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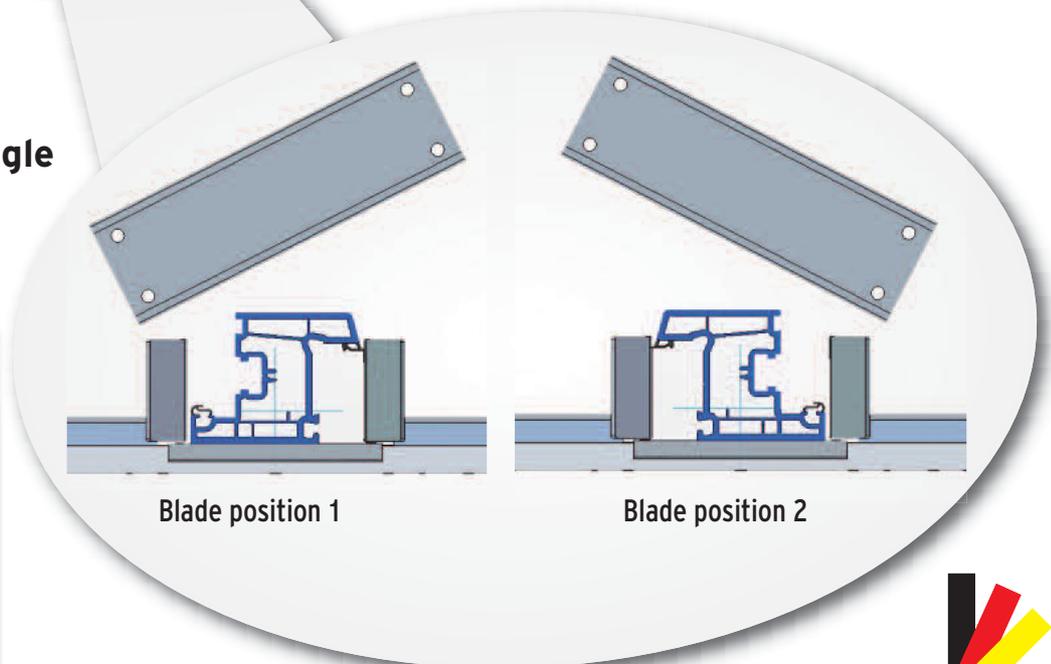
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PTW-200 changeable cutting angle

Cutting Unit



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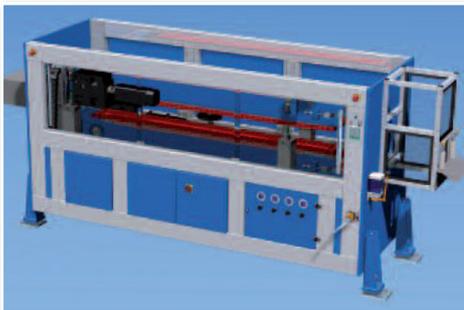
EQUIPMENT FOR EXTRUSION



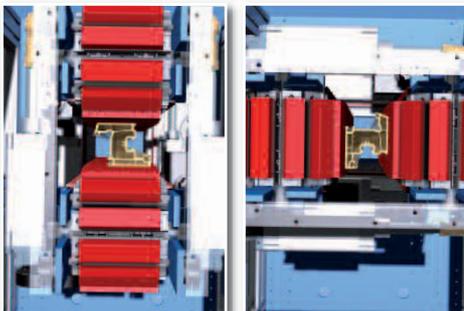
FOR PROFILE EXTRUSION LINES



Calibration table KTS 01,
rear



Caterpillar
Haul off



Haul off
rotating 90°



PRO 63
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FOR SHEET EXTRUSION LINES



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The world's largest façade made of single layer ETFE film is gleaming in the club colors of the Mexican first division club, FC Puebla. The extravagant façade made of more than 30,000 square meters of film was built in a very sophisticated design. The film was extruded from the high-performance material 3M Dyneon Fluoroplastic ETFE.

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Biggest CHINAPLAS welcomed 180,701 visitors at 340,000 sq.m. exhibition space marking a new milestone in its history.

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The University of Rosenheim, Germany, has built a system – a pilot plant unique across the whole of Germany – for developing climate and resource-friendly procedures and materials for automotive applications, timber construction and furniture manufacture as well as a wide range of other applications.

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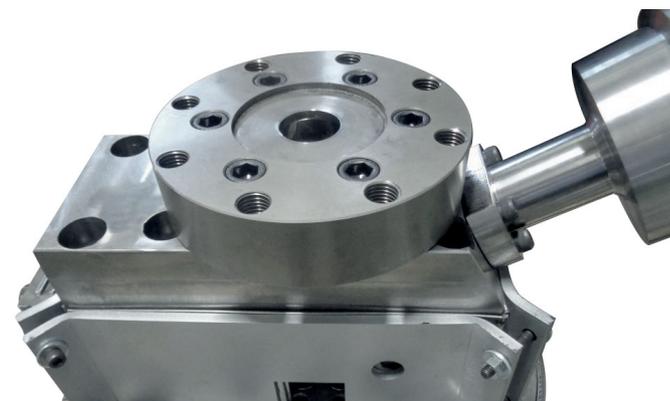


China's extensive portfolio offers processors the right line for every pipe application – from small and medium standard pipes to more complex multi-layer or large diameter pipes. High-quality extrusion equipment and services are the core of battenfeld-cincinnati's products, which could be seen at Chinaplas 2018 in Shanghai.

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Multilayer pipe heads are established in the market since many years. Quite often pipe head manufacturers are asked about flexibility in using the head for other layer structures and unfortunately the answer is in most of the cases that the particular head is not designed for this kind of flexibility.

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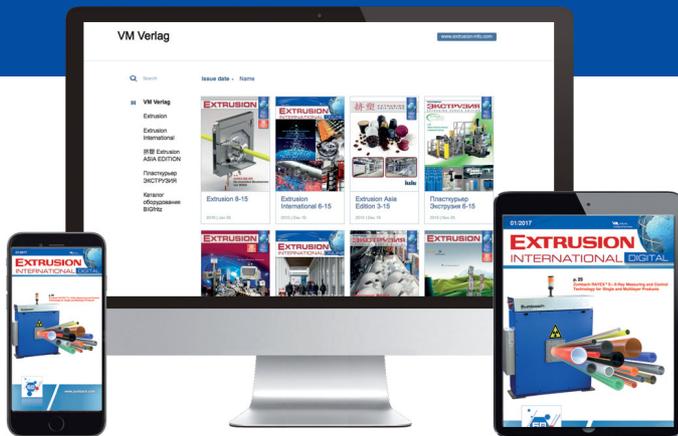


EREMA offers a fully automatic processing system for edge trim with the proven INTAREMA® K. Sales have increased by 100 per cent compared to the previous financial year. More and more producers are reducing their material costs by recycling clean production waste.

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EDITORS

Dr. Yury Kravets (Editor-in-chief)
Tel. +49 2233 979 2976
y.kravets@vm-verlag.com

Bettina Jopp-Witt
Tel. +49 221 546 1539
redaktion@vm-verlag.com

Alla Kravets
Tel. +49 2233 949 8793
a.kravets@vm-verlag.com

ADVERTISING SALES

Martina Lerner
Tel.:+49 6226 971515
lerner-media@t-online.de

ADMINISTRATION

Alla Kravets
Tel. +49 2233 949 8793
a.kravets@vm-verlag.com

PRINTING

h-mailconcept e.K.
directmarketing
Venloer Str. 1271, Cologne, Germany

SALES REPRESENTATIVES

Quaini Pubblicita (Milano IT)
Tel. +39 02 39216180
grquaini@tin.it

Worldwide Services Co., Ltd.,
(TAIWAN)
Tel. +886-4-2325-1784
global@acw.com.tw

Tokyo PR Inc. (Japan)
Tel. +81 (3) 3273-2731
extrusion@tokyopr.co.jp

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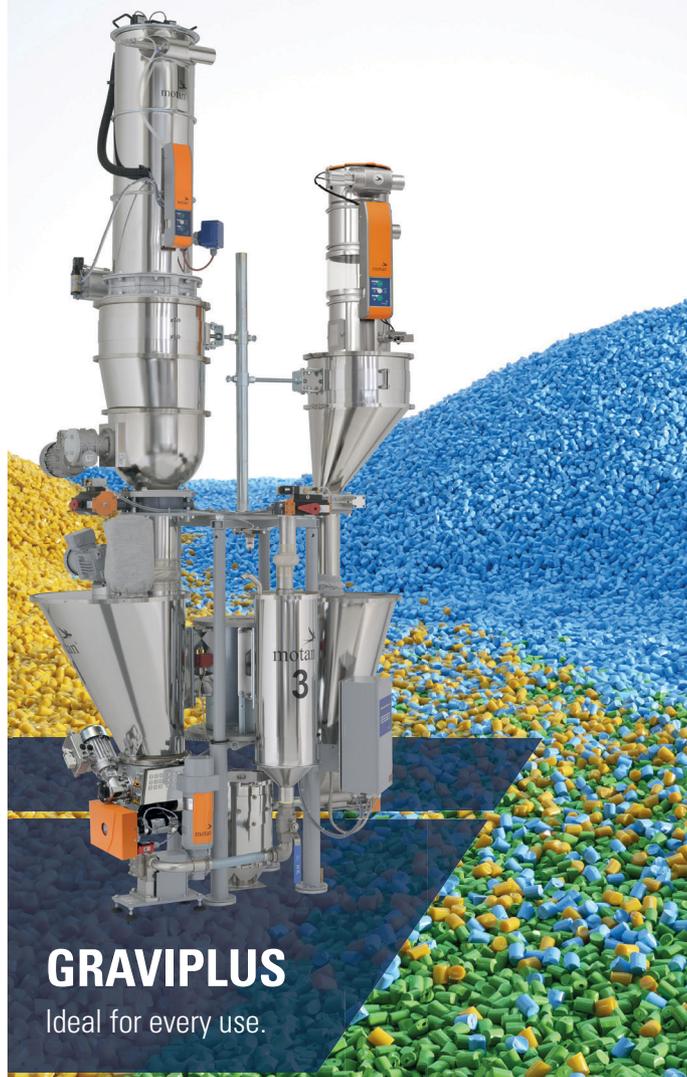
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PETnology/tecPET GmbH
www.petnologyamericas.com

14th China International Recycled Polyester Conference & Exhibition

12. - 14. 09. 2018
Shaoxing / P.R. China
www.polyester-technology.com

Colombia Plast 2018

24. - 28. 09. 2018
Bogotá / Colombia
Acoplasticos
www.colombiaplast.org

Plastic Packaging and the EU Plastics Strategy

25. 09. 2018
Brussels / Belgium
European Plastics Converters
www.plasticsconverters.eu

Powtech India

11. - 13. 10. 2018
Mumbai / India
NuernbergMesse India Pvt. Ltd.
powtechindia.com

Fakuma 2018

16. - 20. 10. 2018
Friedrichshafen / Germany
P. E. Schall GmbH & Co. KG
www.fakuma-messe.de

SOLIDS Dortmund

07. - 08. 11. 2018
Dortmund / Germany
Easyfairs Deutschland GmbH
www.easyfairs.com/schuettgut-de

Expo Plásticos

07. - 09. 11. 2018
Guadalajara / Mexico
Trade Show Factory
<http://expoplasticos.com.mx/2018/en/>

Fakuma: Intensive Recycling and "Green" Materials Typify the Plastics Market



■ The entire processing sequence is wrapped up in ecologically responsible handling of plastics. What happens today with PE, PS, ABS or PET and CFRP, when it reaches the end of its initial service life? Experts from all over the world will find solutions to this issue at the Fakuma international trade fair for plastics processing in Friedrichshafen from the 16th through the 20th of October, 2018.

In particular where plastics processing is involved, recycling is in great demand. Even high-tech materials like CFRP are being recycled more and more frequently and re-used for new purposes. The prevention of so-called "downcycling" by means of modern processes and recycling of materials sorted according to type is important in this respect. "The plastics industry has been becoming more and more sustainable for a number of years already", says Fakuma project manager Annemarie Schur. This not only applies to the recycling of materials, but rather to energy-saving and thus more economical manufacturing processes, energy-efficient machines and biodegradable plastics as well. And the sustainable alternatives are in no way inferior to their conventional predecessors with regard to durability, processability and weight.

More and more products are being manufactured today with the help of plastics and composites. Simultaneously rising demand for better and better performance, as well as top quality, necessitate an innovative spirit and new developments. In addition to new "green" products, Fakuma will also present all of the components and systems which are required for conventional as well as innovative processes. Whether injection moulding, extrusion, thermoforming, foaming or 3D printing is involved – raw materials producers, machine builders and manufacturers of precision parts will present all they have to offer in the way of innovation for the entire process sequence and value chain in Friedrichshafen. "For many exhibitors, Fakuma is a highly practical platform for unveiling their innovations to the public for the first time", adds Annemarie Schur.

In the field of plastics too, processing sequences are being automated to an ever greater extent. Demand for Industry 4.0-compatible systems and components which permit inline production steps and quality control is growing rapidly. Where handling is supported by modern robotics and software provides target-versus-actual comparisons in real-time, multi-variant production is becoming more and more economical in the plastics industry. Beyond this, plastics processing companies are now becoming more and more globally aligned. A large variety of variants, smaller manufacturing lots, make-to-order production and shorter product lifecycles are presenting manufacturers of plastic parts all over the world with tremendous challenges. This is demonstrated by the fact that people from all over the world are fascinated by the trade fair for plastics processing. Expert visitors, specialists and decision-makers from more than 120 countries came to the last Fakuma in 2017.

