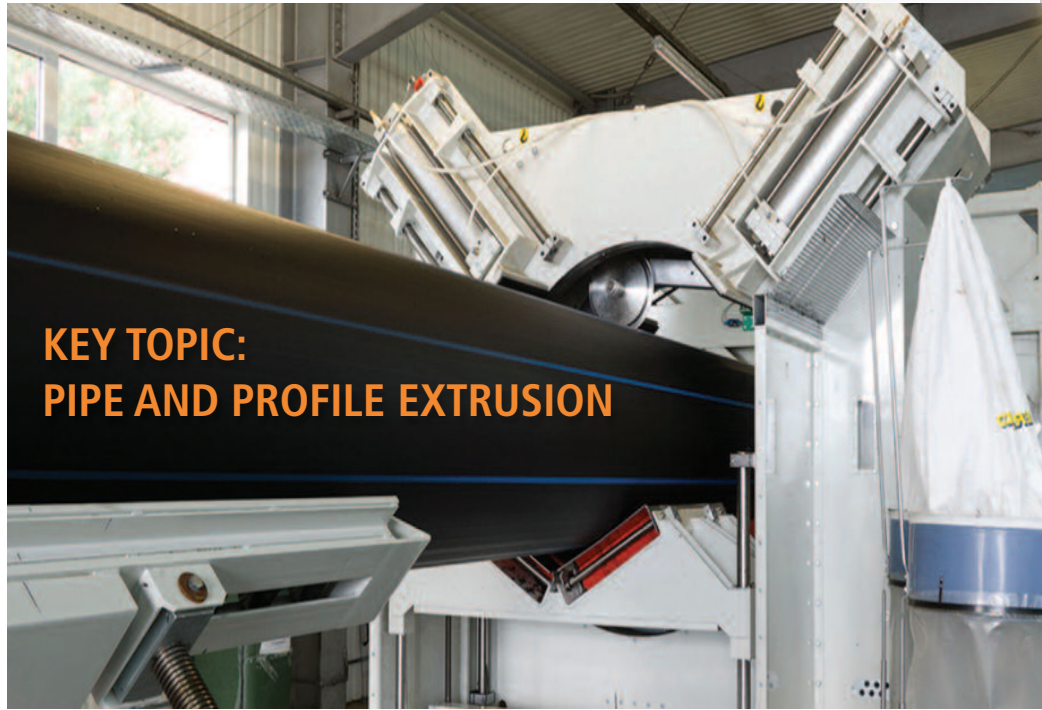




EXTRUSION INTERNATIONAL

ONLINE



KEY TOPIC:
PIPE AND PROFILE EXTRUSION



The NEW generation of cutters for profiles



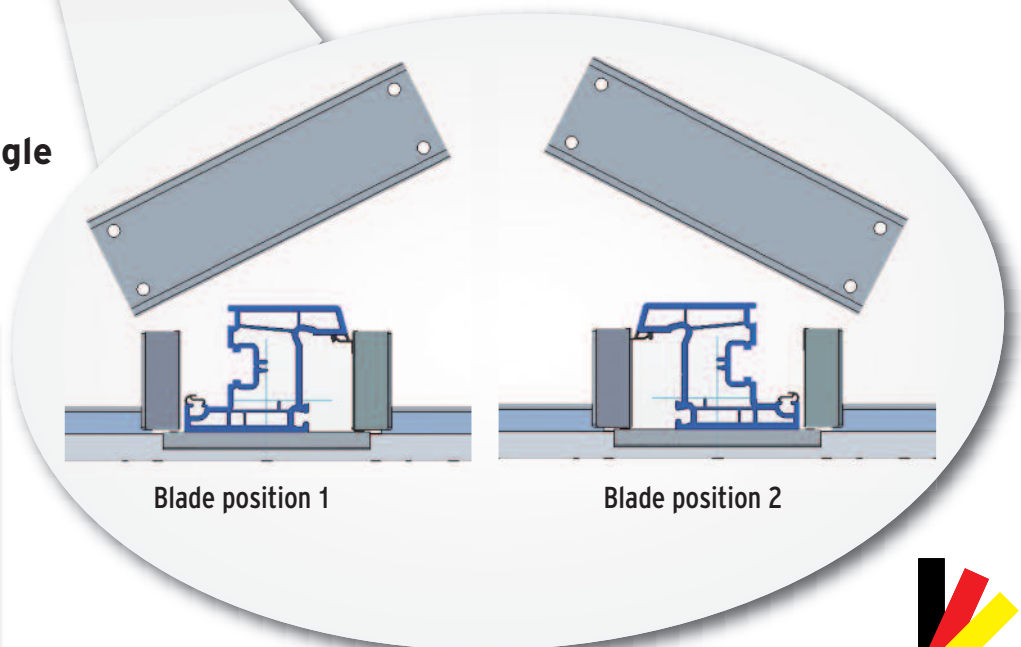
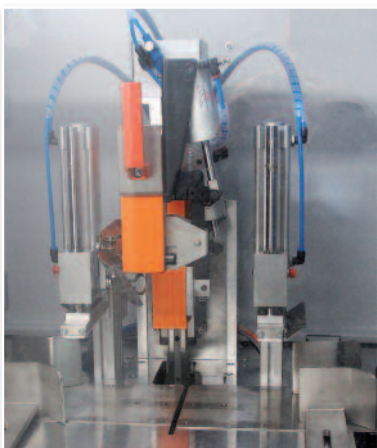
- Mirrored changing of the cutter angle during running production
- For optimised cutting of the respective profile
- Changing within 10 to 15 seconds, between two cuts
- Without loosening screws, by hand, with pneumatic clamping device using two retaining cylinders
- Sensational price thanks to increasing demand and manufacturing in large quantities

The cutter was manufactured for the first time in 1998 and in constant use throughout the world. They offer the absolute best cutting quality for glass strips, small profiles, main profiles and technical profiles.

Additional devices such as automatic film wrapping, measurement wheels for precise length determination or lettering with inkjet or laser printers can be attached.

