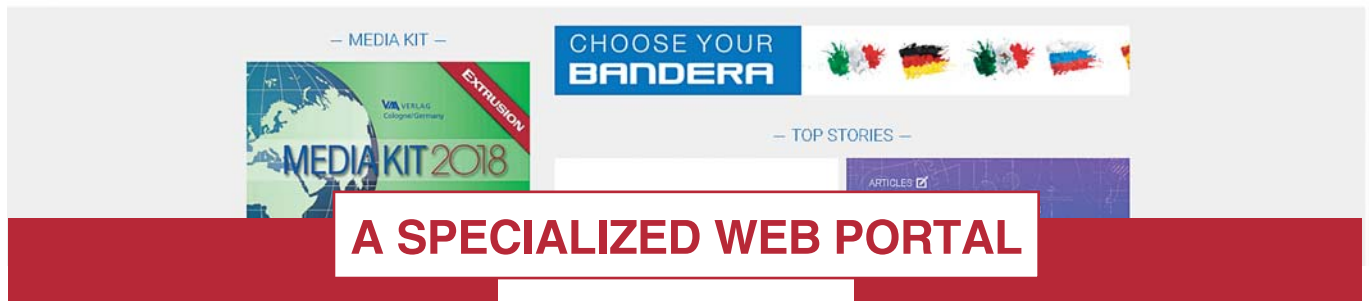


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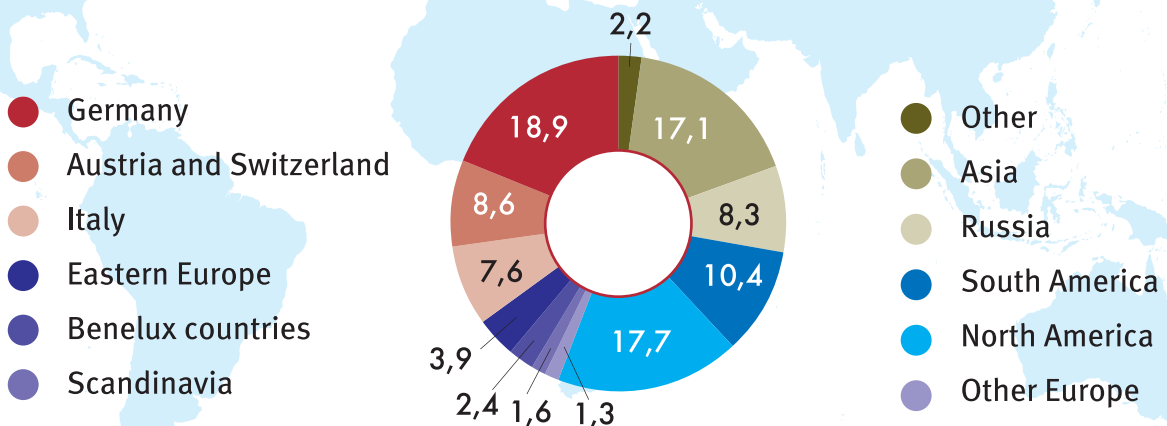


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# DIGI.LINE – Automated Extrusion Process

Greiner DIGI.LINE (Picture: © Greiner Extrusion)

*Extrusion 4.0 has moved into profile production. With the DIGI.LINE from Greiner Extrusion the extrusion process is digitally controlled and optimized in real time. Significant savings have been confirmed by Greiner customers in long-term tests in the harsh production environment.*

**The Greiner DIGI.LINE minimizes material consumption and increases productivity. In addition, process reliability and profile quality in extrusion are increased.**

The DIGI.LINE takes extrusion to a new level and is the result of more than 40 years of process experience at Greiner Extrusion – specifically the development, design, production and tuning of more than 28,000 profile tools and 4,500 extrusion lines.

The world premiere of the DIGI.LINE was at the K Fair 2019 in Düsseldorf, where it convinced more than 1,000 enthusiastic visitors LIVE twice a day.

**Centrally networked, automated control of all line components, maximum savings**

The DIGI.LINE enables central control of all line components, and in addition, automated and error-free reproduction of the process parameters is possible. Certain features of the DIGI.LINE, the products DIGI.CONTROL, FLOW.MATIC, DIGI.TANK and DIGI.SCALE, are the heart of the line and allow a digital extrusion process which is now optimized in real time.

**DIGI.CONTROL – Networked Extrusion Line with Recipe Management**

The new 15" DIGI.CONTROL control system networks all line components and controls the entire extrusion process digitally. For complete reproducibility as well as for fast start-up, so-called "recipes" are stored with the set process parameters. These can be called up and loaded automatically during the next production process, which ensures automated and error-free reproduction during the next production run.

**FLOW.MATIC controls Full Profile Sections Automatically**

FLOW.MATIC is based on the already proven and patented FLOW.CONTROL technology from Greiner Extrusion, and represents the further digital development. With the help of FLOW.MATIC, the degree of filling of individual full profile sections of a profile can be measured. Together with the nozzle function FLOW.CONTROL, this results in a fully

automatic control loop. Within a few seconds, constant profile dimensions are guaranteed, even in the event of process fluctuations such as material variations.

**DIGI.TANK with SHAPE.MATIC keeps the Profile in Shape**

With the DIGI.TANK, water level, water flow rate and vacuum settings can be controlled automatically. The SHAPE.MATIC enables together with an inline measurement system the control of all influenceable contours in the DIGI.TANK. This reduces potential sources of error to a minimum and ensures maximum constancy in the profile geometry. Backup and reproducibility of the process data are guaranteed in connection with DIGI.CONTROL.

**DIGI.SCALE with WEIGHT.MATIC saves Material**

The DIGI.SCALE with WEIGHT.MATIC saves material thanks to precise digital in-line profile weighing on the one hand and on the other hand by controlling the haul-off speed in conjunction with the FLOW.MATIC. This allows profile weight and thus the professional costs to be reduced considerably. By means of the permanent data recording of the DIGI.CONTROL, trends in the profile weight development can be called up at any time. In addition, the Greiner DIGI.SCALE is equipped with LED monitoring.

The DIGI.LINE thus allows central control of all networked line components, automated and error-free reproduction of process parameters, automatic control of full profile sections and automated profile weight optimization. This ultimately enables considerably shorter start-up times, higher profile quality, a larger process window, thus maximum material savings and, as a result, a reduction in profile costs, both for window profiles and for technical profiles. Using the example of a window frame with a weight per meter of 1.2 kg, with 5,000 production hours per year, 1.2 € material costs, an hourly rate of 60 €/h and an output of 350 kg/h, savings of up to 127,000 € per year can be achieved.

Greiner Extrusion Group GmbH  
Friedrich-Schiedel-Str. 1, 4542 Nussbach, Austria  
[www.greinerextrusion.com](http://www.greinerextrusion.com)





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## MAIN TOPICS OF SPEECHES AND DISCUSSIONS

- Film, sheet, profile, tube, cable extrusion manufacturing equipment
- Compounding and batch manufacturing equipment
- Extrusion in recycling of manufacturing and household plastic waste
- Extrusion tools (dies, nozzles, calibrators, corrugators), tooling quick change and purging solutions
- Extrusion line main components (screws, barrels, dosing units, melt filters, pelletizes, degassing systems and others)
- Downstream equipment — drawing and cutting devices, molecular orientation systems, winders, laminators, marking machines and packaging solutions
- Peripheral equipment for material handling, conveying and dosing as well as temperature profile maintaining equipment
- State-of-the-art automation technology for extrusion lines
- Modern means of controlling process parameters as well as end-product characteristics, laboratory equipment
- Extrusion blow molding, thermoforming
- Special extrusion feedstock grades, additives, fillers
- Engineering, business optimization of manufacturing processes

### CONTACTS

Information and registration —  
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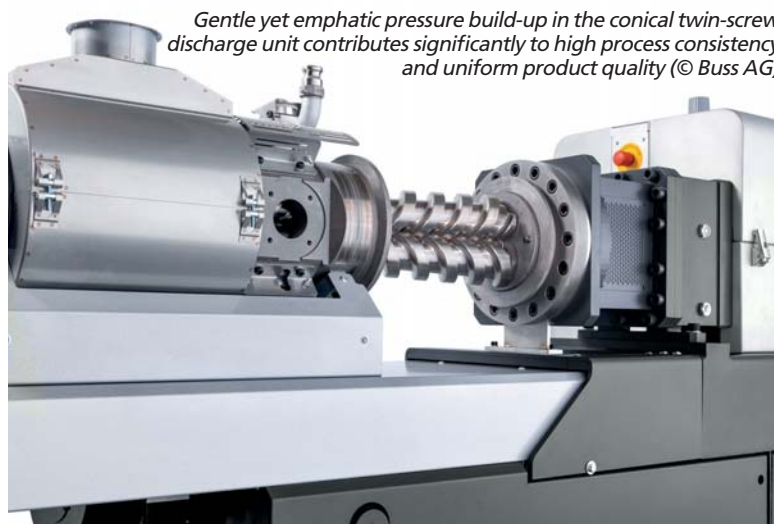
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Журнал «ЭКСТРУЗИЯ»