► www.Fakuma-Messe.de

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Activities in North America strengthened

■ The Reifenhäuser Group presented an initial overview of its upcoming strategic plans at the NPE2018. “We are expanding and have a lot on the agenda,” says Bernd Reifenhäuser, CEO of the Reifenhäuser Group. “Our showing at this year’s NPE was bigger than ever before: Reifenhäuser presented its full product portfolio at a booth that’s over 400 square meters in size, and had more technical and sales staff present.” This expanded presence is a sign of things to come: “We will significantly strengthen our activities in North America, ramping up sales as well as service,” adds Reifenhäuser. At NPE show the company presented its new business unit Reifenhäuser Extrusion Systems.

The Group paved the way for this development in January by acquiring EDS, an international supplier of high-end extrusion tools and special dies. “When we acquired EDS, we acquired significant design expertise in dies and film tools. Thanks to the tailor-made EDS product range, our manufacturing expertise, and our global sales structures, we can now serve our customers in an even more targeted and efficient way,” says Reifenhäuser. The Reifenhäuser Group has a strong foothold as machine builder, addressed by the Reifenhäuser Blown Film, Reifenhäuser Cast Sheet Coating, and Reifenhäuser Reicofil business units. By adding EDS to the Group, the family business took its competencies one step further; Reifenhäuser is now developing the components area into its own business unit.

In line with this, the machine builder Reifenhäuser presented itself as a component supplier for the first time at this year’s NPE. The new Reifenhäuser Extrusion Systems business unit comprises the activities of Reiloy, of the extruder unit, EDS, and Enka Techni-

ca. Extrusion Systems develops and manufactures parts and components that convey and shape polymer such as screws, barrels, film tools, extruders, screen changers, spunbond fabric tools, and spinnerets. Uwe Gaedike, managing director of the new business unit says: “The new Reifenhäuser Extrusion Systems business unit operates alongside our established extrusion machinery business unit. Reifenhäuser Extrusion Systems is well-positioned to optimally serve customers and relevant markets with extrusion components. Thanks to our global presence, customers benefit worldwide: They can expect nothing but state-of-the-art technology, the best quality, outstanding efficiency and fast delivery.” In the past, Reifenhäuser only supplied extruders and dies for its own lines; however, Reifenhäuser Extrusion Systems does not restrict its product portfolio to customers for the machine business units.

“It’s important for us to speak the same language as our customers,” says Uwe Gaedike. Direct service and short delivery times are crucial. For this reason, Reifenhäuser is ramping up capacities at its site in Maize, Kansas, where it is expanding its service business for dies. “We plan to start reworking film dies and spinnerets in North America this year. In order to make that possible, we’re investing in machines and devices, including our own surface plating,” says Gaedike. He adds: “Another step might be to produce and offer complete assembled extruders or flat dies in the U.S. Reifenhäuser Extrusion Systems will also target growth in Asia.”

► Reifenhäuser Gruppe
www.reifenhäuser.com

New Subsidiary in Thailand

■ REPI, a world leader in manufacturing of liquid colours and additives for plastics, is continuing its global expansion adding a new company in Thailand. This represents a natural step forward of the 20-year partnership with one of REPI’s historical distributors in the region. Now the Group is ready to start a direct business to strengthen its potential in Asia.



REPI Inc. new subsidiary in Thailand

REPI THAI CO. LTD will take over the existing business in the ASEAN region both in the Polyurethanes and in the Thermoplastics business units with ambitious targets of growth in the coming years. This operation is another promising step for REPI to expand market presence in Asia and Bangkok is a strategic location to serve the surrounding countries. Thanks to the direct presence, it will be possible to offer better service and further benefits to customers. The new unit will provide commercial support and technical service to all clients in the region as well as fast colour-development capabilities, which are crucial in order to serve customers just-in-time.

REPI Group is a family-owned concern, founded in 1973. From the headquarters in North Italy is being growing over the decades opening facilities in the US, Russia, UK, Thailand and establishing commercial relationships worldwide. The Group’s activity focuses on two main Business Units, Polyurethanes and Thermoplastics, which offer products and services to industries with different requirements and metrics.

► Repi S.p.A.
www.repi.com, repi.thailand@repi.com

First VAREX II Nine-Layer Extrusion Line conquers Colombia

■ The Plastilene Group from Latin America has recently been serving the demanding market for barrier and protective films with a VAREX II nine-layer extrusion line measuring 2,600 in width from Windmüller & Hölscher.

The Plastilene Group is one of the leading manufacturers of flexible packaging in the Latin American market. With production facilities in Colombia, Guatemala, and Ecuador, the

group employs more than 800 people and has total revenues estimated at USD 150 million. Ever since 2005, this Latin American group has relied on technology and expertise from German machine manufacturer, Windmüller & Hölscher, for its production operations. The Plastilene Group has put a total of 19 W&H lines into operation in the thirteen years of this cooperation.

The group's latest investment, a VAREX II nine-layer blown film line, has now been commissioned at Plastilene subsidiary Novalene, based close to Bogotá in Colombia. From there, Novalene principally supplies markets with films for high-tech barrier structures and technical films. "We have high expectations of our machines, as we only produce excellent products designed to set standards internationally," said Gabriel Jaramillo, Technical Director of the Plastilene Group. "The VAREX II is the first W&H nine-layer extrusion line in all of Latin America measuring 2,600 mm in width. This is the ideal film width for the markets we serve."

The VAREX II has been installed in combination with a W&H MIRAFLEX AM8 flexographic printing press and a CORE-MATIC non-stop roll handling system for the printing press rewind. The entire installation has been specifically adapted to Novalene's needs and is highly specialized for the manufacture and printing of films for the food industry.

VAREX II nine-layer extrusion line at Novalene in Colombia



■ WINDMÜLLER & HÖLSCHER KG
www.wuh-group.com

ahead – New Digital Customer Magazine

■ The KraussMaffei Group has gone online with its customer magazine "ahead". Until now, the ahead magazine of the three brands KraussMaffei, KraussMaffei Berstorff and Netstal has been available only as a printed version. Now, the elaborately designed magazine will be published digitally – as a multi-media online portal, as well as an app for Android and iOS.

The new online portal provides interesting insights into the world of injection molding, reaction process machinery and extrusion in the KraussMaffei Group. Current news, reports and specialist articles complement the portal, which also includes photo galleries, live streams, videos and animations. The new online portal is available in German and English, and can be found on the following links:

<https://ahead.kraussmaffei.com>

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<https://ahead.netstal.com>



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■ KraussMaffei Group GmbH
www.kraussmaffeigroup.com

New Agent

■ At the beginning of March 2018, global extrusion specialist battenfeld-cincinnati signed an agency agreement with Fleming, Australia. Fleming will support battenfeld-cincinnati's customers in Australia, New Zealand, Fiji and New Caledonia in the areas of pipe, profile, PVC sheet and WPC/NFC extrusion.

"Fleming have made a name for themselves in the region for quality and customer service in extrusion periphery equipment. They have extensive knowledge of the industry and the needs of our customers and we look forward to a good cooperation," says Wolfgang Sedlacek, Director Sales Asia, Australia, Oceania at battenfeld-cincinnati.

"This agreement solidifies our commitment and focus within the Australian and New Zealand extrusion sector, and is a strategic step towards business growth. We look forward to working together!" adds Tim Fleming, Managing Director at Fleming.



Tim Fleming and Thomas Ringheim from Fleming on a large diameter pipe cutting unit from battenfeld-cincinnati

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Innovating2gether: New Customer Innovation and Application Center in Italy

■ The commissioning of new machinery and mechanical equipment constitutes a resource intensive process with heavy investments and long-term commitments. Producers and converters thus need to ensure a seamless integration of their new slitting and winding machines into their machine park and production line. GOEBEL IMS, one of the global leaders in innovative slitting and winding solutions with more than 165 years of expertise, is now substantially expanding its service portfolio with the introduction of MyLab@GOEBEL IMS.

MyLab, the new 800 sqm customer innovation and application center, takes customer service to the next level. "Our focus is not to sell machines but to support our customers during every step of the process: from the project idea, the machine outline and specification, to the development and the final implementation", states Luca Moreschi.

At the heart of MyLab are machine demonstrations. Producers and converters can experience extensive demand-oriented performance, endurance and versatility tests of the latest machines and equipment depending on their individual informational needs and production parameters. The machine program that is at customer's disposal at MyLab includes slitting and winding solutions for foil, paper, aseptic packaging, cigarette papers and alufoil. Thus, MyLab clients can not only discover solutions for their specific industries, but also the whole range of working widths.

The operated slitter rewinders at MyLab change regularly in order to cater to clients' needs and to display the full range of GOEBEL IMS' solutions. Among the currently exhibited slitter rewinders are the RAPID D1, a high-precision slitter rewriter for paper, board and other materials, and the XTRASLIT 2, the cutting-edge slitting and winding solution for converting film and paper. In addition, customers can experience the multi-purpose slitter rewriter for thin and delicate materials RU 1 as well as the T 2.

At MyLab, a team of experienced engineers and technicians identifies cooperatively with the customer his individual needs and



specifications. Extensive machine presentations and tests are carried out to find the most suitable machine for the application. A 360-degree customization according to the material and production requirements is then outlined including customer-specific solutions for slitting systems, loading and unloading units, robotics, auxiliary equipment as well as electronic and mechanical components and the integration into product data systems up to a digital factory. Once the machine design is determined, machine and system tests are carried out analyzing both machine performance and material output with cutting-edge tools and technology.

During the manufacturing process of the customized slitting and winding solution, GOEBEL IMS' customers receive access to MyLab which allows non-stop monitoring of the progress in the production.

Practical trainings and seminars, around on-the-job-training, maintenance or retrofit, taking place in GOEBEL IMS' modern meeting space, round off the MyLab services. The MyLab Academy is open to external participants, among others employees of our customers, and offers joint seminars with customers, suppliers and GOEBEL IMS representatives.

■ GOEBEL IMS
www.goebel-ims.com

Largest Show in History for NPE2018

■ The Plastics Industry Association (PLASTICS) concluded NPE2018: This show has been the largest in history, with more than 2,180 exhibiting companies showcasing innovations in plastics in more than 1.2 million square feet of exhibit space on the tradeshow floor. But metrics aside, there were strategic additions to the show that made it feel bigger and better than ever.

As attendees walked the show halls lined with large TV screens, they saw interviews with people who make plastics safer, bet-

ter and stronger on NPE Network. And if in the hustle and bustle attendees missed those videos, they can watch them all on the plane ride home here. The Show Daily included recaps of the machines, product launches, expansion announcements and more that came out of the show each day.

And there was a local component, too, engaging high school students who may not otherwise have considered a career in plastics. Today, more than 125 students from Orange County

Public Schools came to NPE® to participate in the new student day program. Their day included a morning briefing with plastics industry executives followed by a tour of the NPE® trade show floor.

On and off the trade show floor, there were new programming additions to attract broader end-market attendees. New elements of this year’s show included 12 technology zones – five of which were new – and nine education programs, including the co-location of PLASTICS-produced Relfocus Sustainability & Recycling Summit and the Plastics Leadership Summit. The emphasis continued to be on producing a sustainable show with a goal of 100 percent waste diversion.

“We worked diligently to continue the tradition of innovation that NPE® is known for with features like our 80,000 square foot Bottle Zone and our expanded education programming,” said PLASTICS Vice President of Trade Shows and Marketing Susan Kryz. “Over the past five days, we’ve been on the ground and hearing directly from the many members and attendees who we’ve worked with tirelessly to put on a show of this magnitude. Attendees have been really impressed with NPE® this year.”

The triennial trade show’s theme was “We’ve got it covered.”



► The Plastics Industry Association (PLASTICS) plasticsindustry.org

Post-consumer PE Film Recycling – also in South Africa now

■ The first large-scale plant for the recycling of heavily contaminated PE film waste has now started running in Germiston South, near Johannesburg.

Delivered by HERBOLD MECKESHEIM, the plant can process up to 8,000 tons per year of film, used big bags and similar waste. The waste coming in bales are pre-sorted, shredded and foreign bodies are separated by means of a pre-washing unit in which also a first washing takes place.

Afterwards, further contaminations are dissolved in a wet granulator under intensive friction; a subsequent friction washer separates the dirty water from the product.

A hydro cyclone separates foreign plastics and specifically heavy contaminations from the target fraction. This separation process has a particularly high separation effect and ensures the high quality of the produced film flakes.



Charles Müller (Managing Director) and Deon Swart (Technical Manager) in front of the HERBOLD plant



Final product: cleaned film flakes

In two drying steps, centrifugal dryer and hot air dryer, the product reaches a residual humidity which is suitable for the further material processing to pellets in a downstream extruder. With this recycled material high quality film can be produced.

► HERBOLD MECKESHEIM GmbH www.herbold.com

Record Year for the German Plastics and Rubber Machinery Manufacturers

■ The German plastics and rubber machinery manufacturers rush from one record to the next. They could increase their sales by another five per cent in 2017. "The past year has been in line with the positive development since 2010," Ulrich Reifenhäuser, Chairman of the VDMA Plastics and Rubber Machinery Association, is pleased. "I am all the happier that we could surpass the original optimistic forecast of four per cent with this increase," he adds. Since the economic crisis, which had also affected the plastics and rubber machinery manufacturers, this has been the eighth year of growth in a row. The current boom has been lasting unusually long. The pole position of the most important German sales markets was again occupied by the USA in 2017. This time, the threshold of 800 million euros could be passed. The value of plastics and rubber machinery, which was delivered from Germany to the US, added up to 847 million euros. This accounts for a plus of 10.1 per cent compared to the previous year.

The most important total market, however, is China. Besides exports of 717 million euros (+14.3 per cent compared to 2016), about another half billion euros could be added, which were produced by the plastics and rubber machinery manufacturers in China mainly for the local market.

Italy made a big leap from rank six to rank four. German plastics and rubber machinery in the amount of 250 million euros were delivered to Italy in 2017, which equals an increase of 32.1 per cent. Particularly the goals of the "Industry 4.0" plan of the Italian government become noticeable: investments in industrial goods should be stimulated and the Italian processors should increasingly renew

their machine parks with high-tech products "Made in Germany".