PTW-200
changeable cutting angle

Cutting Unit



Hall 16
Stand F06



Made in
Germany

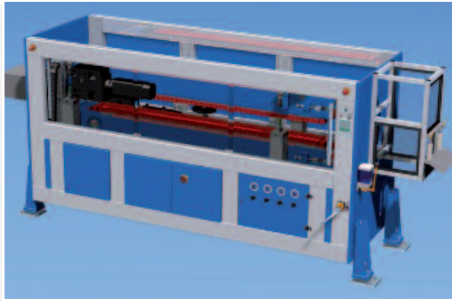
EQUIPMENT FOR EXTRUSION



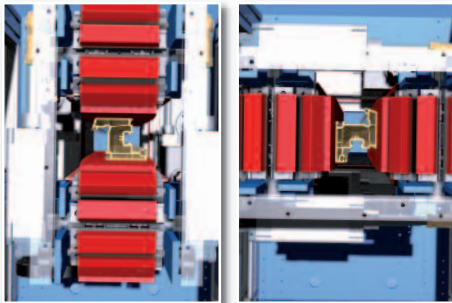
FOR PROFILE EXTRUSION LINES



Calibration table KTS 01,
rear



Caterpillar
Haul off



Haul off
rotating 90°



PRO 63
automatic stacker

FOR SHEET EXTRUSION LINES



Calender



Roller withdrawal AZ 8,
outlet side



Slitting RB 2 with four
sawing stations




Transverse separating
cutter QSS, inlet

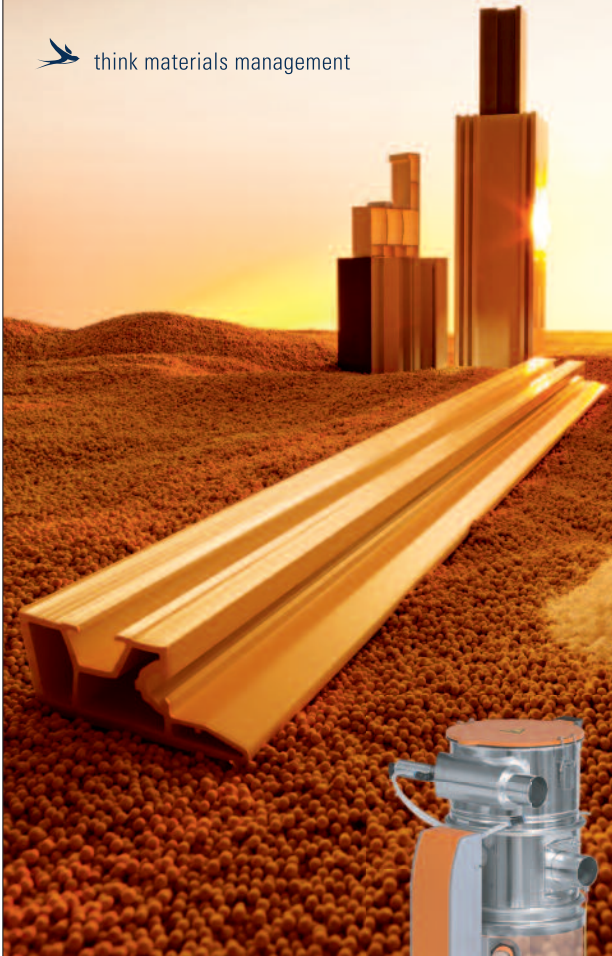
„STEIN BLUE-LINE – for a sustainable future“
stands for sustainable and energy-efficient equipment.
Almost 100% domestic production and the high degree
of manufacturing penetration guarantee compliance with
even the most stringent of demands.

**STEIN Maschinenbau
GmbH&Co.KG**

Wartbachstr. 9
D-66999 Hinterweidenthal/Germany
Tel. +49/63 96/92 15-0
Fax +49/63 96/92 15-25
stein@stein-maschinenbau.de ·
www.stein-maschinenbau.de

COMBINING THE BEST OF TWO WORLDS

 think materials management



METRO-G - Central conveying systems

Probably the most comprehensive and flexible raw materials conveying system for granulate on the market today. By taking the best from two of the most established conveying product lines - colortronic and motan. The new METRO G range has been designed like a tool box so that the solution we put together for your production is as perfect a fit as is possible.

motan-colortronic gmbh
info@motan-colortronic.de

www.motan-colortronic.com



Content

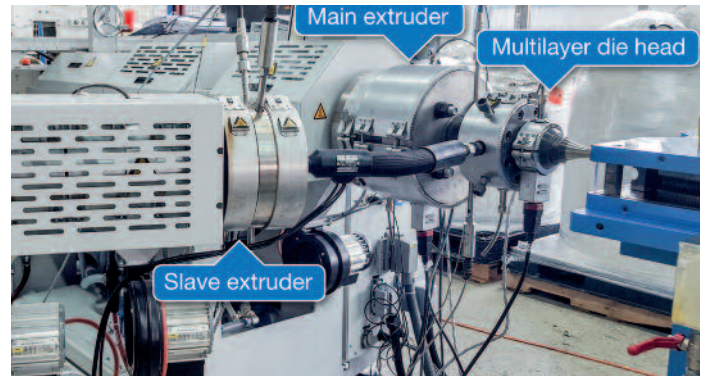
Firms in this issue	6
Imprint	7
Bulgarian Plastchim-T invests in the world's largest BOPP line	8
Energy saving with KRELUS IR-Heaters	11
New division manager for washing lines	11
The 50th Anniversary of a Success Story	12
"Beyond slitting and winding"	12
Maag Expands Service Footprint in Southeast Asia	14
Simply Better Together	14
Successful entry into new Chinese growth markets	16
Solutions for the plastics processing	17
New Quaffer Shot-Tail glass	17
Houses made of WPC profiles	18
Extrusion Plant for Thermal Break Profiles	21
A succes story for China - made in China	22
PVC-O pipes and sustainability	24
Largest PO pipe line in Romania	26
Pipes for Sub-Saharan African Markets	28
The leading edge that always connects	30
1200 pipe sockets per hour on a quadruple extrusion line	31
Extrusion Line for Multiplayer Pipes Production	32
Innovative Multilayer Extrusion Tools	33
Prepared for the Future - Restructuring successfully completed	34



KraussMaffei Berstorff will present a single-screw extruder in the 30D Series (KME 60 –30 B/R) with newly developed screw geometry. This extruder is produced in China specially to meet the requirements of the local market for PP-R processing. On the occasion of Chinaplas KraussMaffei Berstorff will open the plant of the KraussMaffei Group in Haiyan on April 26, 2016.

Customers and interested parties will see a live demonstration of the production of twin-strand PP-R pipes (diameter between 20 and 40 mm).

Page 22



UNICOR is known around the world for its advanced corrugation technology and components. But the German company is also a leader when it comes to die heads for extruding corrugated pipes. Alongside its existing die heads, such as those for the production of wastewater and drainage pipes with diameters up to 1800 mm, the company is now releasing two new die head systems for multilayer manufacturing.

Page 33

Waterless DMS-technology for energy-efficient mould area dehumidification	36
Sage and dry	40
New Range makes its Debut	41
Low Built Base granulators for sheet and film	43
New generation winders	44
Precision Speed and Length Measurement	45
Favourable climate for the plastics industry	46

CONEXTRU ENGINEERING FOR EXTRUSION

You need a new tool for your new pipe product?

- quick and at low cost – specially made for your request
- in mono- or multi-layer or for coating in your current pipe production

You want to modify your existing tools to multilayer and for internal pipe cooling, to make a new product?

Then **CONEXTRU GmbH** is the partner for you – the most experienced company in pipe tool design.

The development of new tools for pipes is our profession and passion – for more than 25 years.