**ЭКСТРУЗИЯ**

*Only announced to the plastics industry in the run-up to K 2019, a COMPEO 88 compounder from BUSS is already in industrial use. The first user is a multinational masterbatch manufacturer, which has been producing color masterbatches with this system since late October 2019. BUSS's technical center had previously optimized the screw configuration for this specific application – a service that is available to any customers with individual applications – so commissioning took just one week.*



*Gentle yet emphatic pressure build-up in the conical twin-screw discharge unit contributes significantly to high process consistency and uniform product quality (© Buss AG)*

## First COMPEO Compounding System for Color Masterbatch in Operation

The user had selected the COMPEO 88 following extensive series of tests on different compounding systems. One major factor was the particularly efficient dispersion of the high contents of liquid components and color pigment typical of masterbatches. The liquid additives can not only be fed in together with the premix in free fall via the large-area inlet but can also be injected directly into the melt via injection pins. Another decisive factor was the uniform shear in the process section, which prevents temperature peaks and thus enables precise temperature control just above the gelling temperature of the sensitive carrier material.

The gentle yet emphatic pressure build-up in the conical twin-screw discharge unit also makes a significant contribution to achieving the stated goal of high process consistency and thus uniformly high product quality until formulation change. Due to the large number of small lots with a wide variety of formulations and colors that are typical of masterbatch production, such changes may occur very frequently. As a result, the

modularity, accessibility and ease of cleaning of the COMPEO 88 were further major factors in the purchase decision.

Dr. Philip Nising, CEO of the Buss Group says: "Our customer contacted us in 2017 with his demanding compounding task. Thanks to the open and determined cooperation, a solution was quickly found that both sides found convincing and exciting. The COMPEO system proved to be the ideal basis for the combination of gentle dispersion and gentle pressure build-up in a flexible continuous process."

François Loviat, Head of Process at BUSS, adds: "By using the COMPEO 88, this manufacturer is following a growing industry trend of switching from traditional discontinuous batch processes to modern, continuous production which, thanks to optimal controllability, leads to uniform results and increases time- and cost-efficiency. Our COMPEO compounding systems, which have been tried and tested under harsh everyday production conditions, are designed to make this a smooth and seamless transition, as this present example

shows. The customer's project manager is also thrilled and, in addition to the machine's mixing properties and performance, is particularly keen to emphasize its simple, intuitive operation."

BUSS had presented the COMPEO 88 and 110 at K 2019 to join the pilot system COMPEO 55, which had already been launched on the market. All three models are available with process lengths from 13 L/D to 25 L/D, the model size indicating the screw diameter in mm. Typical throughputs for processing thermoplastics are 150 to 300 kg/h (COMPEO 55), 600 to 1200 kg/h (COMPEO 88) and 1200 to 2400 kg/h (COMPEO 110). With a process length of 25 L/D, the COMPEO 88 is optimized for compounding black or colored masterbatches and, if required, can be fitted with one or two additional side feeders.

**wire 2020: Hall 9, Booth C50**

**Buss AG**  
Hohenrainstrasse 10, CH-4133 Pratteln,  
Switzerland  
[www.BUSScorp.com](http://www.BUSScorp.com)

*Tube and hose manufacturers are searching for fast, precise and cost-effective ways to measure and record tubular samples in the laboratory*



*GaugePro 8 Off-Line Measuring Station*

# Fast and Precise Measurement of Tubular Samples

Conventional contact measuring equipment such as calipers, micrometers or dial gauges offer no satisfactory solution. The small, sometimes soft products are deformed by the contact pressure, which has a negative effect on the acquisition of the measured value. In addition, contact measurement methods and their associated results are heavily dependent on the persons making them. Different handling of the measuring tools as well as dexterity often result in significant variations in results.

With ZUMBACH's GaugePro it is now possible to perform the measurement of tubular samples completely contactless. With state-of-the-art ultrasonic technology, the wall thick-

ness, inside diameter and outside diameter are measured instantly. In addition, the ovality and eccentricity can be determined.

The inserted sample is measured immediately at four fixed measuring points. Due to the rotation function, the measurement can be extended to eight measuring points. This increases the coverage around the product and all variations in wall thickness become visible.

An automatic self-calibration ensures that the measured values are accurately and reliably recorded even under changing environmental conditions.

All measured values are displayed clearly in the large user interface. Several measured tube samples can be summarised in a common statistic. The logging of the measurement results is thus fast, easy and reliable.

GaugePro can make the measurement results available in different ways. In addition to a conventional printout of the measurement results, they can also be stored in a CSV file, or written directly to a customer-side MySQL database via the ODBC interface.

Currently two GaugePro variants are available. GaugePro 8 covers a diameter range from 2.5 mm to 8 mm. GaugePro 22 can measure tube samples from 6.8 mm to 22 mm.

Using GaugePro makes off-line measurement of tubular samples significantly faster, more accurate and more reliable. A handy and efficient tool has emerged that considerably increases the productivity of every quality assurance and supports modern digitization.

*GaugePro Main Screen*



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*There is an increasing rate in the use of automation in materials testing, especially since even the smallest disruptions can alter measured values. Time consuming and monotonous tasks are also often carried out by robots. ZwickRoell offers a wide range of possibilities for automation in materials testing. Testing systems range from efficient automation of small series tests using collaborating robots in the lab to fully automated testing laboratories that work around the clock*



## Automation Trends in Materials Testing

Classic robotic testing systems, for example based on industry robots, have been used successfully for years. Because of their high load capacity they are able to move even heavy specimens. The wide range of specimen magazines makes them ideal for long test series – hundreds, and even thousands of specimens are autonomously processed magazine by magazine. In example, through the use of different roboTest testing systems from ZwickRoell. In connection with the corresponding testing machine, they are not only the perfect solution for standard tensile tests on metals or plastics under normal conditions, but flexure tests, temperature controlled tensile, notch impact and puncture tests, as well as measurements of ball indentation hardness can also be automated.

### Complete systems

Not only can the actual test be performed without employee intervention, but ZwickRoell also builds fully autonomous testing laboratories using AGVs (automated guided vehicles) and additional handling robots that are coordinated with ZwickRoell's autoEdition 3, just like the robots used for the testing process. When necessary, they run 24 hours a day and autonomously assume materials testing, from placement of the specimens onto a transport belt to the disposal of the destroyed specimen. All that's left for workers to do are specimen production and

preparation. A fully automated testing lab is especially worthwhile for quality assurance in ongoing production with high material throughput. After removing the specimens or materials from the manufacturing process, they are formed into the required shape and size. Every specimen is given a bar code or 2D code and can be automatically and clearly identified in the system. The only thing left is transfer of the specimens to the robot testing lab: the specimens are placed on a belt conveyor and sent risk-free within reach of the robot, they are recognized by their code, assigned to the correct test and testing machine, and sorted onto the proper tray.

### Driverless transport

Further transport is carried out by AGVs, which take the trays to the corresponding testing machine. With an integrated laser navigation system they create a map of their surroundings and independently determine the ideal route to their destination. With the autonomous navigation, they are superior to the classic solutions that, for example, have to follow a wire embedded in their path or an adhered contrast line. Their only option to react to obstacles is to stop and wait until their path is clear or by communicating with an operator. If the path is not cleared, the delivery is stopped, and worst case until there is no material left at the target destination, and an em-

employee has to go search for it. The solution from ZwickRoell has the ability to drive around obstacles, ensuring an uninterrupted chain of transport. Once having arrived at the intended testing machine, the AGV loads the tray with the new specimens into the testing system's magazine. One of the recognized robotic testing systems from ZwickRoell, for example the roboTest L, assumes processing of the delivered specimens: equipping the testing machine, the testing process and the transfer of data to the customer's software systems and, of course, the removal of the destroyed specimen are fully automated. The identification numbers of the specimens are read by the cameras so that the test data can be correctly linked with the corresponding specimen. An AGV takes the empty trays and transports them back to specimen preparation. There they are refilled and the cycle starts over.