After deliveries of plastics and rubber machinery to Russia had been decreasing for a long time, there was a positive turnaround last year. The high growth rate of German exports in the amount of 34.1 per cent mainly results from the stimulation of the local packaging sector and does not mirror a nationwide recovery of the market. In total, 114 million euros of German plastics and rubber machinery could be exported to Russia.

A high export growth can also be announced for the Brazilian market where the longest and strongest recession has come to an end. There, exports grew by 35.4 per cent to 75 million euros. However, after the long downturn, Brazil will need more time to fully recover. Investments, for example, only pick up slowly, which is mainly due to the fact that there is a lot of uncertainty in the market ahead of this year's presidential election.

There is no end of the growth in sight for 2018. Due to the companies' full order books, the VDMA Plastics and Rubber Machinery Association expects a growth of three per cent. "This should, however, not hide the fact that the climate is starting to change," warns Thorsten Kühmann, Managing Director of VDMA Plastics and Rubber Machinery. "We are currently in a very long boom phase which is already exceeding its usual length. Due to this, the delivery times of the machinery manufacturers as well as those of the suppliers are unusually long. Moreover, the companies have massive problems to find qualified skilled workers," according to Kühmann.

German Exports TOP 10 Plastics and Rubber Machinery

	2017 (m €)	2017 / 2016 Change in %	2017 Ranking
Export	5,345	7.7	
USA	847	10.1	1
China	717	14.3	2
Mexico	269	4.5	3
Italy	250	32.1	4
Poland	233	9.7	5
France	191	-3.2	6
Czech Republic	175	7.2	7
India	172	-3.7	8
Great Britain	145	2.3	9
Spain	139	2.1	10

Core Machinery

Source: National Statistical Office



VDMA Kunststoff- und Gummimaschinen
plastics.vdma.org

New Name which signs a New Development Phase

■ IMS Deltamatic S.p.A., headquartered in Calcinate (BG), one of the world’s leading companies in designing, manufacturing and trading of high technology automatic special machineries for converting, packaging and automotive industries, announces the change of its corporate name into IMS TECHNOLOGIES S.p.A., with immediate effect.

The new brand identity reflects the strategy of the Group aiming to develop its three lines of business: converting, automotive and packaging. IMS TECHNOLOGIES is now controlled by Coeclerici S.p.A., which acquired the remaining 33% stake at the end of December 2017, one year after the acquisition of 67%.

The top management, supported by the new shareholder, has set up new strategic lines as part of the “2019 Strategy” plan, focused on the development of important synergies between the various market segments and the fulfillment of economies of scale, to ensure a solid growth in business in the medium-long term.

“2019 Strategy” both ensures the continuity of the previous development plan, thanks to which the Group has already achieved significant results over the past few years, and forecasts further important targets for business growth in the two-year period 2018-2019. The focus will be especially on the continuation of a profitable growth with a further development through acquisitions and organic growth, with the aim to strengthen its market position in the coming years.

All the companies and brands that are part of IMS TECHNOLOGIES (GOEBEL IMS, Rotomac, Deltamould and Kasper) will implement the group’s new corporate identity strategy, continuing to work through their specific business, marketing and product initiatives, which contribute to achieve global performance.

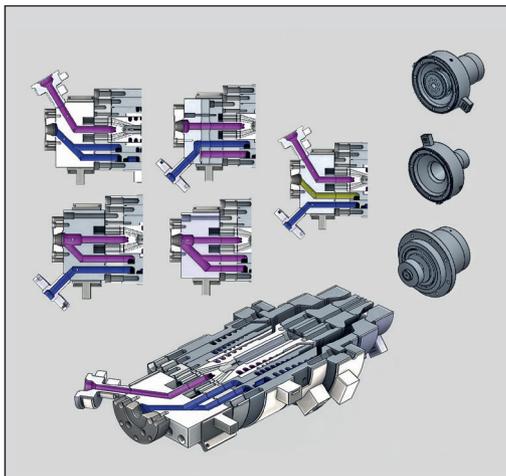


Daniele Vaglietti, CEO of IMS TECHNOLOGIES, Paolo Clerici, Chairman, and Teresio Gigi Gaudio, Vice President, will implement the new strategic plan relying on a team of highly qualified professionals.

“Thanks to our new business and organizational model, we will benefit from a competitive advantage, by simplifying the activities coordination and achieving economies of scale, in terms of knowledge and skills, product development, technology and manufacturing”, Daniele Vaglietti, CEO, stated.

“The decision to further increase our stakeholding in IMS TECHNOLOGIES up to take full control is a concrete sign of our commitment and our trust in the potential of this Italian company with an important global presence. We will fully support the management in the further growth of IMS TECHNOLOGIES and the change in the brand and corporate identity represents a crucial moment to start a new phase of success in the history of this Group”, Paolo Clerici, Chairman of IMS TECHNOLOGIES and Chairman and CEO of Coeclerici S.p.A., added.

IMS TECHNOLOGIES S.p.A.
www.imstechnologies-group.com



You want to produce different co-extruded pipes just with one co-extrusion tool?

To make more pipe structures – without rearranging extruders – with one pipe head. **Then you need a new concept with adapter block technology.**

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Investment in Pipe Extrusion Lines



Mr Fisher, CEO of Pipeline Plastics in front of KraussMaffei Berstorff extrusion lines

Pipeline Plastics, one of the leading manufacturers of high end pipe systems for industrial and municipal water as well as for oil and gas systems up to 40", closed the deal of complete pipe extrusion lines for HDPE smooth wall pressure pipes with KraussMaffei Berstorff at the NPE show in Orlando. The deal is part of a larger expansion plan that will include additional equipment at the Levelland location and a new facility to be located in the South Eastern US. Mr. Fisher, founder and CEO of Pipeline Plastics, said "We have a long history of working with KraussMaffei Berstorff and have had great results with their extrusion equipment. Our Decatur (Texas) facility is equipped with KraussMaffei Berstorff extrusion lines which exceeded our expectations in performance and reliability. We expect to have our Levelland expansion operational by the end of the fourth quarter of this year, and our South Dakota expansion completed in the beginning 2019". The new South East Coast facility is planned to be up and running in the third quarter of 2019.

■ Pipeline Plastics, LLC of Westlake, Texas (United States) has placed orders with KraussMaffei Berstorff as part of a multi-facility expansion of its HDPE pipe business. The expansion will include the addition of 1000 mm pipe extrusion lines at Pipeline Plastics Levelland (Texas) and Belle Fourche (South Dakota) facilities.

■ KraussMaffei Berstorff
www.kraussmaffeiberstorff.com
 Pipeline Plastics, LLC
www.pipe.us

Tailor-Made Dosing and Blending Solutions

■ Process Control produces dosing systems for manifold applications – highly precise, energy efficient, recourses saving. Always matching to the point of customer requests.

Like the new batch blender WXA015, a unit inspired by customer requests.

The advantage of this new GUARDIAN® batch blender is the high throughput by the well-known Process Control accuracy despite of the compact construction.

Based on the small size, the low weight and the special loadcell technology this blender can also be used as a mobile device on a movable frame. This blender can be used in big plants with multiple production halls highly flexible on different production lines. The material hoppers of the batch blender can get refilled manually, or optional with a fully automated conveying system also integrated on the movable frame. The additional integrated pick-up box below the blender can provide ready mixture to various devices simultaneous.

This mobile device is easy movable by one person. At the point of use there is only a 230V AC socket and a compressed air connection needed.

The GUARDIAN® can dose and mix up to six components in perfect recipe accuracy and homogeneity. It provides an optional self-

The new batch blender WXA015



cleaning-system, the actual communication protocols and an intuitive to use touch-panel operator station.

All parts in touch with the ingredients are made of 1.4301-stainless steel, to use in various industrial applications.

Thanks to this possibility it is now possible to produce economical, highly precise mixtures – even perhaps in areas where still today manual mixing units are in use.

■ Process Control GmbH
www.processcontrol-gmbh.de

Electric Drive Technology for a Sustainable Development

■ At the Plast 2018 in Milan Plastiblow exhibited a fully electric blow moulding machine PB15ES-700 with double head, in a very interesting configuration, for the production of 5-liter bottles with handle in two cavities. Several adjustments are possible on this machine characterized by accessibility to all components and simple and rapid production changes. Another blow moulding machine PB30ES-750 was also visible on the stand via webcam or directly at the factory in Corsico thanks to organized visits. This machine was equipped with a high efficiency mould for the production of 20-liter stackable jerry cans in medium-high molecular weight polyethylene with view stripe. Moreover, it was equipped with two post-cooling stations and a radial wall thickness control system (PWDS) allowing fast cycles and very good thickness distribution. The fieldbus architecture for the connection of the various electronic components at distributed intelligence, allows a digital transmission of signals with maximum reliability and speed, a precise synchronization of the servo-driven move-



ments and an accurate diagnostics and supervision of the system in real time. The machine was also equipped with a module that enables the recovery of the kinetic energy of the carriages during deceleration, converting it into electrical energy that is returned to the line. The technical solutions adopted to achieve the servo-driven movements are patented and are a distinguishing feature of the Plastiblow machines.

■ **Plastiblow S.r.l.**
www.plastiblow.it

Gear Extruder ROTOMEX Series Extended

■ In order to meet continuously evolving material requirements, TROESTER has expanded their existing offering of the Rotomex ZX series gear extruders with the addition of the ZX 75neo and ZX 120neo. Offered in a wide variety of sizes to meet an array of applications from small to large output requirements, these ma-



chines are ideally adapted for direct feeding of extrusion, calendaring and other rubber processing equipment. The new ZX neo machines incorporate several upgrades to the current Rotomex offering, including a safety clutch that releases when a torque limit is reached to prevent damage to the machine or two temperature control units, whereby the gear pump housing and the head can now be controlled independently. This creates an opportunity to achieve higher throughputs. Other features are a fully integrated loop control that is ready to easily connect with downstream equipment, an optimized handling of the rubber leakage and a disassembly aid for the breaker plate. Moreover, the larger operator panel that includes a scandisk memory card port to allow for easy recording of production data. In addition, there is a database of service information that provides details about critical spare parts, and who at TROESTER to contact for troubleshooting and service needs. The ZX 75neo and ZX 120neo are now available in addition to the conventional Rotomex sizes. A ZX 75neo will be exhibited on the DKT Expo in Nuremberg, Germany (July 2 – 5, 2018). Following the expo this machine will be available for trials at TROESTER in Hanover, Germany or for rental upon request.

■ **TROESTER GmbH & Co KG**
www.troester.de

Super Fast Laser Diameter Gauges The Solution for Accurate Diameter and Ovality Measurement

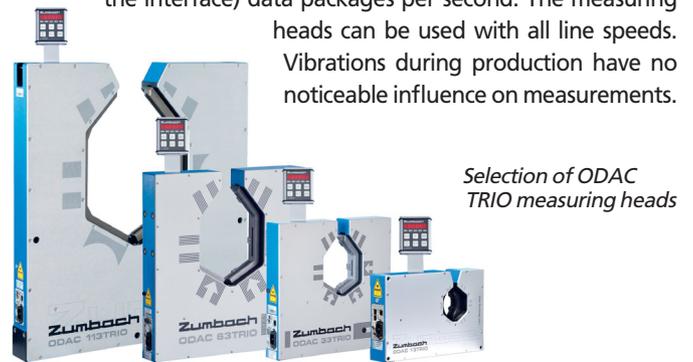
■ Diameter Scanner and Flaw Detector in One Unit ZUMBACH, pioneer of online measurement and its triple axis ODAC TRIO laser diameter gauges belong to the market leaders of super fast diameter measuring devices. Three synchronized measurement axis in one single plane provide comprehensive measurement coverage, peak-precision diameter and ovality measurement as well as precise and super-fast flaw detection capabilities. Such combinations will help to reduce system costs due to the combination of diameter measurement and flaw detection into one single measuring device. Optimum process control in continuous manufacturing processes are guaranteed thanks to highest precision and reliability. The combination of super fast scan rates, highly precise and reliable measurement contribute to the reduction of scrap and production costs: your manufacturing process remains profitable all along.

Thanks to the compact design, the ODAC TRIO measuring heads can be used in virtually every manufacturing process in the wire and cable industry, the plastics and rubber industry as well as the steel and metal industry. Known for precision, quality and ease of use the laser measuring heads from ZUMBACH are among the best of their class. The technological basis considered for these measuring heads is always of the latest cutting edge technology, with laser diodes as light sources combined with intelligent and powerful measured-value processors which facilitate a simple and flexible integration.

Main Advantages:

- 9000 measurements per second.

- 3 synchronized measurement axes on 1 single plane.
- Reliable detection of the ovality.
- Yields highly accurate mean value, regardless of the orientation of the product ovality.
- Increased measurement accuracy and reliability.
- High dirt and dust tolerance.
- Amongst the outstanding features are features such as single scan calibration (CSS), single scan monitoring and high data rate output of up to 200 (Depending on the measuring head model, the number of transmitted measured values as well as the baud rate of the interface) data packages per second. The measuring heads can be used with all line speeds. Vibrations during production have no noticeable influence on measurements.



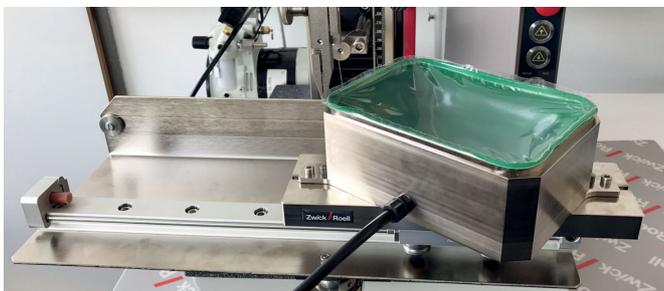
Selection of ODAC TRIO measuring heads

ZUMBACH Electronic AG
www.zumbach.com

Safely Packaged

■ Packaging has a great impact on the quality of its contents and also influences consumer purchasing decisions. Both factors represent major challenges for product design, especially where food packaging is concerned. To meet both these challenges, one of the world's leading food manufacturers opted for an innovative testing solution from Zwick Roell.