Extruders & Extrusion facilities

in stock • functionally tested • operational

Visit our homepage
with many used machines for the
plastic extrusion business:

www.pmh-extruder.com

eMail:

pmh.gmbh@t-online.de



Plastic-Maschinen-Handelsges. mbH

Broichhausener Str. 4 · D-53773 Hennef

Tel. +49-2244-83041 · Fax +49-2244-83045

Index of Advertisers and companies referred in this issue

A MUT Group	16+	M&H Plastics	17
b attenfeld-cincinnati	15+18+26	Molecor	24
BEKUM GROUP	34	motan-colortronic	4+40
Blue Air Systems	36	O ldenburg Kunststoff-Technik	14
Brueckner	8	P iovan	7+41
C onextru	5	pmH	6
F dm	7+41	R apid	43
Friul Filiere	21	Reifenhauser Blown Film	16
G reiner	30	Reifenhauser Group	16+44
H erbold	11	S ica	31
i llig	23	Stein	U2+3
K ampf	12	T echnomatic	28
K Online	46	TehnoWorld	26
Komax	17	Troostwijk	19
KraussMaffei Berstorff	12+22	U nicor	33
Krelus	11	W eber	9+10
M aag	14	Z umbach	13+45



The Extrusion International Digital/Print Magazine is published bimonthly by VM Verlag GmbH. P.O.Box 410907, D-50869, Cologne, Germany

EDITORS

Alla Kravets (Project Manager, Digital Content)
Tel.: +49 2233 3909090
a.kravets@vm-verlag.com

Bettina Jopp-Witt (Content Coordinator)
Tel.: +49 221 5461539
redaktion@vm-verlag.com

Yury Kravets (Managing Editor)
y.kravets@vm-verlag.com

ADVERTISING SALES

Inge Boehle (Sales Director)
Tel.: +49 721 700626
i.boehle@vm-verlag.com

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

Elena Beckmann
Tel: +49 0511 52487810
e.beckmann@vm-verlag.com

Reprints, Translation etc

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photographic, recording or otherwise, without prior permission of the publisher.

www.extrusion-info.com
www.plastic.expert



High precision gravimetric blender for extrusion application



GDS 7

Gravimetric Dosing System

- Suitable for pellet, flakes, regrind, additives and powder
- Suitable for single and twin screw extruders
- Total 7 components
- Extruder and haul off control
- Siemens control
- Operator friendly design

Fdm

A Pivov Company



fdm.pivov.com



ROSPLAST 2016

15. – 17.06.2016,

Moscow / Russia

► ООО «ЭМГ»

www.rosplast-expo.com

ROSMOULD 2016

15. – 17.06.2016,

Moscow / Russia

► ООО «ЭМГ»

www.rosmould.com

19th PPPEXPO Africa 2016

12. – 14.07.2016,

Dar-es-Salaam / Tanzania

► EXPOGROUP

www.expogr.com

4th Myanmar Int'l Plastics

15. – 18.07.2016,

Yangon / Myanmar

► Chan Chao Int'l Co.,Ltd

www.myanmar-expo.com

TAIPEI PLAS 2016

12. – 16.08.2016,

Taipei / Taiwan

► Nangang Exhibition Center

www.taipeiplas.com.tw

K2016

19. – 26.10.2016,

Duesseldorf / Germany

► Messe Duesseldorf GmbH

www.k-online.com

Bulgarian Plastchim-T invests in the world's largest BOPP line

■ A working width of 10.4m, speeds up to 600m/min and an hourly output above 7,600 kilo: these are the key figures of the world's largest BOPP film production line which has now been acquired by Bulgarian film producer Plastchim-T. With a future total output of more than 110,000 tons of BOPP films per year, Plastchim-T further strengthens their position as one of Europe's leading packaging manufacturers. The new line is an investment in the future, as Managing Director Beyan Faik says: "We strive to make our company fit for the next generation. This highly productive line bears enormous potential and is a perfect complement to our existing BOPP line park. We now have a broad portfolio of Brückner lines in working widths of 4.2m, 6.6m, 8.7m and soon 10.4m – with this equipment we will be able to react very flexibly to the markets' fast changing demands and can offer various films grades in small or large lots, even on short notice." Such flexibility combined with a broad film portfolio, high quality standards, a well-developed sales and service network and an advantageous location on the Black Sea coast has made Plastchim-T's development a remarkable success story within Europe's film

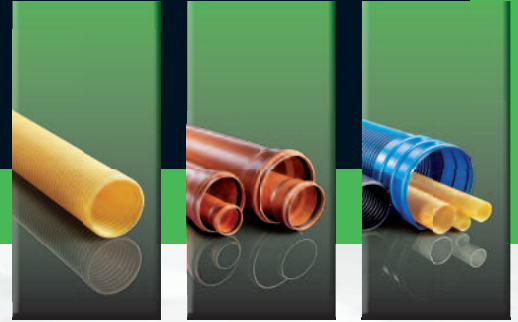


In the middle of Plastchim-T's team: Aydan Faik, Managing Director Plastchim-T (middle); Beyan Faik, Managing Director Plastchim-T (right); Faik Faik, Deputy Director Sales and Logistics Plastchim-T (left); Helmut Huber, CEO Brückner Maschinenbau (second left), Peter Mertes, Senior Sales Manager Brückner Maschinenbau (second right)

industry over the last years. For the 10.4m line a completely new factory will be built, fulfilling highest demands regarding efficiency, operation costs, material flow, logistics and energy consumption. Brückner Maschinenbau is proud to have found with Plastchim-T an optimal partner for this historical step: Increase of today's production speeds of 500-525m/min up to 600 m/min in a defined period of time. Plastchim-T's latest line features a high speed machine direction orienter (MDO), a new sliding chain track system, a tailor-made surface treatment system and a special winding concept, both for highest speeds. Another highlight is Brückner's linear motor technology for the line's better running stability.

► www.brueckner.com

Pipe extrusion



The new DS 32 D series: Maximum performance for PVC pipe extrusion

WEBER
High Performance
DS 32 D Series

Once again WEBER set new standards in extrusion technology. The new extruder series DS 32 D, equipped with powerful drive technology and innovative screw technology, provides new impetus for PVC pipe manufacturing.

Advantages of the *High Performance* DS 32 D series

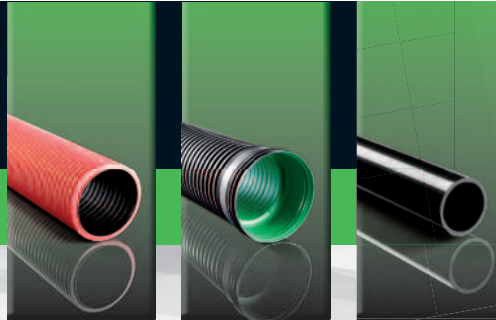
- Compact, robust gearbox technology in WEBER quality
- High outputs even with smaller L/D ratio's
- More flexible applications through larger range of output
- Easy processing of high content PVC plastics
- Improved product quality even when using recycling materials
- Processing of cold mixtures



www.hansweber.de

WEBER

Pipe extrusion



NE 7.40

The NE 40 D series: Maximum performance for polyolefin pipe extrusion



WEBER have been building grooved bush extruders for more than five decades. A unique *High Performance* range was developed especially for extrusion of HDPE and PP pipes.