#### Automating small series

The work carried out successfully at a large scale saving a lot of time, up until now has not been economical at a small scale. The installation of stationary robotic testing systems is costly and requires time, as well as specialists who are familiar with their programming. In addition, depending on the system, a wide range of safety measures are necessary to avoid injuries and accidents: the powerful industry robots are not intended for use in direct collaboration with humans. They do not have the option to react to their environment such as through an emergency shut-off, if a person is within their working range. In most cases a safety barrier is required, which eliminates the direct interaction of man and robot. Therefore, up until now small series tests have been carried out by humans. Even if a task is extremely monotonous, it was much quicker to entrust an employee with 20 tensile tests or 50 Charpy impact tests, than to install a large robotic testing system. For the first time, with roboTest N, ZwickRoell is able to provide the possibility to automate series test-

ing with a small number of specimens with a lower specimen weight. Based on a smart robot, the system is fully integrated in ZwickRoell's autoEdition 3 and testXpert III. Therefore, a robot operator terminal or special robot programming and operating knowledge are not necessary. Instead the roboTest N, in the truest sense of the word, is taken "by the hand" and taught the necessary point of reference. In regards to software, parameters are set in a familiar software environment. Not only is the setup of the smart robot easy and uncomplicated, its work speed and force are similar to human proportions. Sensors detect external influences and stop the system if something gets in its way. Therefore, once cleared with laboratory safety personnel, the roboTest N can work alongside persons without the need for additional safety measures – locked off work areas are unnecessary.

#### Diverse application options

The light weight robot is fastened to a movable table specifically intended for the robot. With this mobile base, application options are widely expanded. The smart robot can be moved to the appropriate testing machine and connected to the system. This not only allows for uncomplicated processing of alternating small series, but also automated performance of a variety of tests. Tensile and compression tests can be as autonomously processed as three-point-flexure tests, Charpy impact tests or hardness tests. The movable base also provides space for custom manufactured magazines – for example in a 3D printer – from which the roboTest N can automatically take additional specimens. If started just before the end of a shift, the robot extends the workday by the contents in a magazine, and the results are available at the start of the next day. Automation of monotonous standard tests allows qualified employees to focus on more complex test applications that require more attention. The independence from the operator that is achieved with the use of a robot is also a benefit. The uniform movement sequences in feeding the testing machine and with that, consistent positioning of the specimens, eliminate user errors or inaccuracies and increase the reliability of test results.

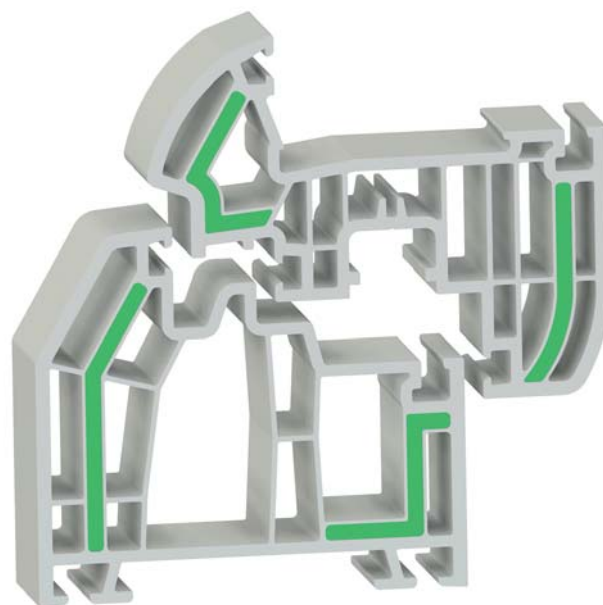
#### Conclusion

Robotic testing systems provide the user with a number of benefits in series testing, from time savings all the way to improvement of the informative value of the test results. With various roboTest testing systems ZwickRoell covers the full range of testing automation – from short-term support for continually changing small series in the lab, all the way to fully automated testing laboratories without human intervention.



# For the Windows of the Future – New Ultradur<sup>®</sup> Grade improves the Properties of PVC-Window Profiles

*New Ultradur<sup>®</sup> grade improves the insulating properties of window profiles. Application example of Ultradur (green) in a PVC window profile, produced in co-extrusion process*



*Modern insulation is a key to effective climate protection, and this also applies to window profiles in new and renovated buildings. BASF has developed an Ultradur<sup>®</sup> (Ultradur<sup>®</sup> B4040 G11 HMG HP green 75074) that can be used for co-extrusion with PVC and is now available with a significantly improved property profile. With this new Ultradur<sup>®</sup> grade, PVC window profiles can be mechanically stiffened in the co-extrusion process. Compared with steel stiffening, the profile is lighter and can be produced at lower cost without compromising on stability and with improved insulation. Slimmer geometries are also potentially possible*

### Improved material properties – higher efficiency

The BASF Ultradur® plastic is put to use in numerous industrial applications for high-grade and heavy-duty technical components. This special development of an Ultradur® blend reinforced with 55 percent glass fibers benefits profile manufacturers and window manufacturers in numerous ways.

And the good news for all profilers: the melt temperature has been lowered again significantly, thus further simplifying the co-extrusion process with polymers such as PVC, as the melting point is very close to the processing temperature of PVC. "Our new, improved Ultradur grade offers profile manufacturers and window producers clear-cut advantages in production. Our product and the manufacturing process are amenable to trouble-free integration into existing production lines," says Dr. Kay Brockmüller, Project Manager Construction at BASF.

### Ultradur® – reliable partner with high-level properties

The newly developed material also exhibits the existing core properties. Ultradur® possesses high stiffness and binds with PVC. Suitably positioned, it can replace a conventional steel stiffener in the profile. The co-extruded profile is weldable and can be machined on existing equipment. For window makers, this reduces the production effort, as it eliminates all steel-related activities. In addition, handling is easier during production and installation in the building, because the profile reinforced with Ultradur® is much lighter. A further positive feature for the customer, in addition to improved insulation performance, is that the profile exhibits high dimensional stability when installed and shows virtually no post-shrinkage after installation.



*Co-extruded profile made of Ultradur® (green) and PVC for highly insulating windows*

At the international "FENSTERBAU FRONTALE" trade show from March 18 to 21, 2020, in Nuremberg, Germany, the systems provider profine group will present a profile (proStratoTec) suitable for passive houses using this technology, which is also suitable for colored profiles and window elements.

### Fit for the future – recycling and new applications

There are fixed recycling rates for PVC window profiles in many countries. Hybrid profiles of PVC and BASF's new Ultradur® can be separated and recovered at standard recycling facilities. The window manufacturer profine is currently modifying its recycling facilities so that the two materials can be separated and concentrated and used in new profiles. In the future production waste and scrap from partnering window manufacturers can be reprocessed.

### The multitalent – further fields of application

New Ultradur® with its proven property profile is also attractive for other industries. Wherever extruded profiles need to be reinforced and a light, extremely rigid or high-insulation product is required, BASF's technical plastic is the partner of choice. This is particularly important wherever elevated temperatures are involved.

### Fast track to the ready-to-use die

Greiner Extrusion Group in Austria, world-wide renowned supplier of extrusion lines, dies and complete systems for profile extrusion, already proved competence in manufacturing dies that process this improved product with the desired high fiber orientation, running reliability and extrusion speed.

*Co-extruded pipe made of Ultradur® (green) and PVC*



# „Two Premieres and New Campaigns“

Interview with Friedrich-Georg Kehrer,

Global Portfolio Director for Metals and Flow Technologies



*In late March 2020 the world's No. 1 trade fairs for wire, cable and tube, wire and Tube, will once again open their doors in Düsseldorf.*

*What's new about the two trade fairs?*

**Friedrich-Georg Kehrer:** There are a number of new features at our industry highlights wire and Tube but also at the Düsseldorf Exhibition Centre proper.

We will be able to follow on from the good registration results obtained at the previous 2018 events with some 2,600 exhibitors from 65 countries. Again 16 exhibition halls will be occupied extending over a net total of over 120,000 square metres.

We will have not one but two premieres and new campaigns in 2020: Exhibition halls 16 and 17 will see a premiere: for the first time, the complete value chain for fasteners and springs will be presented here. In addition to production machinery and equipment, finished products in the form of fasteners, connectors and technical springs will now also be show.

This means that from 2020 wire will be the new information and order

platform for the producers, marketers and buyers of screws, fasteners, construction elements and fitting parts, all types of springs and bent wire parts.

For the first time, we will be running a large-scale eco-Metals Campaign for the entire duration of wire and Tube 2020. Exhibitors who are particularly committed to the areas of energy-saving production, material and resource efficiency, climate-compatible use of renewable energies or optimised energy controlling can join in the Campaign.

Their stands will be specifically labelled by a corresponding sticker, they will be highlighted by accompanying press liaison and marketing measures and can become part of the daily ecoMetals trails. ecoMetals trails are guided tours stopping by these exhibition stands. Participating exhibitors are given the opportunity to personally provide detailed information about their company's innovations at their stand for a fee.

Interested trade visitors can register online for participation in an ecoMetals trail in the run-up to the event. Spontaneous participants on site are also welcome, of course. The meeting point is the ecoMetals information counter at entrance "Nord".