Peel-off-test of a food packaging (Image: Zwick Roell)



The 90° peel test on packaging is one of the most common tests in the field of food packaging. This type of test is used to determine adhesive/welding properties such as bond and tear strength. There are many peel and tear tests that use the same principle.

In addition to testing dimensionally stable packages such as yogurt cups, the test is also performed on unstable packaging (e.g. for meat or fruit). In this case the packaging is placed in a suitable mold and held in position via a vacuum. The opening flap of the cover foil is gripped in a screw clamp. For reproducible test results, you must ensure that the separation point is always in the test axis. To accomplish this, the mounting of the base body is tracked via a carriage. This test fixture is integrated into a zwickiLine materials testing machine (Fmax 1 kN) that can also be used for performing other tests on packaging materials. The set up, execution, and evaluation are handled by the intuitive testXpert III testing software. The results are directly transferred into the food manufacturer's laboratory database.

Zwick GmbH & Co. KG
www.zwick.de

Use of Regranulated Resin in Flexible Packaging expanded

■ Consumer goods company Henkel is committed to creating more value for its consumers while reducing its environmental footprint at the same time. To reach its stated goal of becoming three times more efficient by 2030 – dubbed “Factor 3” – the company will have to improve its efficiency by an average of 5-6 % per year. That’s why Henkel turned to long-time partner Mondi to help find a solution for incorporating more of its scrap plastic into a highly functional, aesthetically pleasing, flexible laminate packaging material.

Henkel has begun selling its Megaperls washing powder in the resulting flexible package – called a “quadro seal bag” – that consists of an OPP/PE laminate. At present, 30% of the package’s PE layer consists of industrial waste reclaimed from Mondi’s factory in Halle, Germany. That means the overall package structure contains approximately 10% regrind material.

Given the technical challenges involved, both companies recognize this as an important initial step to helping ensure that such consumer packaging meets the environmental needs of a more circular economy. Considering the package requirements – a shiny white exterior, an easy-peel opening, and no compromise in overall functionality – this is already a significant achievement for a thin, flexible OPP/PE laminate. But the two partners have much more ambitious goals.

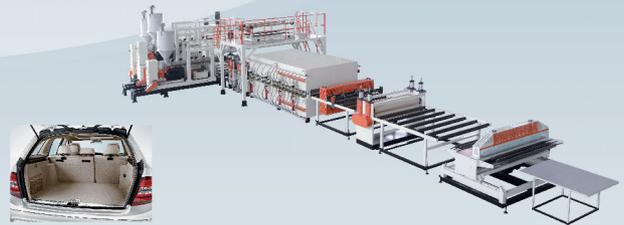
The resulting end product offers clear environmental benefits: Virgin resins are replaced with regrind material and the product’s end-of-life recycling process is simplified as the OPP/PE laminate structure consists entirely of polyolefin materials, Müller notes.

The two partners look forward to significantly boosting the percentage of reclaimed content in more Henkel packaging to contribute further to Henkel’s ambitious Factor 3 sustainability goal.



■Mondi
www.mondigroup.com
Henkel
www.henkel.com

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Four New NGR Recycling Lines added

S:GRAN Recycling Line
(Image: NGR)



■ Film industry giant, Sigma Plastics Group, is dramatically increasing their recycling capacity with the addition of four new NGR high output recycling lines. Delivering in May 2018, the four S:GRAN 125 machines will reprocess over 4 million pounds per month of film scrap from their in-house film production. The Sigma Plastics Group was founded in 1978 by Alfred Teo and is the largest privately-owned film extrusion group in North America. Based in Pompano Beach, Florida, the company has 42 manufacturing facilities producing an annual throughput of over 2 billion pounds of resin and employs over 4,700 people. Sigma

manufactures a variety of flexible packaging products servicing the industrial, agricultural, food, medical, retail, and converter film markets.

The new recycling lines represent an investment of nearly \$3 million and will be installed at Sigma Plants in Pompano Beach, FL, Spartanburg, SC, Jacksonville, FL and Nashville, TN. With the new NGR lines, these Sigma plants will be able to get the highest possible value from their film scrap by using the reprocessed material directly

into new film production.

As the largest single customer of NGR, the Sigma Group has over 40 NGR recycling machines operating at plants in the US and Canada. Headquartered in Feldkirchen, Austria and with the US sales and support office in Atlanta, GA, NGR is a leading supplier of recycling lines for the reprocessing of all forms of plastic scrap materials.

■ Next Generation Recyclingmaschinen GmbH (NGR)
www.ngr.at

From PET Bottles Bales to Egg Packs

■ GLOBAL PLASTICS is a well-known Californian manufacturer of PET packaging made entirely from post-consumer bottles. GLOBAL PLASTICS recycles approximately four million bottles a day, which are sorted by colour, ground and washed. The company then pelletizes the flakes and extrudes the sheet for final use in thermoforming. The entire process is performed by AMUT GROUP machines and complies with FDA certification regulations for packaging suitable for direct food contact applications.

Hickman's Family Farms is involved in eggs extensive production and has launched into the market an egg container made entirely from post-consumer PET soda and water bottles. The partner for this project is GLOBAL PLASTICS.

This eco-friendly container takes about five bottles to make an 18-count egg pack and about three bottles to make one of 12-count egg. A 24-egg carton will be coming to shelves very soon.

Hickman's Family Farms is also starting its own in-house thermoforming business with ACF920 model branded AMUT-COMI.



The newly developed software named EASY extremely simplifies machine running, also for companies that begin to produce.

ACF is the AMUT-COMI series firstly presented during K 2016: in two years several machines are already been installed worldwide. ACF model has now penetrated also the Northern American market.

■ AMUT Group
www.amutgroup.com

New Crosslinkable and HFFR Compounds for Demanding Wire & Cable Applications introduced

■ At Wire Düsseldorf 2018, Padanaplast introduced a range of new Cogegum® AFR and Cogegum® GFR wire and cable compounds incorporating an advanced halogen-free flame-retardant (HFFR) technology. The new materials meet the strict requirements of EU Regulation 305/2011 for buildings Construction Products Regulation (CPR) and ISO 6722 for automotive cables.

Fire incidents involving halogenated plastics can have a severe impact on the health and safety of affected people as well as on the structural integrity of buildings or, for example, on the properties of metals in end-of-life vehicle recycling. There is a growing demand for materials that will effectively minimize the hazards of toxic fumes, disorienting thick smoke and corrosivity in the case of a fire. Important provisions and standards governing these requirements include EU Regulation 305/2011 for buildings, also known as Construction Products Regulation (CPR).

Padanaplast, specializing in crosslinkable polyolefin compounds for use in wires and cables, pipes and fittings, has developed a range of new Cogegum® extrusion materials designed to eliminate these risks.

At Wire 2018, Padanaplast is introducing five new CPR-compliant Cogegum® HFFR grades for building & construction and two special HFFR grades targeted at applications in automotive. Except for one all-thermoplastic sheathing grade, all these compounds are silane crosslinkable products of the Cogegum® GFR series based on Sioplas® process technology. The offering is further differentiated by application specifications, such as



(Photo: iSTOCK)

cable construction or enhanced resistance to fire and chemicals. In addition to two grades for T3 (125°C) automotive insulation for primary wiring applications, there is also a sheathing compound (Cogegum® GFR 380) providing enhanced flexibility and resistance to mineral oils and fuels for applications in railway, marine and the chemical and oil industry.

Padanaplast compounds can be processed on most common extrusion lines, and all products conform to RoHS requirements according to EU Directive 2002/95/EC.

■ Padanaplast S.r.l.
www.padanaplast.com

Cooperation

■ Extruder reliability, stable outputs and a regional presence has fostered a mutually beneficial relationship between Davis-Standard and Cooper Standard in Asia. Cooper Standard, one of the world's largest suppliers of automotive components, has been a longtime Davis-Standard customer in North America, but in 2012 this relationship expanded to include the company's Asian-based operations. Since that time, Cooper Standard has installed over 50 Davis-Standard extruders at plants in China, India and Korea for processing a wide range of materials, but primarily thermoplastic vulcanizates (TPV) and thermoplastic elastomers (TPE) used for manufacturing automotive window and door seals.

Davis-Standard (Suzhou) Plastics Packaging Machinery, Co., Ltd. has been instrumental in this process, offering regional support and service, and enabling Cooper Standard to purchase extruders directly from Suzhou using Chinese currency rather than inter-

national transactions with the United States. The Suzhou location has continued to expand its scope of services since opening in the fall of 2012, which has significantly impacted Davis-Standard's ability to better serve customers in Asia.

"Davis-Standard extruders have given our Asian operation greater consistency. We've seen improved pressure stability, dependable outputs and better product quality," said Liu Weihua, Senior Manager, Process Engineering ADV Department, Cooper Standard Automotive Co., Ltd. "Davis-Standard's location in Suzhou has improved extruder delivery times, service and technical support. It has definitely played a big part in Davis-Standard becoming our preferred extruder provider for this region."

Davis-Standard engineers proprietary TPV and TPE extruder arrangements for Cooper Standard with extruder sizes ranging from 32 to 100mm (1.25 to 4 inches) along with feedscrews and control systems. In addition to thermoplastic extruders, Davis-Standard has supplied an elastomer extruder complex comprised of four cold-feed rubber extruders and a five-layer profile line

for producing tubing for fuel delivery systems. Cooper Standard is the world's largest supplier of fuel and brake delivery systems as well as sealing technologies that reduce weight and improve auto safety. Cooper Standard is currently researching the viability of using Davis-Standard extruders for processing the company's innovative Fortrex™ line of static weatherseal systems to further improve performance and aesthetics.

"Cooper Standard is an excellent example of how our regional presence in Asia has made a substantial difference for customers," said Jinsong Lin, General Manager of Davis-Standard (Suzhou) Plastics Packaging Machinery, Co. "We will continue to expand our technical and service capabilities, especially as business in this region grows, but we've established a solid infrastructure in Suzhou that will benefit customers like Cooper Standard now and in the years to come."



Pictured is an example of a Davis-Standard extruder arrangement built for Cooper Standard in Asia

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

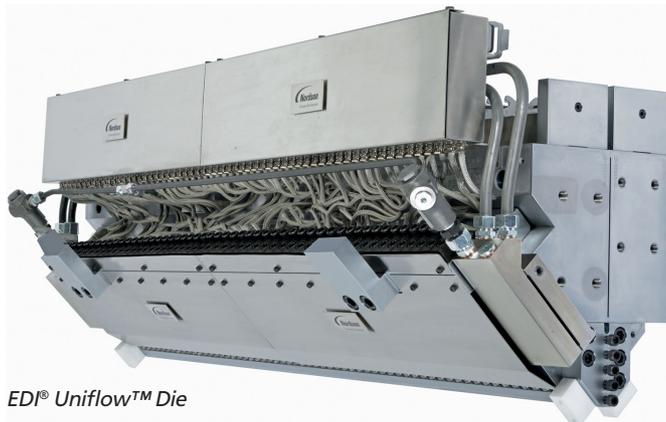
Cost-Performance Options expand for Cast Film Dies

■ Nordson Corporation has adapted an extrusion die technology that has been in global use for 15 years and now offers it under the new name Uniflow™ as an alternative for cast film applications that do not call for the unique capabilities of the widely used EDI® Contour® die.

The Contour die is the most technologically advanced cast film die on the market, with a distinctive "sculpted" shape that is the key to enhanced product quality, raw material conservation, and maximum uptime, noted Scott Smith, business unit director for polymer dies.

The Uniflow die, now available under the EDI® brand, was first developed by the Belgian firm Verbruggen, which Nordson acquired in 2011. "While the Uniflow die represents a lower-cost alternative to the Contour die, it provides real advantages in important application areas," said Smith. "It is a versatile die whose effectiveness has been proven in both monolayer and multilayer production."

With the addition of the Uniflow die, along with recent innovations in gauge profiling and feedblock adjustment, Nordson's portfolio of technologies for cast film is now so diverse that processors can select a package of EDI die system components that exactly meets their performance requirements.



EDI® Uniflow™ Die

The cast film die alternatives now offered by Nordson include:

- Contour® die. The special configuration of this die offsets the differences in die body deflection across the width of the die; an elongated teardrop, diminishing volume manifold cross-section improves layer uniformity in coextrusion; and a non-linear interface between the preland and manifold greatly reduces or eliminates "M" or "W" flow patterns.
- Uniflow™ die. This die provides an affordable option for high-speed production of thermally stable resins with very few rate changes, such as for stretch film. Its versatile flow channel accommodates a broader range of resins and processing parameters. It has an elongated teardrop manifold cross-section that promotes uniform layers in coextrusion.
- Multi-Manifold Dies. As an alternative to use of coextrusion feedblocks with single-cavity dies, Nordson also offers multi-manifold dies designed to accommodate materials with dissimilar viscosities and partial coverage requirements. These dies are capable of generating skin layers with less than 10% of the thickness of the total structure and producing coextrusion structures with temperature differentials up to 50 °F (28 °C).

All of these dies are available as part of a total system, including Autoflex™ automatic gauge profiling systems, Ultraflow™ coextrusion feedblocks, dual-chamber vacuum boxes, and UltraSplit™ online die separation devices. Nordson has recently introduced next-generation technologies for these system components. In Autoflex VI-RE gauge profile control system, the stroke of the lip adjusting system has been increased by 43% without adding to response time, enabling it to correct a wider range of process variations, often without need for manual intervention. The new Ultraflow V-T feedblock makes it possible to fine-tune individual layers as well as accommodate changes in layer ratio, and to adjust the tuning system without removing the feedblock from the production line.