Advantages of *High Performance* NE extruders

- Long effective life of grooved bush and processing unit through lower grooved bush pressure
- Constant output across the entire speed range
- Lower melt temperature compared to older machine concepts
- Output increase by up to 40 %
- Reduction of energy consumption
- Reduced water cooling of the grooved feed bush and new drive concept
- Torque motor optional



Hall 16
Stand F06



WEBER
GREEN
TECHNOLOGY

Hans Weber
Maschinenfabrik GmbH
Bamberger Straße 19 – 21
96317 Kronach · Germany
Post Box 18 62
96308 Kronach · Germany
Phone +49 (0) 9261 409-0
Fax +49 (0) 9261 409-199
info@hansweber.de
www.hansweber.de

WEBER

Energy saving with KRELUS IR-Heaters

■ For more than 40 years, KRELUS have been specialists for Infrared-heaters. With the emphasis on the special high performance IR-heaters based on an innovative technology, KRELUS customers have a competent partner for both standard and custom made heating solutions.

Alongside many more applications some of the interesting areas are:

- Heating of composite materials from carbon-/glass-/natural-fibres containing a matrix of PP/PA/PEEK/etc.
- Embossing of PVC/PA/etc.
- Thermoforming
- Coating of paper, foils, metals, films and textiles
- Lamination of a wide variety of materials
- Pre-drying and heating equipment.

The superior, innovative KRELUS technology applies direct radiation heat from its resistance source to the product (without any glass quartz or ceramics). High thermal insulation materials prevent heat loss from the reverse side of the heaters. The very rapid response time of the KRELUS medium-wave IR-heaters allows operations with precise temperature control on the product surface and they can be switched instantly ON and OFF even for short production breaks.

Most products (thermoplastics/paper/textiles) absorb heat energy in the medium wave range ($\pm 3,0 \mu\text{m}$) extremely well.

The emission range of the KRELUS-IR is perfectly matched to these absorption ranges. This fact leads to a higher efficiency and con-



sequently to cost savings in comparison to traditional standard heaters.

KRELUS IR-heaters are available in standard modules in a variety of sizes and capacities. Custom made solutions are available up to approximately 8,000 mm in a single piece. The modular sizes facilitates individual control zones of various dimensions or to manage uniform temperature profiles in continuous processes.

► www.krelus.ch

New division manager for washing lines



■ Achim Ebel, the former associate and general manager of B+B Anlagenbau GmbH has joined Herbold Meckesheim GmbH as division manager for washing lines. Herr Ebel has many years of experience in conception, manufacture, supply and operation of plastics recycling lines. He can profit from his knowledge gained in plant engineering and his experience as an operator of such lines in an executive position in the waste management industry. Herbold Meckesheim GmbH has been one of the market leaders in this field worldwide for decades and reinforces their advisory competence and practical knowledge with this appointment.

Achim Ebel

► www.herbold.com

The 50th Anniversary of a Success Story

■ Krauss-Maffei Corporation, the US subsidiary of the KraussMaffei Group with headquarters in Florence, Kentucky, celebrated its 50th anniversary on May 18 and 19 with more than 400 customers. The company has grown continuously since it was founded in 1966 and has established itself as a leading provider of machinery for plastics and rubber processing in the North American market. It currently represents the three brands: KraussMaffei, KraussMaffei Berstorff and Netstal. Following a very successful financial year in 2015, Krauss-Maffei Corporation expects further growth in 2016.

One of the pillars of growth is the construction industry and the bulk chemical sector are Krauss-Maffei Corporation's. In these areas, extrusion technology system solutions are particularly in demand, especially for the production of roofing sheets, foamed insulation panels as well as pipes and profiles. In the field of



Inside the TechCenter of the Krauss-Maffei Corporation (extrusion technology) during the open-house event

compounding, the twin-screw extruders of KraussMaffei Berstorff's new, energy-efficient ZE Blue Power series have impressed many.

► www.kraussmaffei.com

"Beyond slitting and winding"

A KAMPF bestseller: The Conslit offers highest flexibility



■ *Slitting and Winding Machines:*

At DRUPA 2016, KAMPF will present a comprehensive range of products in the area of slitting and winding technology for web-shaped materials. Visitors to the show will be informed about latest developments, which are already been realized in part within the KAMPF slitting and winding machines.

With the slogan "Beyond slitting and winding" KAMPF as the leading manufacturer of slitting and winding machines meets the challenge of requirements and needs by the market of comprehensive information on productivity and efficiency of the machines and processes as well as on the quality of the final products. We look beyond the limits of the machines. Modern, intelligent controls and the possibility of networking with other systems and machines in the process chain are al-

ready possible today. At DRUPA KAMPF transmits an impression of the systematic approach to the development of cross-process and safer solutions for the smart production landscape of the future.

The team from our KAMPF Lifecycle Service will report on new products from the comprehensive range of services and focuses on the KAMPF Academy with its individual courses.

The company Kampf LSF, a 100 % subsidiary of KAMPF, stands for technical innovations in the manufacturing of special machines and plants. The LSF experts will present its extensive product portfolio as well as recent, innovative projects to the international audience.

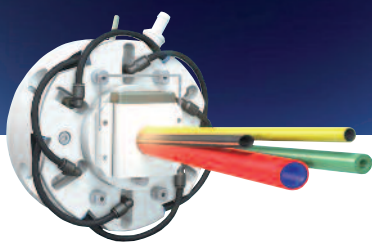
➔ www.kampf.de



Synonym for highest productivity: The KAMPF Autoslit III

Get Your Extrusion Process Under Control

Based on decades of experience in on-line measuring solutions, developing key technologies and optimizing processes, ZUMBACH is YOUR partner!



- Best price-performance ratio in the market
- Faster start-ups / Scrap optimization
- Measure and adjust concentricity/eccentricity from the very first second regardless of the materials' temperature
- Investment recovered within a few months

Zumbach
SWISS PRIME MEASURING SINCE 1957

Visit us at:



Booth 10 / E41

Learn more about our unique solutions



ZUMBACH Electronics
sales@zumbach.ch | www.zumbach.com

Maag Expands Service Footprint in Southeast Asia

■ Maag, a global manufacturer of gear pumps, pelletizing systems, and melt filtration systems, has announced the opening of a new rotor sharpening workshop at its Gala Industries sales and service center in Thailand. The new rotor sharpening service for strand pelletizers will expand Maag's service footprint in Southeast Asia, which is one of the world's fastest-growing regions for plastics manufacturing and processing. It is the seventh rotor sharpening workshop for Maag, expanding the company's capabilities beyond Brazil, China, Germany, Malaysia, Taiwan, and the U.S.

"This new sharpening center bolsters our overall effort in Thailand and Southeast Asia in general," said Thomas Willemsen, vice president of business development for After Sales and Service Centers. "This expansion will take us to another level in terms of customer service. Combined with our already existing sharpening center in Malaysia we are now able to offer our high quality sharpening service to a much wider customer base."

The new sharpening center, which opened May 1, is located at Gala Industries Thailand's Chonburi Province site, which has been in operation since 2008. The sales and service center houses a showroom for Maag's complete line of products, a demonstration center which includes a complete purpose-built underwater pelletizing system for customer trials, and additional



Thailand office of Maag/Gala

room for spare parts and inventory, and equipment sales and service. The Thailand sales and service center employs about 12 people.

Thailand is a key Asian business hub because of its strong infrastructure, large petrochemical and plastics market, and broad global automotive base.