The new generation of entrepreneurs will decisively impact the future of these industries. Which is why young companies are given the opportunity to present themselves here with innovative products, services and optimisations. They will prove their skills at a pavilion organised by the Federal Ministry of Economy and Energy. Their stand fees will be co-funded by the Ministry.

June 2021 will see the holding of a trade fair specialising in sawing and alternative separating technologies entitled Saw EXPO in Friedrichshafen. The location in Southern Germany seems ideal since it is home to many manufacturing companies with a key focus on sawing and alternative separation technologies.

We plan to firmly establish Saw EXPO in Friedrichshafen long term holding it every other year to alternate with Tube. At this location it can grow – and what's more, its themes perfectly complement our international Metals and Flow Technologies portfolio.

At Tube 2020 in Düsseldorf the exhibitors of saws and alternative separation technologies will already be highlighted by accompanying press liaison and advertising measures and a special stand design.

Premiere for Tube exhibitors from the tube production, tube accessories and tube trade segments in the new exhibition Hall 1. 158 metres long, 77 metres wide and offering more than 12,000 square metres of floorspace it corresponds to roughly the size of Halls 8a and 8b.

In technical terms the new Hall 1 lives up to the high standards of the whole exhibition centre. It can be accessed via seven gates, suspensions from the hall ceiling are possible as is the supply of stands with power, water and compressed air from the hall floor.

For visitors the hall is connected with Congress Center Düsseldorf (CCD Süd) via a footbridge on the 1st floor. In addition to its access to Halls 3 and 4 there is a direct walkway from the South entrance to the rest of the exhibition centre.



*How have the industries developed? Which innovations will the exhibitors present to make a statement?*

**Kehrer:** The exhibitors of wire – the most important international trade fair for wire and cable – as well as Tube – the international No. 1 trade fair for the tube industry – present their technology highlights to an international trade audience. The leading trade fairs are therefore must-go events for the whole industry.

wire and Tube regard themselves as pacesetters – also and especially in these times of heightened uncertainty caused by trade tensions between the USA, China and Europe and the UK due to Brexit.

According to the “Deutsche Wirtschaftsvereinigung Stahlrohre”, the energy industry, the automotive sector and mechanical engineering remain the key users as before.

The challenges are also accordingly high for the wire and cable industry: economic unpredictability in the wake of increasing protectionist tendencies put a burden on the industry, according to Germany’s “Eisendraht- und Stahldraht-Vereinigung” (German Iron and Steel Wire Association).

However: more cables, more lines and more wires are the positive consequence of the constant and rapid changes affecting mobility. The demands made on the industry in terms of innovations and flexibility are rising, new drive technologies, autonomous driving or e-mobility determine the thinking and decisions taken in

boardrooms. Demand is also driven by more and more artificial intelligence in vehicles and users’ rising multi-media requirements.

*What does wire 2020 have to offer?*

**Kehrer:** wire 2020 covers a comprehensive spectrum of themes ranging from machinery and equipment for wire manufacturing, wire processing and finishing, spring and fastener technologies and their finished products, auxiliary materials and process technology tools through to glass fibre. Glass fibre is a highly topical theme of growing significance because ultra-high-speed fibre optic links are expanding worldwide.

Furthermore, the latest developments in test engineering and specialist areas will be on display. Exhibitors provide information on trends in measuring and control technology. Additionally, materials, special wires and cables will be in focus.

*What does Tube 2020 offer?*

**Kehrer:** The leading international trade fair will cover the complete spectrum of the industry – from tube manufacturing and finishing to tube processing and tube trade.

The ranges at Tube cater to all crucial aspects of the tube industry – profiles and machinery, test engineering and specialist areas, pipe manufacturing machinery as well as second-hand machines.

Just as indispensable to the sector are measuring and control technology

as well as raw materials, tubes and accessories. Tube also addresses the trade with pipes and tubes made of FE-metals, NF-metals, plastics, glass fibre, glass, ceramics, concrete and fibre cement. On top of this, process technology tools and auxiliaries will be on show.

*What countries do the exhibitors and visitors of wire and Tube hail from?*

**Kehrer:** Our exhibitors primarily come from Italy, Great Britain, France, Turkey, the Netherlands, Belgium, Spain, Switzerland, Sweden, Austria, Poland and Germany. Companies travelling to Düsseldorf from overseas come from the USA, India, Taiwan, South Korea and China.

To the tune of 70,000 trade visitors are again expected over the five days of the trade fairs. Most guests will come from the strong production and buyer countries such as Italy, Belgium, Great Britain, France, the Netherlands, Spain, Switzerland, Austria, Russia, Turkey and Germany. From overseas we expect many visitors to come from the USA, Brazil, India and China.

*How are themes at wire, cable and tubes developing on an international scale?*

**Kehrer:** Very much in line with exhibitors and visitors – and always with an eye on regional needs and interests: This is the hallmark of our global network of trade fairs and satellites for the wire, cable, tube and pipe industries.

Our international trade fairs include wire China/Tube China in Shanghai, wire India/Tube India and METEC India in Mumbai, wire Russia/Tube Russia, Metallurgy Russia, Litmash Russia in Moscow, wire Southeast Asia/Tube Southeast Asia in Bangkok, wire South America/TUBOTECH in Sao Paulo as well as the Tube & Pipe Producers and Suppliers Pavilion at FABTECH in Chicago.

*With more than 118.000 square metres net and 2,686 exhibitors, wire 2018 and Tube 2018 are bigger than ever before (Photos: Messe Düsseldorf, Constanze Tillmann)*



**wire Tube: 30. 03. – 03. 04. 2020**

Messe Düsseldorf GmbH  
Messeplatz, 40474 Düsseldorf, Germany  
[www.wire.de](http://www.wire.de), [www.tube.de](http://www.tube.de)

*At wire 2020 in Düsseldorf SIKORA presents a broad portfolio of future-oriented measuring and control systems for an efficient and sustainable quality control for the wire and cable, optical fiber and plastics industries*

*The X-ray measuring system X-RAY 6000 PRO ensures a precise measuring and control of the cable dimensions for more cost efficiency and sustainability*

## Innovative and Sustainable Measuring and Control Technologies – SIKORA at wire 2020

Numerous intelligent technologies, for example, for online measurement of wall thickness, eccentricity and the diameter of cables, confirm SIKORA's claim to develop and provide innovative and sustainable measuring solutions for the global cable market. "Quality and sustainability are core elements of our business strategy and decisive for the business success of our customers," explains Harry Prunk, member

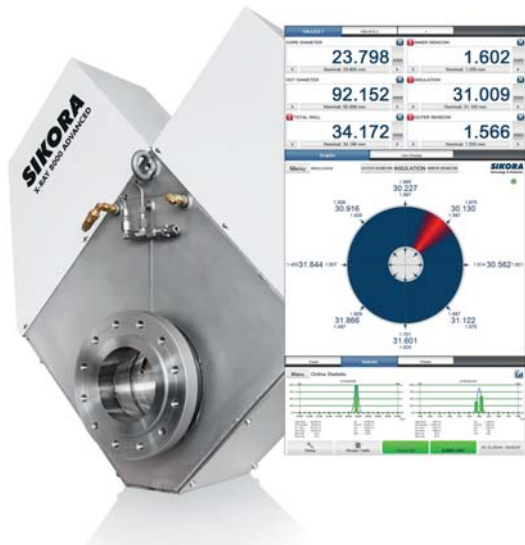
of the executive board of SIKORA AG. "For almost five decades, our measuring systems have contributed to quality control and a simultaneous reduction of plastic material during cable production. This saves costs and automatically preserves resources," Prunk further says.

*The new FIBER TENSION 6003 measures the tension of optical fibers in the drawing tower*



At wire, visitors can find out more about the performance of the measuring devices during extensive product demonstrations. One highlight is the X-ray measuring system X-RAY 6000 PRO that is used for the measurement of wall thickness, eccentricity, the diameter and ovality of cables with up to three different material layers, for example in insulating and jacketing lines. As a pioneer in X-ray measuring technology for cable extrusion, SIKORA has been setting trends for 30 years. The combination of the X-RAY 6000 PRO with the processor system ECOCONTROL 6000 allows for an automatic control of the wall thickness. By reducing the wall thickness by, for instance, 5%, plastic material savings in the six-figure range can be achieved.

The quality of a cable starts with the pureness of the plastic pellets. Thus, SIKORA also offers online and offline inspection, sorting and analysis systems for plastic pellets. Visitors can bring their plastic pellets, which will be inspected and analyzed by



The measuring values of the X-RAY 8000 ADVANCED are clearly visualized at the monitor of the included processor system



The PURITY CONCEPT X is used for lab inspection of plastic pellets for metallic contamination by X-ray technology

the laboratory testing device PURITY CONCEPT V live on site. By using inspection and sorting systems, contamination can be excluded, breakdowns eliminated and material costs saved. Besides economic advantages, the environment can be preserved at the same time due to less waste.