■ Nordson Polymer Processing Systems
www.nordsonpolymerprocessing.com

New COMPEO Compounder Series opens up New Horizons for BUSS Kneader Technology

■ The COMPEO series, which was premiere at NPE 2018, is a major step forward for Buss AG’s compounding technology. Put together from standardized modules, the series permits cost-effective configuration of specifically optimized compounding lines for an extremely wide range of processing tasks and temperatures. These extend from traditional segments such as PVC and cable compounds via highly filled polyolefins to engineering polymers with processing temperatures of up to 400°C (750°F). Even hybrid lines for processing very different products are simple to configure, while fully retaining the conventional features of BUSS Kneader technology such as high-intensity mixing, high filler contents and precise temperature control.

One key factor in the high flexibility of the COMPEO Compounder is the ability to combine conventional three- or four-flight kneading elements with new elements comprising two or six flights and to use them at any desired position in the process section. As a result, previously conflicting aims, such as a high specific throughput at a controlled energy input, can be simultaneously achieved. All the flights are generated as free-form surfaces which means that they provide uniformly intense product shear, so preventing local overheating.

The modular concept also means that process length, the type and number of feeding units, temperature control and degassing can all be optimally tailored to the specific processing task. A vertical inlet screw or side feeders can also be used instead of an inlet hopper. Further side feeders can be provided along the processing zone, while liquid additives can be injected directly into the product at any desired position through kneading teeth with a bore.

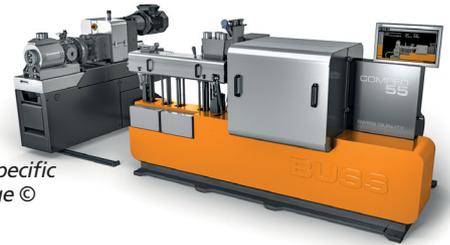
The newly developed COMPEO discharge unit, which is used for all processing tasks, is based on the principle of a slowly rotating conical twin screw. Irrespective of compounder configuration, the discharge unit reliably builds up pressure for downstream units such as screen changers and pelletizers and ensures constant throughput even at high back pressures. The housing of the discharge unit can be completely removed for ease of maintenance and cleaning.

The new screw geometries and improved raw materials feed mean that the throughputs of earlier models can be achieved at 20% lower screw speeds. In addition, BUSS has boosted torque density by 15%. This permits longer mixing zones and thus stabler process conditions without any additional increase in energy input.

All these improvements combine to make the COMPEO series’ processing window much larger than in previous series. As a result, throughput can be varied in a ratio of 1:6. This increases both line flexibility and ease of operation, for example on startup or when producing small sample batches.

The great majority of pipes and lines is located within the machine behind easily cleaned casings. A gearbox cover reduces operating noise and increases occupational safety. Thermal insulation of the process section minimizes energy losses while standardized mod-

The new COMPEO compounding system from BUSS opens up entirely new horizons by permitting optimized application-specific line configuration (Image © Buss AG)



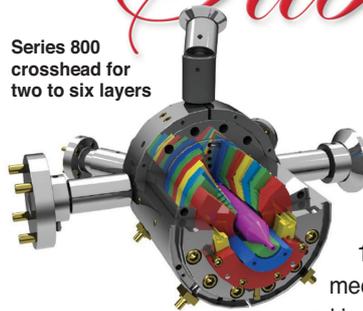
ules mean that capital costs are up to 30% lower than those for previous models.

The touch screen line controller with its OPC UA interface makes COMPEO completely Industry 4.0 compatible. Built-in recipe management makes changing products pretty much a matter of pressing a button. All significant line parameters are displayed, logged and archived. In addition, process parameters such as temperatures, power consumption or specific energy input, and thus the efficiency of the line, can be continuously monitored.

■ Buss AG
www.BUSScorp.com

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World's Largest Mosaic made of ETFE Film



■ The world's largest façade made of single layer ETFE film is gleaming in the club colors of the Mexican first division club, FC Puebla. The freshly renovated traditional stadium Cuauhtémoc in the Mexican highlands rises to a height of around 40 meters. The extravagant façade made of more than 30,000 square meters of film was built in a very sophisticated design. The film was extruded from the high-performance material 3M Dyneon Fluoroplastic ETFE. The lightweight film makes it possible to build the stadium with 1,500 tons of steel less than for a comparable glass façade.

The façade seems extremely lightweight in its curved shaped and incorporates pre-Columbian design elements with its mosaic character. It consists of 124 vertical segments, about 40 meters in height. A total of 5,952 ETFE film sections in the three shades were welded to one another for the segments. In the daytime the club colors of blue and white as well as the transparent sections continue to be visible. By night the film sections are illuminated by in various colors by LED lights.

Especially important in the hot and humid climate: In the production of films made of 3M Dyneon ETFE no plasticizers are required, which evaporate over time and thus could promote algae or fungal growth. ETFE films are so smooth that rain showers are sufficient to clean the façade to the greatest possible extent. They are so resis-

tant to other chemicals that they are also able to withstand environmental influences such as exhaust emissions for decades.

Originally, parts of the façade of the stadium in Puebla were made of glass panels in various colors. Dünn Lightweight Architecture chose to design the complete façade with ETFE film instead. One significant advantage: The weight per unit area of ETFE is around 95 percent lower than that of glass. As a result, stress analysts were able to build the support structure in a much lighter way. Instead of the 2,500 tons of steel required for a glass construction, 1,000 tons are sufficient for the ETFE façade, a savings of 60 percent.

Nowofol Kunststoffprodukte GmbH & Co. KG extruded the films from high-performance material 3M Dyneon ETFE. The company manufactured the NOWOFLON ET 6235Z film for the project in Mexico in three shades and with a thickness of 200 micrometers. The 160 cm wide films were welded in such a way that a mosaic with 80-centimetre-high fields results in the panels up to six meters wide. Nowofol produces ETFE films in nearly all RAL shades and in an infrared absorbing design, in order to minimize the solar heat gain. The films comply with fire classification B1 (in accordance with DIN 4102), an important criterion for stadiums.

Shortly after the remodelling, the naming rights for the stadium were sold to the financial group Multiva for 30 years. There is a very simple reason why there was no public outcry: It was not the last Aztec ruler Cuauhtémoc that the stadium was named after, but rather a brewery that financed the majority of the original construction 50 years earlier. In 2011 this brewery was bought up by an international group.

► **3M, Dyneon GmbH**
www.3M.com, www.dyneon.eu

Largest Recycling Machine installed

■ Green Line Polymers, an Advanced Drainage Systems ("ADS") recycling subsidiary, has recently installed the largest NGR recycling machine ever built capable of recycling well over 4,000 lbs. per hour of plastics scrap materials in a variety of forms.

Their recent installation will recycle high volumes of post-industrial PE scrap materials. This recycled product will then be a raw material building block for the next generation of ADS corrugated piping products and water management solutions (WMS). Green Line Polymers is one of the largest recyclers of polymer products in North America.

ADS is a leading manufacturer of high performance thermoplastic corrugated pipe and ancillary products, providing a comprehensive suite of water management products and superior drainage solutions for use in the construction and infrastructure marketplace. Their innovative pipes, fittings, basins and other products are utilized across a broad range of end markets and applications, including non-residential, residential, agriculture and infrastructure

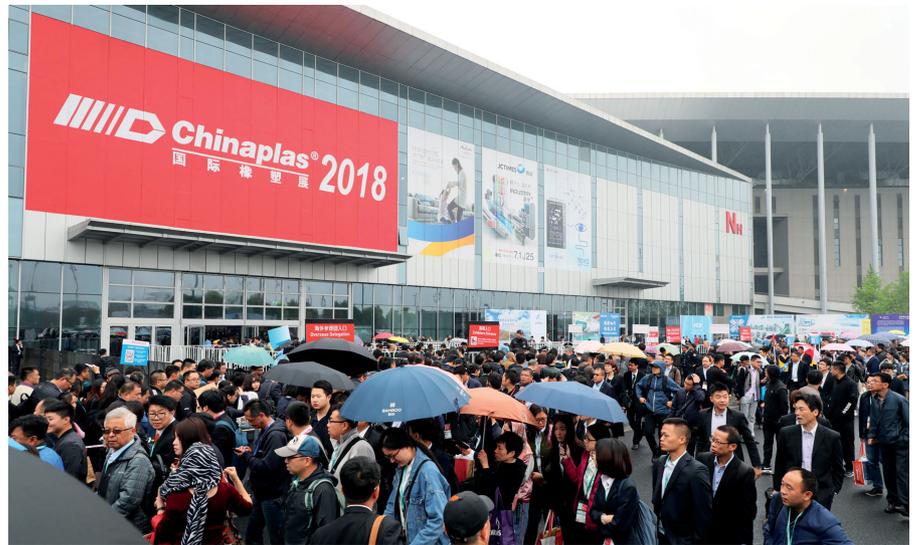
applications. Founded in 1966, ADS operates a global network of approximately 60 manufacturing plants and over 30 distribution centers. Today, more than 8.5 billion feet of ADS pipe are in service around the world.

NGR, based in Austria, just delivered their 1000th plastics recycling line. Key benefits for their customers is the "One-Step Technology" which utilizes a shredder-feeder-extruder combination. This configuration ensures the highest energy efficiency while minimizing equipment footprint and reducing material handling steps. NGR operates their Technical Center near Atlanta, GA along with a full-scale recycling line available for customer testing and trials. All sales, technical service, spare parts, and training functions for their North America customers are handled from this facility.

► **Next Generation Recyclingmaschinen GmbH (NGR)**
www.ngr.at
Green Line Polymers Inc.
www.greenlinepolymers.com

Picture 1: Biggest CHINAPLAS in history welcomed 180,701 visitors

Biggest CHINAPLAS welcomed 180,701 visitors at 340,000 sq.m. exhibition space marking a new milestone in its history



Chinaplas At The New Venue Setting Records

A highly successful CHINAPLAS 2018 concluded its four-day show on April 27, 2018, in Shanghai. The rainy weather prior to the opening of the 32nd edition of show did not hamper the enthusiasm of visitors, who were inspired by smart manufacturing, innovative materials, and green solutions. A total of 180,701 professional buyers from all over the world visited CHINAPLAS during the four days at the new show venue, the National Exhibition and Convention Center (NECC), Shanghai, PR China. CHINAPLAS 2018 recorded the highest visitor count in history, and the show also set a new record in terms of exhibition space.

A record number of visitors: CHINAPLAS 2018 attracted 180,701 professional buyers. The number of overseas visitors totaled 47,900, accounting for 26.5% of the total. They came from 150 countries and regions, including Hong Kong, India, Indonesia, Iran, Italy, Japan, Korea, Russia, Taiwan, Thailand, Turkey, the U.K.,

Vietnam, and United States, among others. Compared with the Shanghai edition of show two years ago (at the previous venue in Pudong), the number of visitors increased remarkably by 21.6%. The total also rose by 16.4% compared with last year's Guangzhou edition of the show.

Ada Leung, General Manager of CHINAPLAS organizer Adsale Exhibition Services Ltd., was delighted by the results. "I have never seen such a huge number of visitors before," she said. "Most of our exhibitors were satisfied with the result," added Leung.

New record for exhibition space: CHINAPLAS 2018 was the first edition of show to be held in the NECC, and allowed the organizer to accommodate the strong booth space demand. With the much larger NECC, CHINAPLAS set a new, all-time record for exhibition space in the show's 32-year history. The exhibition area covered 340,000 sq.m., an increase of 100,000 sq.m. compared to the Shanghai edition two years ago. Some 3,948 market leaders exhibited

and brought cutting-edge solutions to the world stage during the show period.

From 2012 onwards, CHINAPLAS has faced the problem of an exhibition space shortage. When the show was held at the Shanghai New International Expo Center in Pudong, all the indoor exhibition halls had been used up. It took the CHINAPLAS team two full years to shift CHINAPLAS to the new venue.

"In moving to NECC, CHINAPLAS this year marked a new milestone in her history," Leung said. "To outsiders, many may think that the successes of CHINAPLAS came very naturally or easily as the show has been well established in the market. But we all know this is not the case. The achievement of the CHINAPLAS show is the result of hard work, perseverance, the pursuit for continuous improvement, sensitivity to market needs, creativity and seamless collaboration among internal teams and with our different cooperation partners. The last 24 months were very tough,

but we have been rewarded by the positive results," she said. "Visitors are satisfied with the theme zone arrangement, as they can more easily find clusters of exhibits that address their specific interests."

New visions – concurrent events: At CHINAPLAS 2018, visitors not only met nearly 4,000 exhibitors showcasing their advanced products and services, but visitors also were able to participate in a number of exciting concurrent events. These included the "3rd Industry 4.0 Conference", "Tech Talk", "Medical Plastics Connect" and "CMF Inspiration for Design x Innovation". The concurrent events were well-received among visitors and most sessions were fully occupied. Additionally, there were more than 120 global or Asian product launches at CHINAPLAS 2018, which helped to inspire visitors with the host of new idea from this technology-oriented trade show.

Exhibitors' impressions

At Chinaplas *battenfeld-cincinnati* focused on the wide range of complete production line solutions for all pipe applications. Toni Bernards, CEO of *battenfeld-cincinnati* (Foshan) Extrusion Systems, was impressed by the show scale: "The new show venue is great for showcasing ma-



Picture 3: At Chinaplas Dow Performance Silicones, a global business unit of DowDuPont Specialty Products Division, took the opportunity to launch a new additive technology

chinery. And we were happy to have such a huge number of visitors. Over 420 guests paid a visit to our booth, including 215 domestic and 125 international customers and over 80 old customers. At booth 2 contracts were signed. A PE400 pipe extrusion line was sold to a customer from Iran and 2 extruders and 2 kinds of haul-off downstream equipment were sold to a domestic customer."