Plans call for an open house to be scheduled in late June. Maag also announced that additional customer service offerings in Southeast Asia will be launched over the next three months.

► www.maag.com

Simply Better Together

■ Oldenburg Kunststoff-Technik GmbH closely assesses the skills of its service providers and each year selects the best supplier. NGR Next Generation Recyclingmaschinen GmbH from Austria is delighted to be named the 2015 Supplier of the Year. NGR impressed the German PE film pros with cutting edge technology, advice as a partner, and rapid service support.

Bubble wrap, foam sheets, stretch film (blown and cast-film): Up to 11,000 tons of high-quality PE films annually leave the production facilities of Oldenburg Kunststoff-Technik. At two sites in Bavaria – Chieming/Egerer and Hart – orders are not only fulfilled but are also custom-assembled. To make optimal use of the valuable PE material, much of the production equipment has been built by the company itself – based on the technical knowledge of its founder Dr Heinz Oldenburg, a trained mechanical engineer with a doctorate in plastics en-

gineering, as well as the expertise of the company's 110 experienced employees.

Continual supplier ratings show who you can count on

The high level of care and the high standards that Dr. Oldenburg and his colleagues place on their products and production machinery also apply to all the suppliers that work with Oldenburg Kunststoff-Technik. For NGR, this means that the company is not measured strictly on the technical performance of its recycling machines. Oldenburg Kunststoff-Technik continuously checks and rates punctuality, reliability of service or problem-solving skills of NGR employees. At the German PE film manufacturer, a total of three recycling solutions from NGR are in use. Two machines in the E: GRAN film series (since 2014 and 2015) provide inline high-quality recycling of film edge trim. Additionally, Oldenburg Kunststoff-

Technik invested in 2015 in an S: GRAN, for material and energy-saving recycling of bulky PE production waste and start-up lumps.

Advice as a partner creates a relationship of trust

Before the first recycling machine from NGR was put into operation at Oldenburg Kunststoff-Technik, convincing facts could be gathered at the NGR customer care center. Through state-of-the-art recycling technology, experience testing technology and an in-house laboratory, NGR studied the client material to establish a successful recycling process. Thanks to the testing in the Feldkirchen customer care center, Oldenburg Kunststoff-Technik had the technical and financial confidence in the pellets to invest in the right recycling technology.

Taking environmental protection seriously

Recycling is the ideal method for obtaining valuable plastic resources in the production process. The aim of such a recycling scenario within a company is to come as close as possible to a waste-free process. Oldenburg Kunststoff-Technik is a good example for many SMEs which have very deliberately set their sights on a circular economy. Production waste is generated inevitably in most production processes. It therefore not only makes sense financially to recycle this material. Taking on responsibility for the environment and running a sustainable business are deeply anchored and essential values for the German company.

➔ www.oldenburg-kunststoff-technik.de

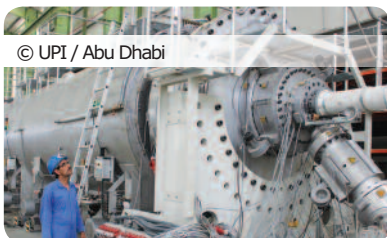


Outstanding Achievement: Oldenburg Kunststoff-Technik names NGR Supplier of the Year for 2015 (shown here: Josef Hochreiter, CEO of NGR, with Dr. Heinz Oldenburg, CEO of Oldenburg Kunststoff-Technik)



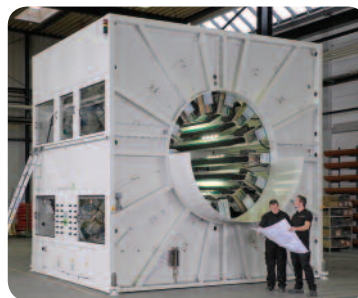
One supplier: complete system

Pipe extrusion systems and innovative line concepts from a single source



© UPI / Abu Dhabi

helix 2000 VSI-T pipe head for optimal melt distribution and homogenization



pullStream R2500 for 2.5 m pipe

Your advantages:

- Save energy and material
- Tailor-made, energy-efficient equipment
- Cooling length reduction or increase in output with same cooling length thanks to innovative PO pipe head technology
- Significant reduction in sagging
- Solutions for the largest diameters in the market (PVC up to 1.6 m, PO up to 2.6 m)

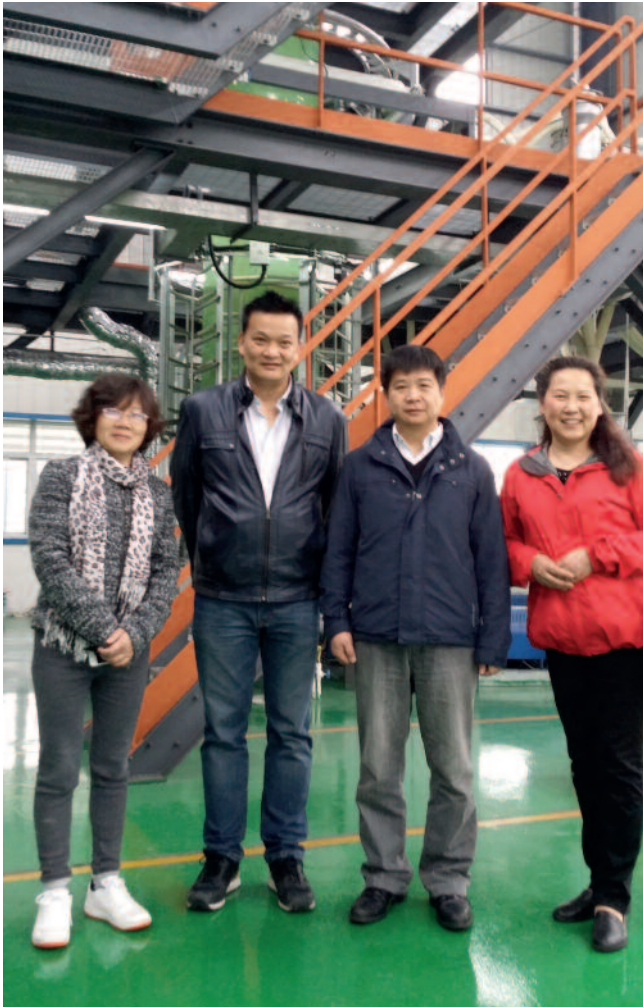


www.battenfeld-cincinnati.com * www.youtube.com/BattenfeldCincinnati



Successful entry into new Chinese growth markets

Agricultural film producer Anhui Excellent Plastic Film Tech Co. Ltd. shows that it is possible



f.l.to.r.: Mrs. Liu Xian (Share Holder, Vice-President, General Manager of Anhui Excellent), Mr. Jerry Yuan (Vice-General Manager, Technical Director of Anhui Excellent), Mr. Sheng Cheng Lin (President, Share Holder), Mrs. Fanny Fan (Sales Manager at Reifenhäuser Plastic Machinery Co. Ltd., Suzhou)

■ It is only three years since Liu Xian established Anhui Excellent Plastic Film Tech Co. Ltd. in the Chinese city of Anqing, Anhui Province. At that time, Mrs. Liu had neither any experience in the production of plastic films nor did she dispose of the necessary equipment. Her target was to become a leading film producer in China. Today, only two years after starting production, the company is on the right track to achieve this target. Anhui Excellent is one of the first producers of high-quality silage stretch film in China.