With the premiere of the FIBER TENSION 6003, SIKORA widens its product family for quality control of optical fibers. The gauge head is used for an extremely fast and robust tension measurement and control. Due to the high measuring rate of up to 10 kHz and the application of the bire-

fringence principle, the stand-alone gauge head is particularly attractive for manufacturers of high-end solutions. The FIBER TENSION 6003 is predestined for optical fibers that are further processed into premium optical fiber cables. The FIBER TENSION 6003 can be used for hot as well as cold measurement of the bare fiber.

**SIKORA solutions for wires and cables**  
 With the X-ray based "X-RAY 8000 ADVANCED", SIKORA showcases at wire 2020 state-of-the-art High-Speed-Technology (HST) that is tailored to the demands of MV, HV and EHV cable production. It represents an advanced alternative to the successful and proven "X-RAY 8000 NXT". The system is equipped with 16 measuring sensors and measures the diameter, wall thickness and eccentricity of cables in CV lines up to 10 times faster than the "X-RAY 8000 NXT", and thus, is predestined for an even more efficient control and information transparency in terms of Industry 4.0.



wire 2020: Hall 9, Booth A41

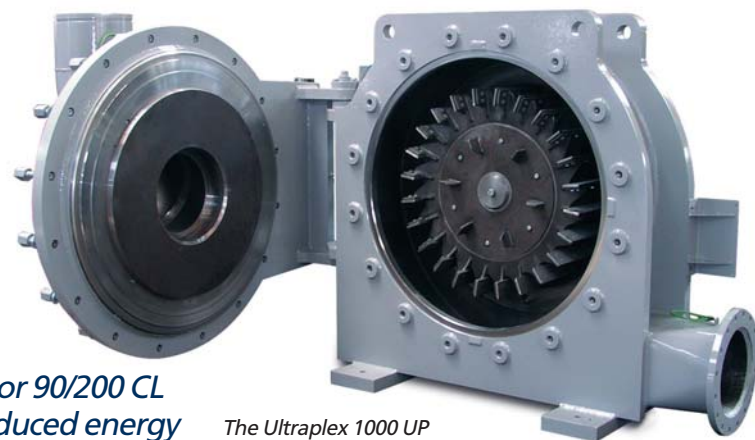
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*Universal granulator for recycling plastic waste – the Compact-Line from Hosokawa Alpine*

## Smart Granulator sets New Standards

*With the Compact-Line Granulator 90/200 CL, Hosokawa Alpine – one of the leading suppliers on the sector of process technology and film extrusion – will introduce a modular granulator for recycling plastics of all kinds at the wire Tube 2020. The current generation of this proven mill has been systematically refined and now offers a great diversity of equipment features in the standard version. With a throughput rate of approx. 4000 kg/h, the Compact-Line Granulator 90/200 CL speaks for itself with its higher performance at reduced energy requirement, and has become increasingly popular in the branch for comminuting thin film.*

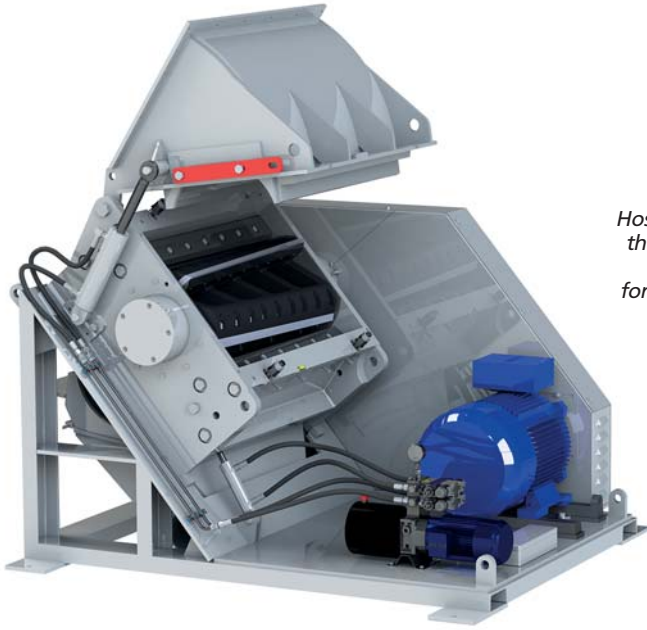


*The Ultraplex 1000 UP fine impact mill is a versatile mill for the size reduction of soft materials to 3.5 Mohs' hardness*

**High quality and reliability:** "The focus in R&D was on maximum suitability for everyday use and high customer benefits", informs Thomas Bäßler, Head of Sales & Projects in the Recycling and Granulators Division of Hosokawa Alpine's process

technology business segment. The patented Alpine cross-scissor-cut rotors guarantee, for example, an optimum material intake and distribution and enable the economic comminution of plastics. The cutting knives also possess a generous

regrinding potential, which in turn leads to a reduction of the requisite spare parts. The electrohydraulic opening mechanism for mill top section and screen support enable quick and comfortable access to the rotor and cutting chamber. Downtime due



*Hosokawa Alpine will introduce the Polymer-Line PL-XS 45/100, a compact granulator for the economic size reduction of large-volume and bulky plastic products*

to cleaning procedures is reduced to a minimum thanks to the intelligent machine design.

#### **Versatile size reduction system with interchangeable grinding elements**

With the Ultraplex 1000 UP fine impact mill, Hosokawa Alpine will launch a versatile mill for the size reduction of soft materials to 3.5 Mohs' hardness. Dependent on the feed material, the fine impact mill can be equipped simply and quickly with different, interchangeable grinding elements. "Flexibility in production plays an increasingly important role. The interchangeability of the grinding elements is a significant advantage for users", reasons Bernd Kneisl, Operations Director of the Recycling and Granulator Division in Hosokawa Alpine's process technology business segment.

**Equipped for any task:** The 1000 UP can be employed as a beater mill without sieve but with beater disc, swing beater or plate beater grinding unit for operation with grinding tracks or sieve rings. In the plastics industry, this versatile mill can really show its true mettle above all when it comes to the fine grinding of polyamide, PVC PTFE or PE. Dependent on the grinding element, fineness values in the range of approx. 50

µm to 5 mm are achieved. Just as extensive as the equipment of the fine impact mill are also the available designs: dependent on the customer's individual requirements, the 1000 UP can be delivered with a cast housing made either of mild steel or stainless steel.

#### **Universal in use and compact in design**

Hosokawa Alpine will also establish the Polymer-Line PL-XS 45/100, a compact granulator for the economic size reduction of large-volume

and bulky plastic products. Thanks to its special cutting chamber geometry, the granulator has excellent product intake and size reduction properties. "The ingenious cutting chamber design also ensures quiet machine operation, as the result of which the instances of feed product being ejected from the machine are reduced to almost zero", says Jörg Krause, Head of Engineering of the Recycling and Granulators Division of Hosokawa Alpine's process technology business segment.

**Low-dust comminution:** Another highlight of the Polymer Line is the hydraulic opening mechanism for optimum access to the cutting chamber. The cross-scissor-cut rotor developed by Hosokawa Alpine guarantees energy-efficient and low-dust comminution. The optional sound insulation reduces the noise emission during operation. Due to their characteristics, the mills of the PL-XS product line can be used both as ancillary mills and as central mills. The manifold possibilities of adapting the machine to the respective feed product emphasise the universal application.

#### **Polyplex PPC 50/120 unites a shredder and a granulator in one single machine**

"With the Combi-Grinder Polyplex PPC 50/120, a new development



*Polyplex PPC 50/120 unites a shredder and a granulator on one single vertical shaft*

*Rotoplex – the classic granulator from Hosokawa Alpine is constantly refined and improved and makes its mark even in the current seventh generation by virtue of its reliability and top performance*



from Hosokawa Alpine, granulator fineness values are achieved in just one step. The joint drive makes the size reduction far more energy-efficient", says Josef Zöttl, creative mind and Senior Sales Manager in the Recycling and Granulators Division of Hosokawa Alpine's process technology business segment. The unique factor: the machine has a vertically arranged rotor with a top-mounted shredder and the granulator section underneath.

**Unbeatable flexibility:** The machine's concept is quite simple: basically, shredder and granulator are combined to form one machine. With the aid of an intake unit, the feed material is automatically dosed and charged to the shredder-granulator combi. The feed rate can be individually adjusted to suit the problem specification. After passing through the shredder section, the pre-comminuted material falls into the granulator section and is comminuted there to granulator fineness. The Polyplex is especially suitable for in-house recycling. Thanks to its unique design, different plastic parts such as reject housings, sprues and purgings can be charged together. The vertical design of the mill also brings advantages when cleaning, enabling extremely easy access to the rotor and cutting

knives. This guarantees not only fast cleaning but also significantly reduces downtime.