JSW Machinery Trading (Shanghai) exhibited at Chinaplas all electric injection molding machines of JADS

series and a twin screw extruder TEX34αIII-52.5BW-2V. The company pays special attention to energy-saving. Eco-friendly mode reduces power consumption and overall operating costs. Yusuke Ikeda, assistant manager at JSW, commented the importance of Chinese market for the company: "China is a very perspective market and local processors are changing their mind, focusing on environment such as reducing VOC, our extruder matches their demands. As compared to the world demand level, the demand in China is 10 times higher. And the business activity has still been increasing. So exhibiting at Chinaplas is always very inspiring."

Picture 2: At Chinaplas *battenfeld-cincinnati* focused on the wide range of complete production line solutions for all pipe applications



At Chinaplas *Dow Performance Silicones*, a global business unit of DowDuPont Specialty Products Division, took the opportunity to launch a new additive technology. Christophe Paulo, Industrial and Consumer strategic marketer at Dow Performance Silicones, shared his thoughts about new challenges and latest trends in plastic industry and Chinese market.

How did Dow and Dupont merger influence companies' business? What benefits did Dow get?

"As a part of DowDupont now we have a broader range of offerings.

Together, we have one of the broadest portfolios of engineering resins. And it is not only about production process. We are uniquely positioned and fully resourced to address our customers' most pressing needs. We can help them select the right solution, design the tool, make the simulation and carry out all the pilot tests. We can accompany our customers through to the full commercialization of their product. Now we can do all of that and this capability is unique to the industry."

What is the most special about Chinese market?

"What makes the Chinese market most unique is that within five years China had achieved great technological and industrial advancements that took Europe, for example, 20 years to achieve. And now, like rest of the world, the Chinese industry is striving for more sustainable types of solutions."

Are there any products in your portfolio more demanded by Chinese market?

"There are a lot of electronic goods made in China. Engineering resins, like Zytel polyamides and Delrin acetal homopolymer resins, on display at

our booth, are best for electronic application. Phones, and other portable devices, require light weight but high impact resistance. So that drives the need for these types of materials.

Also, 25% of automotive parts are made in China. Our new DOW CORNING™ HMB-1903 Masterbatch silicone-based technology presented here, is perfect for the automotive industry, but this patented anti-squeak additive can be used much more broadly. It can be used in many different applications that involve the assembly of plastic parts, for instance, window frames, office chairs, fridges and so on. "

What about ecology and environmental problems? How does your company contribute to this issue?

"By producing something that can have a longer useful life you make a significant, positive contribution to the global ecological issue. For instance, four years ago we launched an anti-scratch additive for interior automotive parts. That additive makes your car look new for a longer period of time. Improving the quality of materials using these types of additives to make applications look good longer, is an example of our contribution to sustainability.

China is moving fast to adopt these sustainable solutions. The quality

of local products have recently improved significantly as the Chinese plastics industry is steadily using more engineering, environmentally responsible types of materials. In fact, China is the leading country in terms of engineering resin consumption."

CHINAPLAS' organizer celebrates 40th birthday

The Adsale Group, organizer of CHINAPLAS, celebrated its 40th birthday during CHINAPLAS 2018. At Adsale's 40th Anniversary "Honorable Partner" Awards Presentation Ceremony held on the show's first day, The Adsale Group Chairman Stanley Chu said the company grew along with China's economy.

"Over the past 40 years, Adsale has weathered the struggles of early industries and benefited from the current economic take-off. We have witnessed China's transformation from a 'factory of the world' to a powerhouse of innovations," observed Chu. "In the early years, CHINAPLAS was organized to introduce overseas technologies and provide a procurement platform for local companies. Now, it is an international hub that facilitates exchanges between suppliers and buyers from all over the world, and provides a platform for the introduction of high-end technologies."

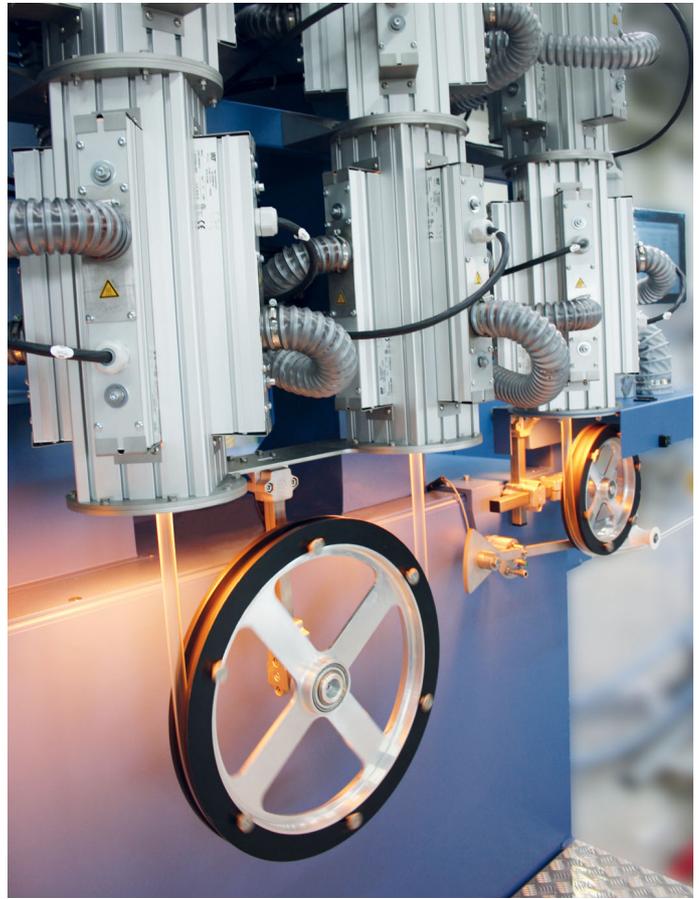
"With many brilliant and glorious years of reform and opening-up laid as groundwork, CHINAPLAS' scale now, for the first time, exceeds 300,000 sq.m. – providing an indicator of the industry's massive demand for new technologies. It's a critical moment in China's economic restructuring and the shift to new growth drivers. We aspire to promote the transformation and upgrading of the industries and sustainable development through the introduction of innovative technologies," continued Chu.

New journey in 2019: CHINAPLAS 2019 will rotate to Guangzhou, running from May 21- 24, 2019.

Picture 4: The Adsale Group, organizer of CHINAPLAS, celebrated its 40th birthday during CHINAPLAS 2018



Floor heating, radiator connections, hot and cold water piping: PEXa pipes are used for many different applications. However, PEXa pipe extrusion still belongs to the most demanding processes encountered in the extrusion industry. Manufacturing companies are presented with significant challenges. One of the challenges is the cross-linking process of the involved polyethylene. iBA GmbH, headquartered in Melle (Germany) offers an efficient and innovative technical solution based on infrared heating. The system is called PEXLINK



Picture 1: PEXLINK conveyor oven - 4-strand conveyor oven featuring a specifically designed guide and deflection system, a precondition for higher production speeds and higher outputs thanks to an extended residence time for each pipe dimension

PEXa Pipe Extrusion: Innovative Heating Technology based on Infrared Radiation

Unique 4-strand conveyor oven

The core element of the heating process is the unique conveyor oven which enables the process in the first place and ensures the specific high production quality. The perfect tuning of the extruder and the extrusion die provides a good melt homogeneity at a very low mass temperature which is imperative for the cross-linking process that takes place after the pipe has passed the extruder. The innovative 4-strand conveyor oven features 12 infrared units and a specifically designed guide and deflection system to achieve the correct cross-linking of the polyethylene. The required exposure to radiation has a direct influence on the haul-off speed. A very short exposure permits a high haul-off speed. When the pipe subsequently passes several infrared units, it is possible to increase the ex-

posure period. As a result, the haul-off speed can be increased to a maximum of 36 m/min.

During the pipe's passage through the oven, the thermally activated peroxide which is regularly distributed inside the pipe wall decomposes following an optimum wavelength distribution of the infrared radiation. Highly reactive components are produced (radicals). They split hydrogen atoms from the polyethylene chains. In the now free spots the cross-linking process takes place through a recombination with other polyethylene chains.

The particular advantage of the infrared heating process is that heat radiation penetrates the material much deeper than pure thermal convection. As a result, a perfectly round pipe with a good geometry can be produced. Even smallest tolerances and an ovalness of less than 0,3 mm which is far below standard requirements can be adhered

to. Gaseous reaction products are instantly removed by an integrated extraction system which aspirates them directly from the oven and all neighboring line parts.

Intelligent cooling system

In order to protect the pipe from overheating during the cross-linking proces, an air cooling system has been integrated. This is an intelligent cooling system which protects the pipe from burning and ensures the safe handling of the pipe material.

This specific PEXa process stands for the complete cross-linking inside the pipe wall as the pipe is perfectly cross-linked „in a hot state“, i.e. above the melt temperature. Due to the high cross-linking degree, the required long-term pipe properties, namely a very high flexibility and ease of installation are achieved already with small wall thickness sizes. PEXLINK technology stands for a long-term temperature resistance and a proven lifespan of more than 50 years. PEXa pipes are permanently suitable for exposure to high (+95° C) and low (-60° C) temperatures and they are extremely pressure-resistant.



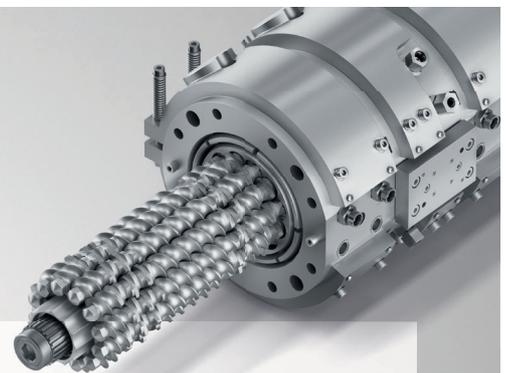
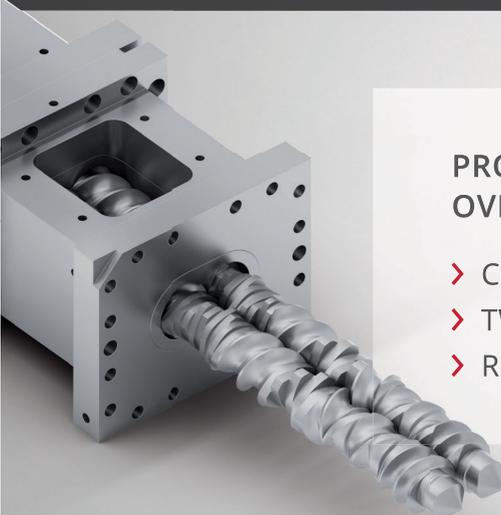
Picture 2: PEXLINK conveyor oven – Infrared units are the prerequisite for the optimum cross-linking of polyethylene. To protect the pipe from burining, a cooling system is part of the oven

Author:
David Brinkmann, Marketing

iBA GmbH
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The University of Rosenheim, Germany, has built a system – a pilot plant unique across the whole of Germany – for developing climate and resource-friendly procedures and materials for automotive applications, timber construction and furniture manufacture as well as a wide range of other applications. The aim of this investment project is to combine the advantages of wood fibres with those of polymers in order to develop technologically innovative products made of natural fibre-polymer composites and to develop appropriate manufacturing technologies for producing the same



Pic. 1: Graviplus-series gravimetric synchronous dosing and blending station with four Labline dosing modules, one of which can be automatically supplied with material by a Metro conveying unit, while the other three have to be manually filled (all images: motan-colortronic)

Multifunctional Dosing System for Combining Natural Fibres with Polymers

MUNACU – an inter-faculty research collaboration

The inter-faculty research collaboration project “MUNACU - Multifunctional Natural Fibre & Synthetics Composites” was sparked by an announcement by the Federal Ministry of Education and Research (BMBF). This announcement detailed the fact that the BMBF is offering help to universities of applied science seeking to expand their research profile or a research focus through investment projects with the acquisition and application of research equipment through its “FHInvest” funding initiative.

“Initially, we were going to combine classical wood processing methods with proven and efficient one-shot injection moulding

Pic. 2: The modular dosing system comes with four different dosing modules and can be quickly and easily adapted for feeding granulate, micro granulate, powder, grinding stock and liquids and various dosing tasks



technology”, explained Peter Karlinger, professor at Rosenheim University, about the project’s origins. Karlinger designed the “Multifunctional lightweight construction using raw or natural materials, with an emphasis on renewable fibres” project together with his colleagues Dr.-Ing. Michael Schemme, who specialises in fibre composites, and Dr. Andreas Michanickl from the faculty of wood technology and construction.

Integrated system configuration

In designing the pilot system, the researchers pursued an integrated concept that simultaneously meets the objectives expressed by the superordinate principle of “from the raw material to the fibres and the final component”. This means that the system is correspondingly complex and comprises a number of components that are located in different departments:

- Refining system inside the university’s Wood Materials & Engineering Laboratory for producing specific natural fibres
 - DCIM direct compounding injection moulder in the Polymer Processing Centre
 - Gravimetric synchronous dosing and blending station with four dosing modules for supplying the compounder
 - Vertical clamping unit that can simultaneously be used as a stamping press
 - Additional injection moulding unit (bolt-on unit)
 - IMC injection moulding compounder with a continuous gravimetric dosing system
 - Six-axis robot, experimental tools and test equipment
- Material preparation and processing using DCIM technology



Pic. 3: The dosing system is controlled by a Gravinet GP control unit, which is operated using a menu displayed on a 12.1" TFT touch screen

In Direct Compounding Injection Moulding (DCIM), the raw material is both prepared for processing and then moulded in a single production step.