Instead of choosing a market like food packaging which has great potential, but is already crowded with many good producers, Anhui Excellent opted for a growth market that is still at a very early stage of development in China: Agricultural stretch film. The fact that this product needed a lot of know-how that did not yet

exist in China, was no obstacle for the foundress of the company. Know-how can be acquired, is the opinion of Vice-president Liu Xian. Much more important for success is good market potential, the right decision for a line and cooperation with suppliers who are more than only providers of technology. "It was clear to us that we could only be successful with excellent system technology and a partner who brings us the know-how needed for operation and production of the end products. Crucial factors for our success are the flexibility and reliability of the Reifenhäuser 3-layer blown film extrusion line and the Reifenhäuser team we opted for."

In addition to Reifenhäuser's start-up support, Anhui Excellent has taken experts from Australia on board who are already experienced in the production of agricultural film. The investment has paid off: Today, the product range includes agricultural stretch film and packaging film. By now, the company has a leading position in terms of film quality in China – an important prerequisite for future success in a strongly growing market. In 2014, the production of agricultural film in China rose by 14 percent. Over the next years, the country anticipates a further continuous increase of the production capacities. There should be no lack of consumers: Due to a constantly growing population, China is considered to be the fastest growing market for agricultural film, according to an analysis of Grand View Research.

Farmers can use agricultural stretch film to wrap hay bales. After wrapping, fermentation is triggered which has a positive effect on the nutritive value of the hay. While this technology is widespread in Europe, North America and Australia, it is still in the initial stage of development in China.

Technical data of the line Technology: Reifenhäuser EVOLUTION
 Layers: 3; width: 2200 mm; max. output: 550 kg/h
 Raw materials: LDPE, LLDPE, mLLDPE, PIB, PP, HDPE
 Products: agricultural film, packaging film, lamination film

www.reifenhäuser.com
 www.reifenhäuser-bf.com

Solutions for the plastics processing

■ AMUT GROUP has showed at the IFAT in Munich the range of solutions for the plastics materials – 100% Italian technology. Two machines would be exhibited:

1. DE-LABELLER, DLB 60 – 6000 KG/H OF PET BOTTLE CAPACITY

The De-Labeller is a dry pre-cleaning system removing full-body shrink sleeve labels from PET bottles. After the removal phase, the bottles still have a good integrity without damage or losing necks. The De-Labeller is the best solution to value bottles otherwise eliminated by sorting.

2. MOBILE BALLISTIC SEPARATOR - model SBS 201

Mounted on a flat-bed trailer, the mobile ballistic separator sorts



packaging in three different streams: flat/light fraction (PE film), rolling/heavy fraction (hemispherical shaped containers) and mixed materials for rejection. Belt conveyors remove and stack selected fractions with a folding system.

Number of paddles: 6;

Length of paddles: 4.000 mm.

AMUT is specialised to the construction of complete turn-key recycling plants for PET/HDPE/PP bottles and containers and PE film, assuring a high quality of flakes purity suitable to meet the standards for Bottle-to-Bottle and Bottle-to-Packaging applications.

► www.amutgroup.com

New Quaffer Shot-Tail glass for retail

■ As its name suggests, the new Quaffer has introduced a fun element to bars and clubs across Europe. Developed from its original glass composition and manufactured in PET by M&H Plastics, the Quaffer glass allows bars to mix various drinks in equal measure with one floating on the top of the other, creating a novel drinking experience and allowing the drink to mix as it is drunk. Sales of the Quaffer have been exceptional with bars reporting up to 600% increase in sales of drink that are suitable for the glass. The use of PET Polymer to produce the Quaffer suits the market well as it provides both a safe and a glass-like quality. Using PET also allows the customer to easily clean the glass and re-cycle when it has reached the end of its usable life. The design of the new glass has also been developed to accommodate a snap-on cap and separator plunger - enabling a filled retail product to be marketed, whether alcohol based or for mixed liquid condiments. A range of enticing flavour combinations have been created to attract a range of customers including a healthy herbal energy drink.

► www.mhplastics.com

HELIBAR® TECHNOLOGIE

Multi Strand Extrusion Line

- One step multi-extrusion
- High flexibility
- Few floor space



2, rue du Maine - 68270 WITTENHEIM
Tél. + 33 3 89 64 36 19 - Fax + 33 3 89 64 21 78

www.komax.pro
info@komax.pro



The extrusion line with the fiberEX 93-34D extruder, on which an H profile was produced