#### **Reliable and high-performance recycling of plastic waste**

The efficient recycling of production waste within the framework of a closed material circuit is becoming increasingly important. Hosokawa Alpine sets standards here thanks to its decades of experience. The Rotoplex model from the granulator product line has proven itself to be particularly successful for the reliable size reduction of all kinds and shapes of plastic waste. This classic granulator from Hosokawa Alpine is constantly refined and improved and makes its mark even in the current seventh generation by virtue of its reliability and top performance.

**High cutting performance at low energy consumption:** The high-performance granulator is characterised by its robust design in high-grade spheroidal graphite cast iron in GGG 40 quality, the positive connection of the stator knives as well as a solid and efficient cast rotor. "Besides a sharp cut, our patented cross-scissor-cut rotor guarantees a verifiably reduced energy consumption of as much as 20 per cent compared with conventional cutting techniques," underlines

Bernd Kneisl. Above all when high cutting performance is called for, the Rotoplex granulator – as for example the exhibited 50/80 Ro – shows its true strength. Dependent on the material and screen perforations, the granulator achieves throughput rates of up to 1000 kg/h.

**Intelligent machine design:** Over and above the high cutting power, the Rotoplex 50/80 Ro has numerous other design features which guarantee immediate benefits to users. Once the top section has been opened, the cutting chamber is easy to access. Which means that cleaning procedures as well as knife or screen exchange are quick and uncomplicated. This serves to prevent long periods of downtime. In addition, the special shaft bearing prevents penetration of the product into the bearing as well as the ingress of excess lubricant into the cutting chamber.

**wire and Tube 2020: Hall 14, Booth G09**

**Hosokawa Alpine Aktiengesellschaft**  
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*Zumbach will use the WIRE 2020 to showcase the most modern and advanced non-contact measuring technologies for dimensional measurements of all type of wire and cables*

# In-Line Measurement and Control Equipment for Highest Expectations



RAYEX® S XT

Exciting measuring solutions for cable extrusion lines, wire drawing and rolling applications will be displayed to present state-of-the-art measurement solutions and digitalisation capabilities.

The new RAYEX® S XT will be in the spotlight and present an easy and simple system to simultaneously measure wall thickness, eccentricity and diameter of cable jackets. Attractive data collection, process control and visualization capabilities combined with interface options for IoT applications make the RAYEX® S XT indispensable.

In addition, Zumbach will showcase the new wire preheater WST 2006FV that is designed to consistently pre-heat the wire conductor in extrusion lines for best product and process performance.

The wire preheater WST 2006FV has a very compact design, fitting into nearly every extrusion line and a custom-

er-friendly product setting routine to simplify entering new products.

To make the visit at the Zumbach booth even more exciting, many more systems with new features and functions are presented such as:

- Amazing software and interface solutions, fulfilling Industry 4.0 (IoT) requirements.
- New 1, 2 and 3 axis diameter gauges of high precision, well known ODAC® series for any wire and cable. New models with special beam geometry, fault detection function and high scan rate.
- The advanced ODEX® concentricity and diameter gauge for wire extrusion with new local display and integrated webserver capability.
- New LSV ProSpeed length & speed gauges for down to zero speed measurement.
- Advanced KW fault detectors with new VISU-Touch local display unit.
- RAYEX® D series: ZUMBACH's dynamic X-Ray measuring & control systems for CV lines, for wall thickness (3 layers), eccentricity and diameter/ovality measurement.
- PROFILEMASTER® series: High-end Non-contact Profile and Shape Measurement, Combining Laser and CCD Technology for shaped wire and any other profile.
- New Spark Tester DC type designed for space-restricted applications.



wire 2020: Hall 11, Booth D41

ZUMBACH Electronic AG  
PO Box, CH-2552 Orpund, Switzerland

# Perfect Waves – New Inspection System excels as Quality Checker of Corrugated Tubing

*With the new inline gauge ProfilControl 7 S CorrugatedTube developed by PIXARGUS it is now possible to inspect the complete wavy structure of corrugated tubing gaplessly. Newly developed algorithms enable, for the first time ever, the inspection of so far undetectable areas: not only the peaks and valleys, but also the transition areas in between. This inspection capability reduces out-of-spec production and will cut process costs*

Corrugated tubings have become a multi-talent in machines, instruments and vehicles thanks to their extraordinary flexibility, which is rendered by their wavy structure. The special structure that gives plastic tubing this unique flexibility used to be a very rough terrain for quality inspection systems, because of the challenge of having to deal with a product surface that alternates between plane and curved structures. A reliable surface inspection system must be able to automatically differentiate be-

*Even flaws too tiny for the human eye to discern are recognized by ProfilControl 7 S CorrugatedTube in a matter of seconds: holes, dents, blisters, nodes, scratches, fissures, for example, or poorly crimped joints are detected with 100 percent reliability*



*At TUBE 2020, measuring specialist PIXARGUS is going to unveil its new system for the inspection of corrugated and spiral tubing. ProfilControl 7 S CorrugatedTube sets a new standard as it is the first ever inspection system capable of performing high-accuracy inline quality control of flexible tubing*

tween the two and inspect them – continuously – according to different specific quality parameters. All this is now possible with the groundbreaking inspection system ProfilControl 7 S CorrugatedTube (PC7 S CorrugatedTube) developed by PIXARGUS.

## **An innovative sensor head and new algorithms assure total defect detection**

Using the successful technology of its proven PC7 S Tube inspection system, PIXARGUS has developed an entirely new sensor head for corrugated tubing. Eight high-performance cameras capture the surface structure of corrugated tubing from different angles, inspecting not only the peaks and valleys, but also the transition areas. Entirely new algorithmic processes were developed to enhance the software which is now able to detect the change from plane to wavy and vice versa by masking out specific surface structures. This makes even extremely small flaws visible. Holes, dents, blisters, nodes, scratches, fissures or poorly crimped joints will be detected with 100 percent reliability. As a result, out-of-spec production of corru-





Also extremely small flaws, like the above shown tiny dent in a protective tubing for electronic wiring in cars, may easily become safety-critical. ProfilControl 7 S CorrugatedTube guarantees 100-percent quality of tubes for automotive engineering and many other demanding applications



Don't waste your time searching! Flaws in the  $\mu$  range are hardly discernible by the human eye. Checking the quality of a product visually for longer than a few minutes is unreliable due to visual fatigue. It is now possible, for the first time ever, to reliably reduce out-of-spec production of corrugated tubing and cut production costs by means of an automated inspection process



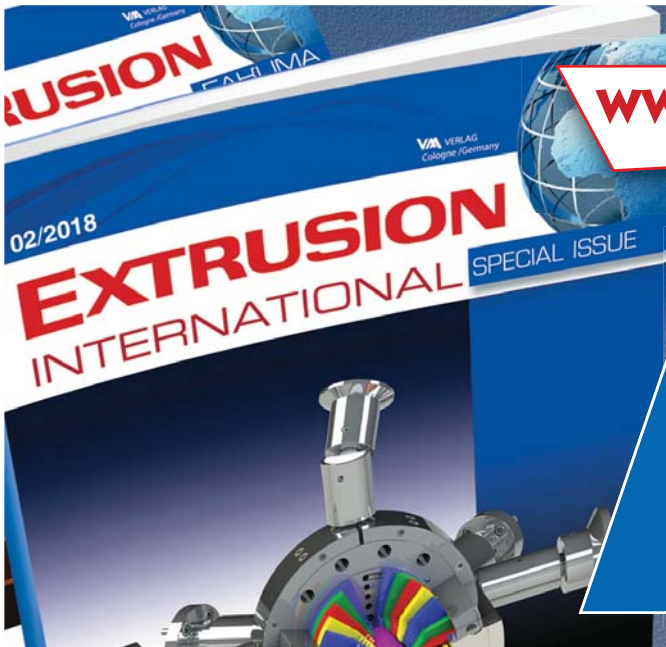
Entirely new algorithmic processes were developed for the surface inspection of corrugated tubing. Implemented in the inspection software, these algorithms now allow the recognition of the change from plane to wavy, and vice versa, and the masking out of different product structures

gated tubing can be immediately reduced – as well as the production costs.

**PC7 S CorrugatedTube for the inspection of corrugated and spiral tubing: Easily scalable and optimally networkable**  
PC7 S CorrugatedTube inspects – with highest precision - corrugated and spiral tubing of virtually any geometry, surface structures and colors. In its standard version it is designed for tubing of up to 30 mm. The modularly scalable system can be easily integrated into Industry 4.0 environments and comes with all common interfaces, such as OPC-UA, for example.