This is achieved by employing a single-screw compounding extruder that continuously feeds material to a standard plasticizing and injection moulding machine. The tip of the extruder is fitted with a switch valve for controlling the material feed to the plasticizing and injection moulding machine. There is no need for a melt reservoir; and the injection process itself is not changed.

Directly processing material at a uniform temperature has both technical as well as economic advantages. This includes better material quality thanks to the fact that the material is not put under any significant thermal or mechanical stress (lower shear stress). This process also, for example, makes it possible to gently and uniformly integrate longer fibres, which is very important when working with natural fibres. Forgoing the production of a semi-finished product also saves costs and energy. The DCIM technology was jointly developed by KraussMaffei, Motan-Colortronic and the compound developer Exipnos.

Quadruple Labline dosing system – Precision component dosing

The compounding extruder is supplied with material by a Graviplus-series gravimetric synchronous dosing and blending station from Motan-Colortronic, Germany. The dosing system features four Labline dosing modules. One of these dosing modules can be automatically filled with material by a METRO conveyor, while the other three are designed to be filled manually. The dosing modules are equipped with dosing screws that are suitable for materials with a range of different flow properties (free flowing, average and poorly flowing). One of the dosing units has been retrofitted with a twin dosing module.

The dosing system is modular and can be quickly and easily adapted to a range of different dosing tasks, which makes it perfect for use in the planned research project. The different modules include modules for dosing granulate, micro granulate, powder, grinding stock and liquids. The dosing system also

includes dosing modules with twin screws and mixers for dosing materials that do not flow easily or not at all.

The Graviplus uses the differential weighing method, which is also known as 'loss-in-weight' feeding. This is because loss-in-weight feeding is significantly more accurate than batch dosing as demonstrated by dosing tests conducted during a previous project. This aspect is particularly important when working with materials that are difficult to feed. The fact that the material is fed directly to the compounding extruder also means that it is near impossible for material to separate, which, in addition to the required level of dosing accuracy, was another reason for choosing a continuous gravimetric dosing system.

During operation, the control unit compares the actual with the specified nominal throughput rate, which means that deviations are instantly identified. These deviations are then compensated for using the dosing modules' feed speed. The material is continuously and synchronously fed into the storage container, where it is mixed to form a homogeneous blend that is then fed into the compounder's material feed. This process ensures that the material does not separate.

Thanks to the fact that the material flow is constantly monitored and controlled on the basis of its weight, bulk density fluctuations, particle size differences or changes in flow behaviour only have a marginal affect on the differential system's dosing accuracy. This aspect is also an important factor for the research project that is going to be conducted in Rosenheim, because dosing and conveying natural fibres is considered a serious challenge.

The dosing system is controlled by a Gravinet GP control unit, which is operated using a menu displayed on a 12.1" TFT touch screen. The control unit displays messages and alarms in plain text.

"Apart from needing a system with a high level of dosing accuracy and that would allow us to reproduce results, we also needed one that is easy to use. With this system, changing the test set-up and the material only takes a few minutes" explained Karlinger.

Research aims

The technologies now available to us in wood and polymer materials processing allow us to research a wide range of different material and process technologies. This research is primarily aimed at investigating and developing new materials and lightweight construction methods that will allow us to produce components from natural fibres in a more resource-friendly and cost effective way, and such that they are suitable for a wide range of applications. The researchers are also planning to conduct comparative tests with the DCIM and classical parallel double screw extruders with reference to the IMC injection compounder, which is also equipped with a Motan-Colortronic continuous gravimetric dosing system.

■ motan-colortronic gmbh
Otto-Hahn-Str. 14,
61381 Friedrichsdorf, Germany
www.motan-colortronic.de

China's extensive portfolio offers processors the right line for every pipe application – from small and medium standard pipes to more complex multi-layer or large diameter pipes. High-quality extrusion equipment and services are the core of the company's products, which could be seen at Chinaplas 2018 in Shanghai



Pic. 1: uPVC pipe produced with a leanEX 2-CL extruder

Plastics Pipe Extrusion Solutions at Chinaplas

"We see a lot of growth in pipe extrusion, particularly in the infrastructure sector here in China. For Chinaplas, we were focusing on our wide range of complete production line solutions for all pipe applications", says Toni Bernards, CEO of battenfeld-cincinnati China.

solEX: best performance for large diameter PO gas pipes

"Air pollution is a problem in China and this has resulted in efforts to promote gas pipelines. These pipes are mainly made from PO and battenfeld-cincinnati China is known as a technology leader in this segment. Our solEX extruders are ideal for gas pipe production due to their processing properties and high outputs. They are also ideal for large diameter pipes that are often used in gas pipelines," adds Toni Bernards.

solEX single screw extruders offer top performance for smooth and corrugated PO pipe extrusion (up to 2,750 kg/h for smooth HDPE pipe and up to 2,200 kg/h for corrugated HDPE pipe). They have high throughputs thanks to their optimized screw geometry and large processing length. At the same time, they offer excellent melt homogeneity and low melt temperatures for best product quality. AC motors ensure low energy consumption – in total, solEX extruders use 15-25% less energy than conventional extruders. At Chinaplas, a solEX 60-40-C was shown at the booth with the new control system BCtouch

Pic. 2: solEX 60-40-C extruder with the new BCtouch UX control



UX, which was introduced to the Chinese market last year.

**State-of-the-art control system
BCtouch UX**

“The new control system has already received lots of positive feedback and proven itself in operation,” says Toni Bernards. The control features Industry 4.0 applications like preventive maintenance, OPC-UA functionality and remote maintenance. The swivel-type operating panel has a 21.5 inch HD multi-touch screen for intuitive operation and allows individual configurations and language selection for each operator.

leanEX: efficient turnkey solution for standard PVC pipes

“PVC pipes are also a growing sector in the Chinese market because of growing urbanization and the replacement of old pipe systems. They are used in infrastructure projects, e.g. for cable duct and sewage applications because of their long lifetimes and easy installation. battenfeld-cincinnati China offers extruders for the whole range of PVC pipe production. For standard applications and medium sizes we recently introduced the leanEX conical twin screw extruders,” explains Toni Bernards. The new leanEX conical twin screw series features the same concept of high automation, speed and outputs as that



Pic. 4:leanEX 2-58R-CL extruder for standard PVC pipe production

of the well-known leanEX PO pipe extruders. Based on European technology, the machines are designed for standard PVC pipe applications. Optimized, nitrated screws ensure high plasticizing performance and wear protection at output rates of up to 270 kg/h for pipe and 150 kg/h for profile. Maintenance-

free AC motors, efficient barrel temperature control and proven screw core thermoregulation ensure easy handling and long lifetimes. The leanEX series comes with the BC Compact control, which has a 12 inch screen with an intuitive user interface for simple data entry. At Chinaplas, the leanEX 2-58R-CL model was exhibited at the booth. After the show, this machine went to a Chinese pipe manufacturer.

Pic. 3:PE gas pipes produced with the soLEX 60-40-C



State-of-the-art equipment for thermoforming sheet and technical PVC sheet

battenfeld-cincinnati also offers a wide range of equipment for the production of thermoforming sheet for food packaging, such as the high-speed extruders and the Multi-Touch roll stacks that ensure excellent product quality even at high line speeds.

For technical PVC sheet, which is used in protective covers, as decorative sheet or for laminating credit cards, planetary roller extruders with outputs of up to 4,000 kg/h are available.

► battenfeld-cincinnati China
www.battenfeld-cincinnati.com/china

Multilayer pipe heads are established in the market since many years.

The number of layers are depending on product and application from 2 up to 7.

Usually a multilayer head is designed for a certain pipe structure and is used just for this structure only. Quite often pipe head manufacturers are asked about flexibility in using the head for other layer structures and unfortunately the answer is in most of the cases that the particular head is not designed for this kind of flexibility



Multipurpose Multilayer Pipe Head – a new System for more Flexibility in Pipe Production

CONEXTRU has developed a pipe head system which can be used for a quite big range of layer structures as well as with different materials.

As an example here the range of structures: A/A/A, A/B/A, A/A/B; A/D/C; C/A/B

The materials are: A - PE or PP; B - PE or PP Regrind; C – PA or PVDF or PET, D- Adhesive.

Pipes for Monolayer PE for water and gas, 3 layer PP-H for sewer pipe, 3-layer PE with regrind, 2-layer

PE with PP protection layer, 3 layer for fuel transportation and some more.

One of the important requirements for flexibility is that the position of each extruder must be same for all pipe structures. Only a short longitudinal movement of few centimetres are allowed – only for mounting to the head.

Of course the extruders must have this flexibility in terms of processing different polymers without changing screw. The extruders are optimised for that and instead of highest output – wide processing range is required.

This can be achieved if extruder has corrosion resistance screw and barrel for processing corrosive polymers, have barrier screw design for and temperate grooved intake which can be operated at high temperature if needed. Gravimetric system for output control is also a must in case of co-extrusion at different output levels.

The multilayer head have adapter connection which allows that the extruder can keep the position as it is by extruding different layer structure. But how this is possible?

This is possible if in between the multi spiral channel head and the extruders is an adapter block which brings the melt of each extruder to the right distributor of the head.

For each layer structure – as shown before – is a special adapterblock designed.



The adapterblock works like a feedblock bringing the melt A from extruder A to the inner or middle or outer layer depending on the product.

If the layer structure has to be changed because of a new product than the foreseen adapterblock has to be mounted in between extruder and head.

The multilayer head has 4 different spiral distributors. They are designed for best melt distribution for low viscosity polymers like PVDF, PA, EVOH or Adhesive as well as for high viscosity materials like PE 100 RC types or PP high modulus types.

The run different layer thickness and a wide range of layer ratios inside to outside or in the middle – the melt merging area has to be designed for. In our particular case – mentioned before – we have a wide range of viscosities. High shear stress as well as high flow speed differences at the border in between two layers must be avoided to prevent flow anomalies. Flow anomalies are visible as waves or shown by penetration of polymer B into Polymer A as an example CONEXTRU calculate based on rheological data's shear rate, viscosity, flow speed at the melt merging point for the required melt structure and design the gaps at merging point accordingly to avoid high shear stress.

For best tempering of the head outside ceramic heaters are installed – with isolation if needed and with higher installed power in case for running PET or PA at high temperatures.

Inside the head is heated as well and also there is an option to cool them by air – if needed (IHC internal head cooling) can be used. The inner parts is sealed to all openings and the air is brought by tubes into this area and brought out from that area. The air flow is low and generated by small blower.

Not all multilayer pipes can be produced with same die design so it's sometime needed to have specific die design depending on the pipe product.

However the system works with a master die set which is placed in the centring unit. On this master die set – so called add on die sets can be mounted. The horizontal die set change combined with segmented



mandrels makes the system further flexible and user friendly.

If colour stripes are required than the best option is to apply them via a CSR colour stripe ring mounted at die end.

For corrosive materials it's recommended to use stainless steel for all parts which may come in contact with corrosive polymers. A complete chromed version of the head and adapter blocks would be an alternative – which is in the same cost level as stainless combined with nitration steel

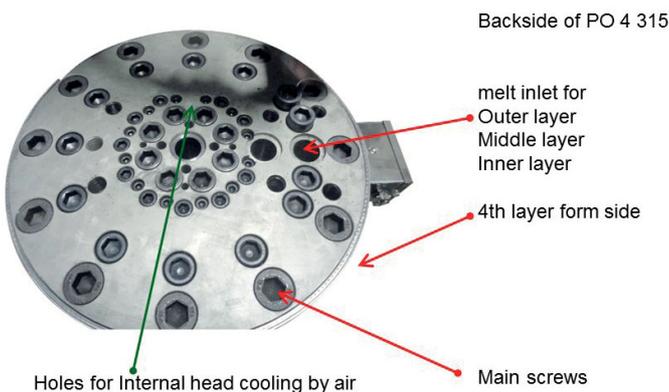
Cleaning is a big issue in case of using different polymers. Extruders can be cleaned just by running the material thou the barrel – without connected to the adapter block. The adapter block is a small light weight part which can be cleaned by hand or by a burning process.

The cleaning of the head can be done either just running the new polymer thru. This pre melt distribution as well the spirals have low volume and low flow channel surface and a good self-cleaning behaviour. This makes this method possible.

Another option would be to clean the head form polymer by dismantling and cleaning by hand. The head can be motorised turned into backside up and die set down position. At this position each distributor can be pulled out up wards by crane and then a good access for cleaning is given.

The author:

Josef Dobrowsky, CONEXTRU GmbH



CONEXTRU GmbH
Klosterstr. 19, 3011 Tullnerbach, Austria
www.conextru.eu

Double the Demand for Edge Trim Recycling

Andreas Dirnberger, Business Development Manager for Inhouse Recycling, in front of the INTAREMA® K edge trim specialist



EREMA offers a fully automatic processing system for edge trim with the proven INTAREMA® K. Sales have increased by 100 per cent compared to the previous financial year. More and more producers are reducing their material costs by recycling clean production waste

*The INTAREMA® K at Coveris is in operation 24/7. 100 per cent of the recycled material is put back into the film production process.
Photo credits: EREMA*



An increase in sales of the INTAREMA® K recycling system built by the mechanical engineers EREMA had been already clear before the end of the 2017/18 financial year at the end of March. By the end of March 2018, a total of over 40 of these processing systems had been shipped within twelve months – twice as many compared to the previous financial year. According to Andreas Dirnberger, the fact that customers are concentrating more on the recycling of clean edge trim can be explained largely by the increasing demand for high-quality film products and the associated expansion of production capacities. The Business Development Manager at the EREMA Group says that the INTAREMA® K's road to success comes from its profitability: "The material alone accounts for around 80 per cent of the manufacturing costs of flexible packaging. If you consider the usual edge trim figure of around 10 per cent in blown film manufacturing, recycling is a must-have in terms of cost efficiency." The edge trim which accumulates in production can be transferred directly from the blown film plant – without pre-shredding – to make high-quality recyclates. And 100 per cent of these recyclates can then be put back into the produc-

tion process. "Thanks to the INTAREMA® K the film manufacturer reduces both material and production costs considerably as a result," says Dirnberger, summing up. This is also substantiated by Manfred Goellner, Head of Process Engineering at Hosokawa Alpine, one of the largest producers of blown film plants in the world: "We expect a recycling system to work with absolute reliability and fully automatically. This is why we have a machine built by EREMA in use in our inhouse technical centre and also recommend that our customers count on the INTAREMA® K."