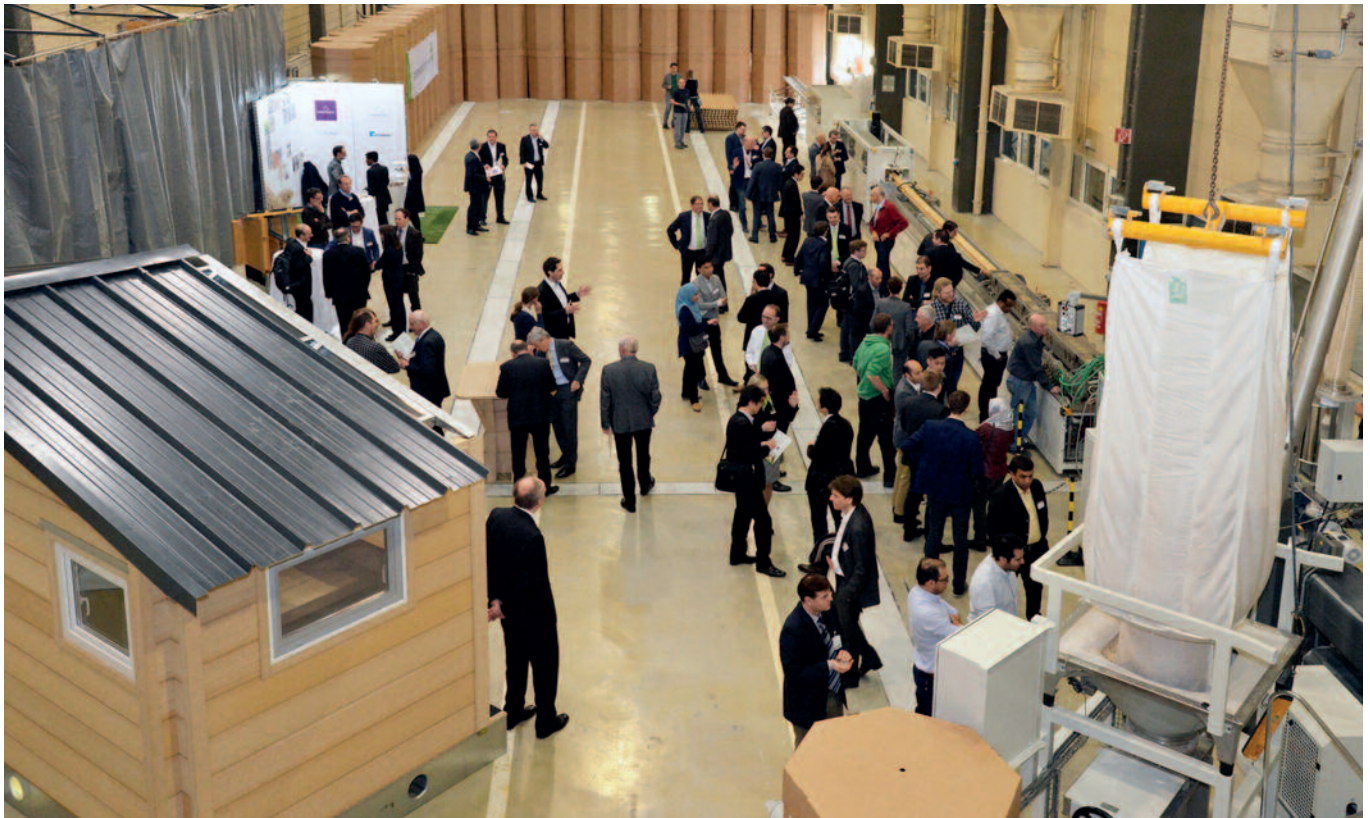


The "Simply Housing" model house from TechWood International demonstrated the wide range of possibilities which temporary housing made of WPC profiles has to offer

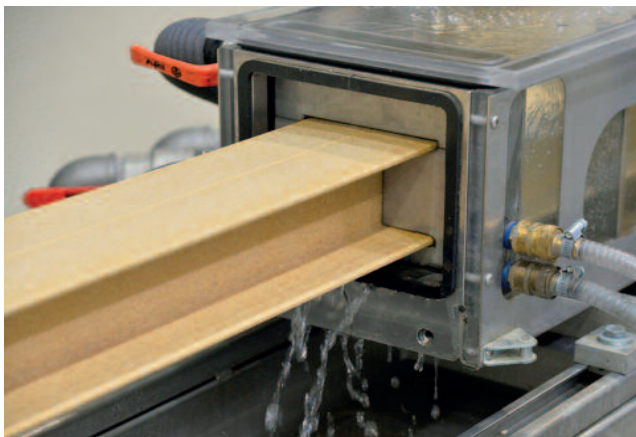
Houses made of WPC profiles

Quickly assembled, safe and inexpensive

As the main sponsor, battenfeld-cincinnati impressed the international visitors from 24 countries again this year with its live demonstration during the successful WPC conference organized by Applied Market Information Ltd. (AMI), Bristol, UK. 110 visitors came to Vienna to gather information about the latest developments in the wood-plastic composites sector from presentations, exhibits and the demonstration of a WPC line at the technical lab of battenfeld-cincinnati Austria. They were not disappointed. This year, the main focus lay on the topical subject of "WPC profile production for temporary housing". A "Simply Housing" model house from TechWood International, UK, was showcased, and an H profile extruded, which is used as a connecting element in the house construction.



View of the "Simply Housing" model house and the battenfeld-cincinnati WPC line



The H profile was manufactured from a blend of 72% wood fiber and 28% PP

With its line demonstration, battenfeld-cincinnati Austria asserted once again its market leadership in the WPC extrusion sector. The pioneer in this technology and specialist in the design of customized extrusion equipment to meet the special requirements of wood-plastic composites presented its latest machine size of the fiberEX series this year, the fiberEX 93. This parallel twin screw extruder with a 34D processing length and a maximum output of 420 kg/h is equipped with an optimized degassing system. The specially adapted geometry of the gas outlet valve and the screw

TROOSTWIJK
INDUSTRIAL AUCTIONEERS & VALUERS SINCE 1930

ONLINE AUCTION

due to closure of **FOLAG AG (i.L.)**
 3400 Burgdorf and 6203 Sempach Station (Switzerland)

Producer of Plastic Bags

19 FILM BLOW EXTRUDER LINES

5-layer extruder line "Plastex/Macchi" 2K200/2K180, rewinder "Macchi"; **3-/2-layer extruder lines** incl. "Battenfeld"; **mono layer extruder lines** "Reifenhäuser" and "Hosokawa Alpine"; 2 extruder machines "Paolo Cerrini"; 8 extruder lines "Kuhne"; horiz. pvc pipe extruder line "Kuhne/Akma";

FLEX PLASTIC BAG PRODUCTION MACHINES incl. **6-color flex printing machine** "CMF" Superflex 120; **paper laminator** "Comexi"; **2 BAG PRODUCTION MACHINES** incl. "Lemo" Intermit ST-M4 1100 (2012); 5 plastic bag welders; carton tube cutter (2015); **SLITTER CUTTER** "Euromac"; laboratory, etc.

CLOSING: Tuesday 21 JUNE

Viewing: Tuesday 14 June from 9.00 till 16.00 hrs
REGISTER AND BID NOW at

www.TroostwijkAuctions.com



The formulation had an extremely low bulk density of 270 g/l and was processed in the form of an agglomerate

The agglomerate was compounded cost-efficiently in a heating/cooling mixer system; it was subsequently fed into the extruder without a dosing unit, simply by using the hydrostatic pressure of the material (shown in the picture: material feeding unit in operation, half-filled with WPC agglomerate)

prevents leakage of melt particles from the processing chamber and ensures a high degassing performance with easy access to the degassing aperture during operation.

The complete line was demonstrated in cooperation with system partners for tooling (Beologic, Belgium), material conveyance (EMDE, Germany) and the gravimetric dosing system (ConPro, Germany). A 160 x 30 mm H profile was manufactured, which is used as a connecting element in assembling a house made of WPC profiles. In this context, the formulation of the compound used, with a low bulk density of 270g/l and consisting of 72% wood

fibers and 28% PP with additives, deserves special attention. The material was processed as an agglomerate that was produced in a heating/cooling-mixer system. This solution constitutes a particularly cost-efficient compounding alternative, especially since the agglomerate was fed into the extruder without using a dosing unit, simply by using the material's hydrostatic pressure.

A special advantage of the compound used in this case is its high wood content, which ensures a pleasant, well-balanced indoor climate in its final application for building houses in regions of varying climatic conditions. Thanks to their high wood content and because PP, which is based exclusively on hydrocarbons, is used, the profiles also fall under the Waste Wood Ordinance, which means that thermal disposal is permitted. If the WPC profiles are used to build hospitals, antibacterial additives can be blended into the agglomerate to minimize bacterial growth.

A house consisting of such WPC profiles can be built for a



price starting at 200 EUR per square meter and is therefore very cost-efficient. With the extrusion line demonstrated, units of about 60 m² can be produced in less than one day. Thanks to an easy-click system, the assembly of such a house is very simple and does not require expert personnel. Therefore the profiles are ideally suited for use in temporary housing or for hospitals in crisis areas, and so they provide answers to many geopolitical issues.

"That we have addressed a highly topical issue with our line demonstration has been confirmed not only by the participants of the AMI conference, but also by the fact that both customers and investors have shown very lively interest after the conference, and several test runs have been carried out as well", Sonja Kahr, WPC Product Manager, comments the positive response with pleasure.