**TUBE 2020: Hall 6, Booth J09**

**PIXARGUS GmbH**  
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[www.smart-extrusion.com](http://www.smart-extrusion.com)

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*SIKORA is a manufacturer and global supplier of advanced measuring technology for the metals, hose and tube, wire and cable, optical fiber and plastics industries. At Tube in Düsseldorf the company presents a broad portfolio of innovative systems for efficient and sustainable quality control and process optimization of steel tubes, strips and plates at its booth*

*The RADAR SCAN 6000 is based on radar technology and delivers precise diameter measuring values independent of environment conditions, such as heat, dust and steam*

## Online Quality Control of Metal Pipes, Strips and Plates with Innovative Measuring Technologies –

# SIKORA at Tube 2020

With the RADAR SCAN 6000, SIKORA presents a system for non-contact inline measurement of the diameter and ovality of metal tubes and rods. The system is based on

*The PLANOWAVE 6000 M measures by means of radar technology the thickness of slabs, metal strips and plates*



progressive, high-resolution radar technology and records measuring values over 360° of the circumference of the product to micron accuracy. The measurement is carried out by radar transceivers simultaneously from several directions and is insensitive to heat, dust and steam. Typical measuring ranges of 300 to 2,500 mm are covered. The RADAR SCAN 6000 requires no coupling media and continuously delivers precise measuring values, which lead to a high reliability and availability for the user. Due to the slim design, the system can easily be integrated in the production process for hot as well as cold measurement. The technology measures regardless of the surface roughness in typical tube applications. The measuring values are clearly displayed graphically as well as numerically on the display of



the processor system ECOCONTROL 6000. Furthermore, extensive trend and statistical functions as well as comprehensive data logging are available. The RADAR SCAN 6000 contributes to the highest product quality, process optimization and cost saving during tube manufacturing.

Another highlight at the SIKORA booth is the PLANOWAVE 6000 M, a non-contact measuring system that is used for non-destructive thickness measurement of slabs, strips and plates. The system offers a precise thickness measurement independent of material, temperature and surface of the product. An external calibration on the material is not needed. The measurement of the product is also based on radar technology. Transceivers above and below the material continuously send and receive frequency modulated millimeter waves. The thickness – typically centerline thickness – of the product is precisely determined from the runtime difference. By using several

static or traversing transceivers, the cross-section profile of the product can be optionally determined. The PLANOWAVE M is designed for a typical measuring range of up to 500 mm. The system is used directly in the production line or at the end of the line for final quality control. It is also combined with the display and control system ECOCONTROL 6000 for the visualization of the measuring values, the display of trend and statistics as well as data logging.

Furthermore, SIKORA presents the LASER Series 2000 for non-contact and non-destructive measurement of the diameter and the ovality of metal tubes, wire rods and bars during production. The measuring method is based on the use of laser light sources and CCD sensors in combination with powerful signal processors. The outer diameter of the metal tube is determined by

*On the basis of laser technology, the LASER 2500 XY measures the diameter of wire rods, metal bars and tubes*



*The X-RAY 6000 PRO is used, amongst others, for wall thickness measurement of light metal alloy tubes as well as the layer thickness of the plastic coating on steel tubes*

means of an intelligent diffraction analysis. Extremely short exposure times guarantee a high accuracy of the single value at all line speeds. The LASER Series 2000 includes gauge heads for different product diameters from 0.05 to 500 mm. They are free of wearing parts and keep their precision during the entire operating time with no calibration or maintenance work necessary. The measuring values are clearly displayed on the monitor of a processor system of the ECOCONTROL series.

SIKORA also presents the LASER Series 6000. These devices complement SIKORA's product portfolio of intelligent diameter gauges by three high-end models. Up to 5,000 measurements per second and axis, all with extremely high single value precision, enable an optimum line control and provide reliable statistical data. The LASER Series 6000 gauge heads measure the diameter of tubes, wire rods and bars with a higher precision and repeatability as well as a wide range of interfaces. Three gauge head models cover product diameters from 0.2 to 78 mm. The measuring values are clearly visualized and the operation is done intuitively at the monitor of the ECOCONTROL systems.

At Tube 2020, SIKORA continues to showcase its experience for quality control of metal tubes on the basis of X-ray technology. For metal tubes made of aluminum as well as of certain light metal alloys, the diameter as well as the wall thickness are precisely measured. Moreover, the X-RAY 6000 PRO is predestined for the reliable measurement of the plastic coating on steel tubes. Typically, X-ray measuring systems are used for plastic coated steel tubes with a diameter of up to 200 mm. Precise measuring values are immediately retrievable with the online measurement. The data is visualized at the monitor of the processor system ECOCONTROL 6000 and enables the user to intervene into the process if needed. Hence, SIKORA's measuring systems are essential components for the assurance of the highest quality and an efficient process during production.

**Tube 2020: Hall 6, Booth G04**

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# Increasingly electrified

*According to the German Association of the Automotive Industry (VDA), electric vehicles are suitable for the market. A “young, still small market with high dynamics” has developed around e-cars - even though vehicles with combustion engine technology currently still dominate the global automotive market. Suppliers of the wire and cable industry are already picking up speed and see e-mobility as an opportunity*



*Electric mobility is coming faster than many expect (Photo: Pixabay)*

“The market potential is enormous,” Wafios emphasises. “Accordingly, the forecasts are positive.” For this reason, e-mobility became the focus of the company’s attention already some years ago. “Technical triggers were enquiries from the automotive sector, both on the OEM side, supplier level and in the equipment sector about three

years ago,” explains the supplier of machines for bending wire and tubes. E-mobility picked up speed.

However, the industry is still “clear and concentrated on a few market participants”, explains Wafios. According to AlixPartners Global Automotive Outlook 2019, the global market share of electric drive units in terms of vehicles sold amounted to 2.7 per cent in 2018. A share that is clearly expandable, which is shown by the growth rate of the e-drive of more than 65 per cent. Thus, according to Outlook 2019, the market is speeding ahead “in the irreversible market run-up”.

*Audi Hungaria starts series production of electric motors (Photo: AUDI AG)*



## **Faster than expected**

According to the VDA, electric mobility is coming faster than many expect. One reason is, for example, the tightening of regulations and the improved incentive systems for electric mobility in order to reduce CO<sub>2</sub> emissions. For example, there will be no new registrations for conventional drives in Norway from 2025 - the sale of electric cars will be promoted with massive tax incentives. The Netherlands, Ireland and Israel want to use only emissions-free vehicles from 2030. A sales ban on combustion engines is planned from 2040 in Great Britain and France. In the USA some states, such as California, plan to permit only emissions-free cars from 2040. In order to get their act together, suppliers have to target these figures.

Globally, a drastic increase in hybrids and electric vehicles can be expected between 2020 and 2025. The VDA predicts that "by 2030 a production share of electrified vehicles of 60 per cent or more worldwide is likely". China will be a pioneer here – every third vehicle could be fully electric by 2030. In Western Europe, the share could rise to 25 per cent due to stricter regulations and driving bans. According to the association, a breakthrough in Africa and South America is not to be expected so soon. For Japan, Korea and North America, a share of hybrid vehicles of around 80 per cent would be conceivable. The car world is electrified – a realistic view.

### Huge investments

Car manufacturers and automotive suppliers must therefore make massive investments: The AlixPartners Global Automotive Outlook 2010 reports that at least 202 billion euros will have to be spent globally over the next five years to master the technological change to the electric drive and the development, production and marketing of up to 300 planned new e-vehicles. "The level of investment is still out of all proportion to demand," says Dr Elmar Kades, Global Co-Lead Automotive and Managing Director at AlixPartners. At the same time, the current and expected weak sales development for the next few years will increase the short-term pressure on the margins and cash flows of the suppliers, Kades continued. Weak sales and massive investments therefore coincide.

Even though the situation is challenging, the wire and cable industry remains optimistic. "Electrically powered vehicles promise higher sales for our company because more or higher quality cables are needed," explains Leoni. Hybrid vehicles, in particular, which contain both an electric and a combustion engine, require a higher product share from the company.

High-quality cables are required in various areas of the electric car: In the charging cable from the charging station to the vehicle system and from the charging connection to the battery. Lines finally transport the electricity via the inverter to the electric motor. The internal wiring supplies other high-voltage components, such as air-conditioning compressors or electrical heating, with energy. Electrifying outlook.

### Battery cabling and connector systems

Leoni is focusing, in particular, on the high-voltage battery as an energy storage device for electric vehicles and plug-in hybrids. The company concentrates primarily on data and power distribution within high-voltage batteries. "We assume that the HV battery in future vehicles will contain parts of the previously exposed high-voltage cable harness due to its large-area arrangement." The aim is to offer customers system solutions for battery cabling from a single source. Together with its partner Diehl, the company is working on offering complete solutions. Already established products of both companies in areas



*A look at the powertrain of the BMW 225xe. The electric motor of the plug-in hybrid vehicle BMW 225xe iPerformance won the Bavarian State Prize for E-Mobility (Photo: BMW Group)*

such as cabling, connector systems and cell contacting would be combined to form a complete package. This means that sustainable strategies are needed.