Perfect payback period

The INTAREMA® K is available to OEM customers such as Hosokawa Alpine as part of standardised system packages but there is also high demand for it among end customers. The Austrian company Coveris Flexibles Austria has been regarded as a specialist in film production for over 50 years. The company runs blow and cast extrusion lines, printing and finishing machines and 20 recycling systems from EREMA in Kufstein, Austria. "We have been using fully automatic edge trim processing systems from EREMA for many years," says Ferdinand

Mikesch, Head of Process, Engineering & Technology at Coveris: "Not least because the payback period for the compact systems is very short."

INTAREMA® K – fully automatic and flexible

The INTAREMA® K is ideal for the processing of a wide variety of clean plastic waste. PE mono or multilayer films, PE films with PP, PA, EVOH or EVA or also breathable films such as PE with calcium carbonate can be processed. A low mass temperature ensures very gentle processing of the polymer. Thanks to the interplay with integrated control the INTAREMA® K's preconditioning unit enables automatic adjustment to varying input quantities. In the event of brief material shortages the system switches to standby in the interest of maximum energy efficiency.

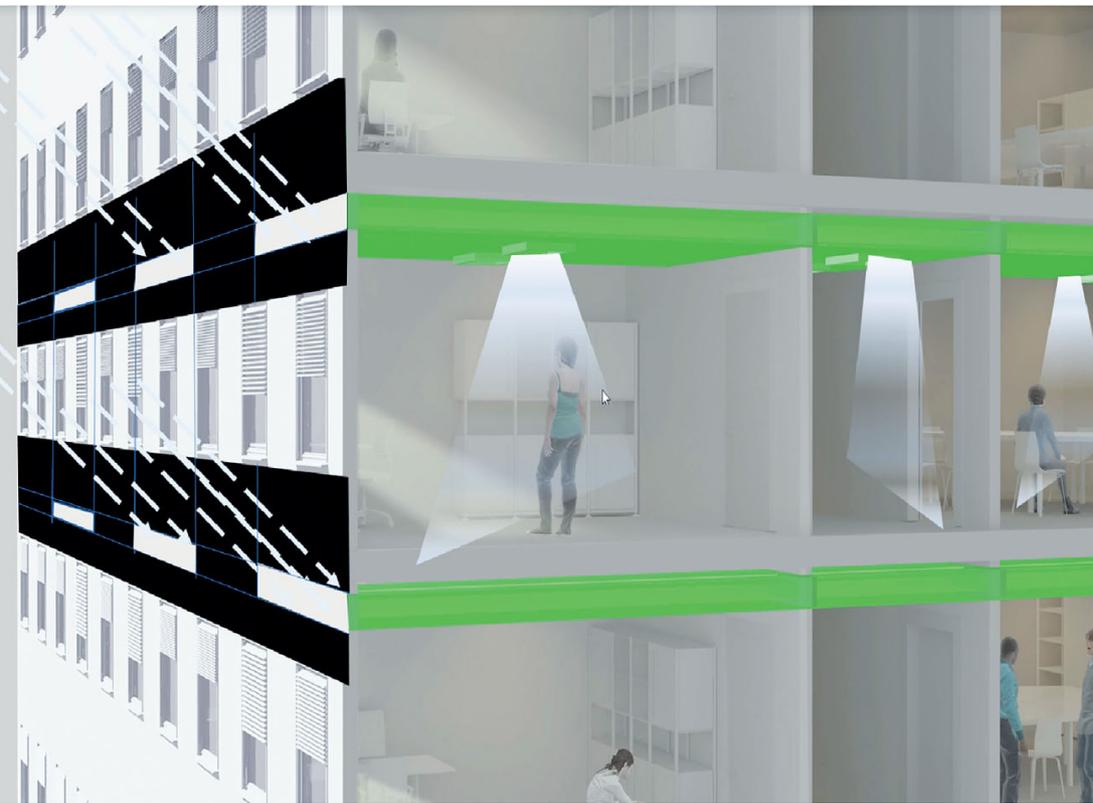
EREMA
Engineering Recycling
Maschinen und Anlagen Ges.m.b.H.
Unterfeldstr. 3, 4052
Ansfelden, Austria
www.erema.com



BASF presented innovative daylight management system with a 1:10 scale model on display at the Light + Building trade fair in Frankfurt/Main, Germany

Innovative Light Guidance System illuminates Windowless Rooms

How can natural daylight be brought into building interiors so even windowless rooms do not need artificial light during the day? And how can sunlight be used optimally behind glass facades without creating glare? BASF has found a smart solution to these two problems. The system is based on the principle of light guidance and comprises three components: a film, a light shaft and light fixtures. The film is embedded in insulated glass and optimally guides the light from there into a light shaft containing reflective film. The shaft brings sunlight deep into the interior of a building, where light fixtures shine the daylight into the rooms. These light fixtures are also equipped with LED lamps that provide light in the rooms when natural daylight is unavailable or insufficient



The daylight management system is based on the principle of light guidance and comprises three components: a film, a light shaft and light fixtures

Human centric lighting concepts

Human centric lighting (HCL) refers to holistic lighting concepts that put the emphasis on humans and their well-being. HCL encompasses the visual, emotional and biological effects of light. BASF's daylight system can contribute to improving spatial quality in places such as schools, hospitals, shopping malls and office buildings. Because people feel better in natural light, they concentrate better, are more motivated to work and less likely to get sick. Furthermore, using natural light over the course of the day enables artificial light usage to be reduced by significantly more than half. The consulting firm A.T. Kearney has calculated that the benefits of HCL to the general public could be as high as €870 million in Europe in 2020.

Wide range of design possibilities for architects

This system enables daylight to be transported far into the interior of buildings without requiring any additional structures on the facade. Inside the building, the system can be used flexibly – either concealed within a suspended ceiling or as a visible element as part of the interior design of the building. Through the light fixtures, daylight can penetrate into areas far from windows as well as hallways and rooms without natural light. The system can be integrated into existing facades

and new facade concepts without limiting design options. In addition, it creates possibilities for new design concepts, such as office environments with working and lounge areas that include natural green zones to improve quality of life.

From idea to market-ready system solution

The idea for the daylight management project emerged during the Creator Space™ program put on by BASF in 2015 to mark its 150th anniversary. Based on this idea, teams from Switzerland explored the topic of light and energy inside buildings. Together with BASF experts from various specialist units, they created a concept that became an incubation project and was developed into a market-ready system solution. An initial prototype is already being used in the headquarters of Bartenbach GmbH in Austria.

BASF SE
67056 Ludwigshafen, Germany
www.basf.com,
www.basf.com/daylighting

*PURITY CONCEPT V for automatic,
optical inspection of plastic material*



Optical Offline Inspection and Analyzing System PURITY CONCEPT V launched

Intelligent combination of light table and automatic material control

PURITY CONCEPT V (Visual) from SIKORA is an innovative offline system for optical inspection and analysis of transparent and colored plastic pellets by means of an intelligent light table. The material to be tested moves automatically through the system and contamination such as black specs are visualized. The system is suited for sample testing of produced material or for incoming goods inspection.

Until now, sample testing of pellets has been carried out mainly by means of light tables. The material to be tested was optically illuminated on a table and manually inspected by the operator. This method depends on the examiner and provides a limited repeatability. Additional limitations are the size of the contamination visual by the human eye as well as the classification by size. Alternative optical offline inspection devices feed the test material into a hopper and through a channel into the inspection area. Thereby, images are recorded successively and contaminated material is sorted out. Due to the blending of the sorted out material, a clear allocation of the con-

tamination to the graphic material as well as a follow-up inspection are impossible.

PURITY CONCEPT V contains the advantages of a light table, complemented by an automatic offline material control. The intelligent system moves the test material on a tray through the inspection area. Within seconds, the material is inspected automatically by the color camera and contaminated material is marked directly on the sample tray by a projector. By analyzing the recorded images, contamination on the surface of transparent and colored material are detected automatically, visualized and evaluated. A clear allocation of the contamination and follow-up inspection are possible at any time. Thus, the system contributes significantly to quality control and process optimization.

SIKORA AG
Bruchweide 2, 28307 Bremen, Germany
www.sikora.net

New Pellet Dryer

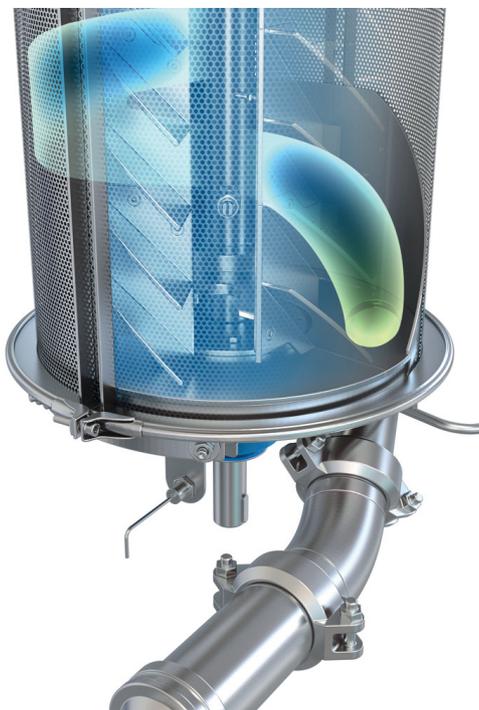
A new-design pellet dryer for use with Nordson Corporation’s BKG® pelletizing systems meets the challenge posed by the steady growth in use of glass-filled and other abrasive materials by substantially reducing the time and cost associated with replacing “wear” parts.

The design reduces the number, complexity, and cost of the dryer components that are subject to abrasion and makes them more accessible to maintenance or replacement. While the new dryer has much the same overall appearance and footprint as a standard BKG dryer and provides the same throughput, there are substantial differences in the configuration of components subject to wear. The new design reduces production downtime by simplifying maintenance, making it possible for one person to carry out maintenance tasks.

“We have seen a reduction in maintenance times by up to 70%,” said Matthias Köhler, operations manager at the Domo Engineering Plastics GmbH facility in Premnitz, Germany. “It is now possible to determine concrete maintenance intervals, so downtime becomes more plannable and less unexpected.” Domo, an initial user of the new pellet dryer, installed the unit on an existing underwater



BKG® Pellet Dryer



Rotor within Pellet Dryer

pelletizing line that processes polyamide 6 compounds with up to 50% glass fiber content.

Frank Asmuss, Nordson global product manager for BKG pelletizers, cited a number of design enhancements for reducing wear or simplifying maintenance:

- Pellet inlet. “As a result of a new design made in accordance with flow simulations, the inlet now enters the dryer housing tangentially, reducing the impact on all parts in the lower part of the dryer, and allowing quick access to all remaining wear parts,” said Frank Asmuss.
- Rotor. Due to the optimized pellet inlet, the rotor has been simplified, especially in the lower area, and wear is minimized by the reduced impact of abrasive pellets. Other measures taken to reduce or eliminate wear from pellet flow include a new cover plate design and counter-sinking of screw heads.
- Pellet outlet. The new design includes fewer wear parts, and these are more accessible. Disassembly / reassembly time has been reduced from 6 hours to a range of 1 to 4 hours.

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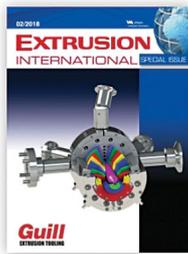
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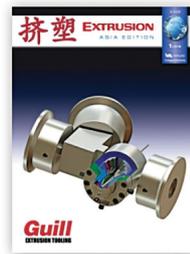
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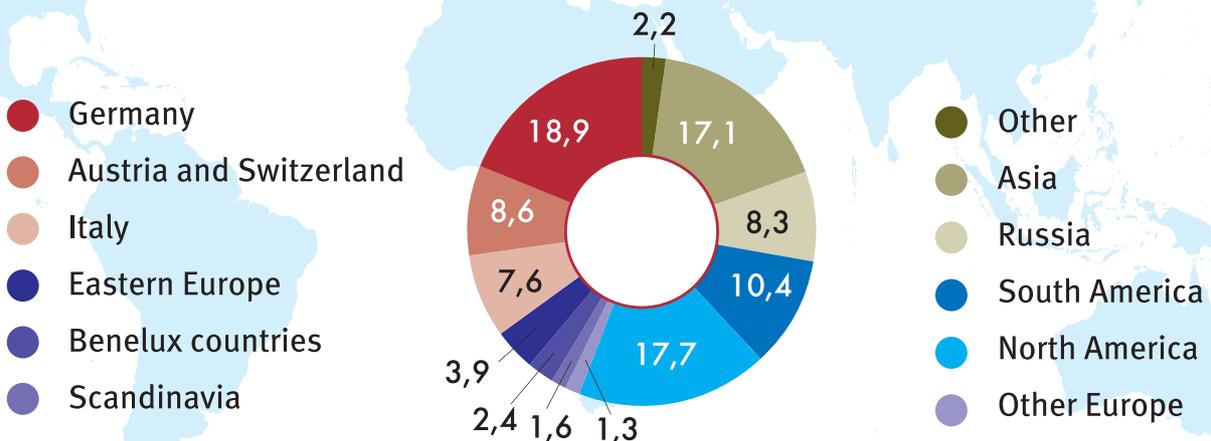
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