### Products and processes are changing

Changing times require flexible suppliers – the right curve position is crucial. You must bear in mind that the exhaust gas and fuel system, the combustion engine and the low-voltage vehicle electrical system are not required for the less complex electric drive. Instead, they must adapt to electric motors, cooling systems for electronics and batteries, chargers, a high-voltage electrical system and a PTC heater – components that sometimes require high-performance wires and cables to prevent vehicles from stuttering.

The changes associated with the switch from combustion to electric vehicle technology are therefore fundamental and affect products and processes. "Competencies such as blow moulding, pipe extrusion and machining technology are also becoming less important, while processes such as winding processes and forming techniques for parts made of aluminium and magnesium are gaining in importance," explains the VDA. In order to continue on the road to success, the wire and cable industry must therefore flexibly steer in the right direction. Then it will head full speed towards high profits.

Innovative technologies will be presented at wire and Tube from

30 March to 3 April 2020 at Düsseldorf Fairgrounds. More information:

■ Messe Düsseldorf GmbH  
[www.wire-tradefair.com](http://www.wire-tradefair.com)  
[www.Tube-tradefair.com](http://www.Tube-tradefair.com)

*With a selection of dosing and conveying devices, motan-colortronic shows examples of system solutions for the cable and pipe extrusion. The focus is on the loss-in-weight dosing device SPECTROPLUS and the gravimetric material loader METROFLOW*

*SPECTROPLUS dosing and mixing system with hopper loaders – here a modular design that is typical for film extrusion application*



# With Dosing and Conveying Devices at the wire and Tube Show

## **SPECTROPLUS – One dosing system for all applications in extrusion and compounding**

The new synchronous dosing and mixing system SPECTROPLUS was developed for extrusion and compound-

*METROFLOW – gravimetric material loader for precise material throughput control (Photos: motan group)*



ing. With their modular design it is suitable for a large range of different materials – from powders, granulates and regrinds to liquids and flakes. Additionally, the synchronous dosing unit can be augmented with the SPECTROFLEX dosing modules, which are also available as gravimetric or volumetric versions.

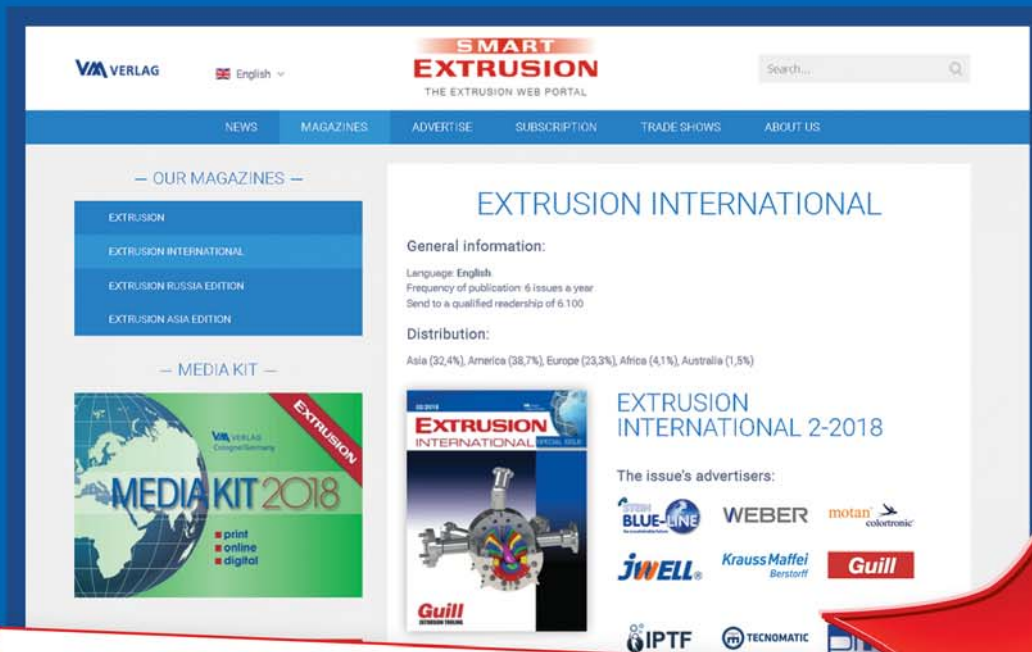
The SPECTROPLUS is controlled with the brand new SPECTRONet control, which can control both the volumetric and gravimetric SPECTROPLUS dosing modules as well as external dosing units.

## **METROFLOW – gravimetric vacuum conveying for precise material throughput control**

These gravimetric material loaders are used in pneumatic conveying systems, for example to convey material from a silo to a drying bin or to the processing machine. With their extremely precise weighing technology, the METROFLOW loaders are particularly suited for monitoring material consumption in real time, which means that the units are predestined for use in an Industry 4.0 environment.

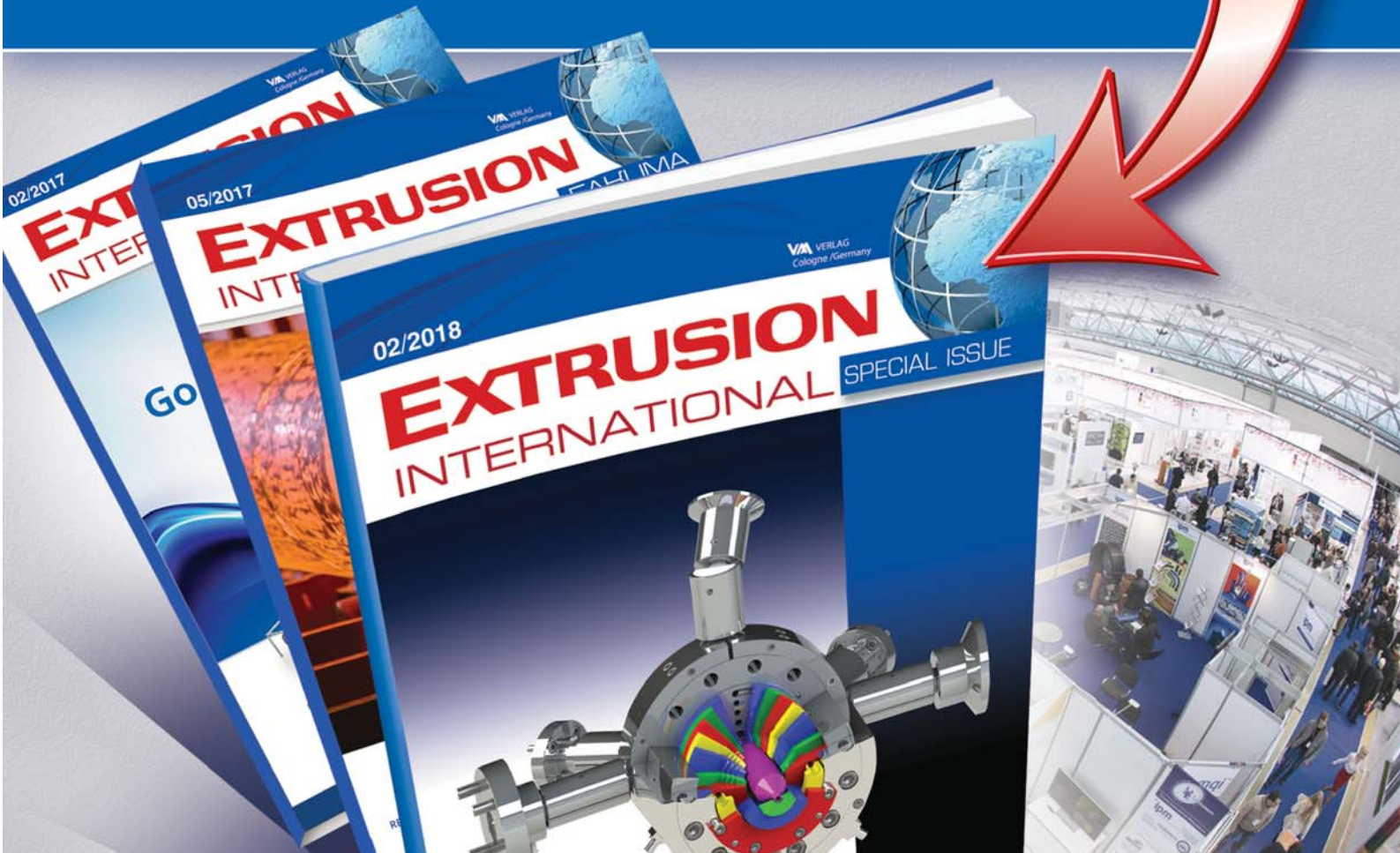
**wire and Tube 2020: Hall 14, Stand 14G3**

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