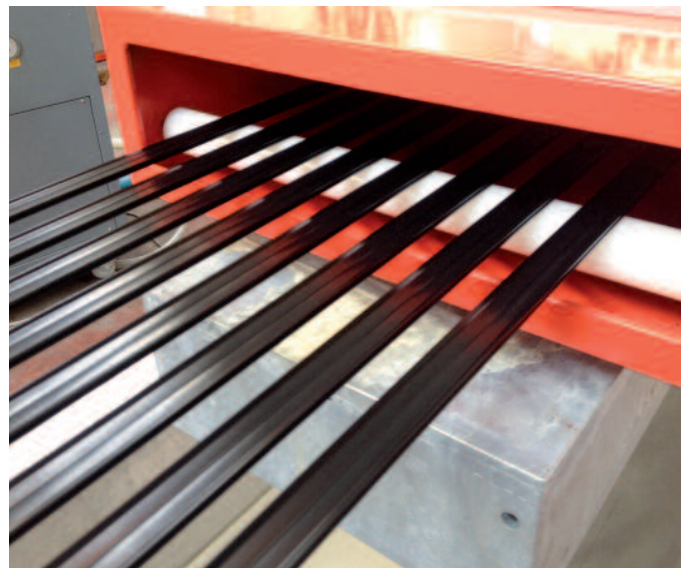
Extrusion Plant for Thermal Break Profiles

Friul Filiere SpA has realized for a European customer a complete plant for the extrusion of thermal break profiles in 8 strands. An excellent result considering the particular characteristics of this material. PA66 is a nylon with very high processing temperatures which entail calibration difficulties. Furthermore, the reduced tolerances (in the order of hundredths) which requires their application within windows and the production of 8 profiles simultaneously, further complicate the extrusion process.



The plant ensures the production of 8 profiles at 2mt/min (90 kg/h) and it is composed of a single-screw extruder Omega80 with PLC, in which the raw material arrives already dried, and classical downstream with insertion of auxiliary machines. A gear pump helps the process stability but the material flow is constant and homogeneous, despite the complexity of the 8 strands, thanks to the special technology Friul Filiere applied to the die. In fact there is not even any need for a chiller. The control of the 8 strands is assured by a dedicated calibration system with die-calibrator centering which allows a perfect alignment and facilitates the positioning of the profiles. The flexibility of the extrusion plant has allowed the insertion in line of a sandblasting unit and a glue insertion system. The sandblasting unit prepares the profile surface that will be varnished together with the window frame, allowing a better accession of the varnish. The glue insertion system facilitates the assembly. The extruded thermal break profile presents mechanical characteristics of resistance similar to aluminum but ensures high thermal insulation performance.

Thermal break profile



A success story for China - made in China



Single-screw extruder KME 60 -30 B/R
in the Performance Series

KraussMaffei Berstorff will present a single-screw extruder in the 30D Series (KME 60 –30 B/R) with newly developed screw geometry. This extruder is produced in China specially to meet the requirements of the local market for PP-R processing. On the occasion of Chinaplas KraussMaffei Berstorff will open the plant of the KraussMaffei Group in Haiyan on April 26, 2016. Customers and interested parties will see a live demonstration of the production of twin-strand PP-R pipes (diameter between 20 and 40 mm).



*KraussMaffei Berstorf
twin-strand
extrusion line
for production
of PP-R pipes*

Twin-strand technology –produced locally with German engineering – to reduce unit wage costs

"Economical production, high outputs and perfect end product quality have also long been standard requirements in the mechanical engineering and system construction industry in China," emphasized Michael Hofhus, Vice President Extrusion at KraussMaffei Berstorf in China. "As a competent system supplier, we have been satisfying precisely these needs of our customers through our product portfolio in the Performance Series from our plant in Haiyan for several years. On a highly competitive local market processors focus on both quality and lower unit wage costs," said Hofhus. The twin-strandline, which will produce PP-R pipes live from 12.00 to 13.30, will demonstrate very clearly how economical production functions in a confined space. The line will produce PP-R pipes with a diameter between 20 and 40 mm at a speed of up to 25 m/min per strand and an axial distance of 450 mm. The core components of the line are the single-screw extruder KME 75-30 B/R, two co-extruders KME 20-25 D/C for strip production and two pipe heads KM-RKW 32 from the locally produced

Performance Series. The line is completed by other components ranging from a suction conveyor, a cooling zone, a saw and a haul-off through to a drop off table. The C6 line control system ensures optimum monitoring and safe process control.

Expansion of the market position thanks to the successful Performance Series

"In the last few years we have placed complete lines up to a diameter of 1200 mm on the market. However, we are not only very successful as a system supplier for complete lines, but also in business with individual machines," added Hofhus. "With our single-screw extruder model KME 60-30 B/R from the Performance Series, we offer processors a suitable machine concept, especially in regard to locally used materials," said Hofhus.

The 30D Series, an extension of the single-screw series that has been used successfully for many years, is perfectly designed to process local PP-R material thanks to its revised screw concept. "The advantage here is the short processing unit which ensures optimum thermal and material melt homogeneity with high output, and therefore a final product of the highest possible quality.

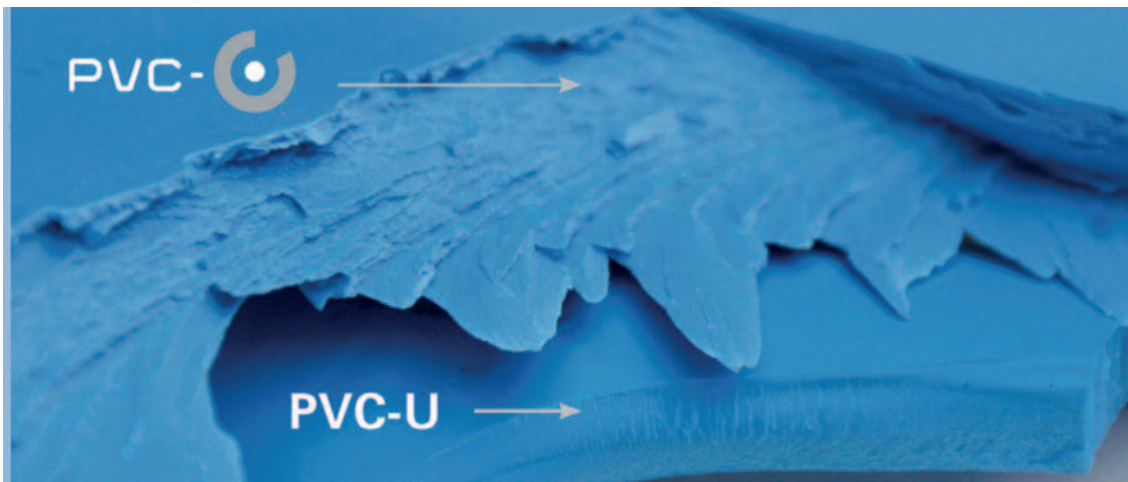
Another important criterion for Chinese producers who are increasingly setting themselves apart from competitors on the local market through high -quality products," said Hofhus. The exhibit in the 30D Series, which is produced at the production plant in Haiyan, is equipped with the new user-friendly C6 control system with its modern operating philosophy.

➔ www.kraussmaffeiberstorf.com



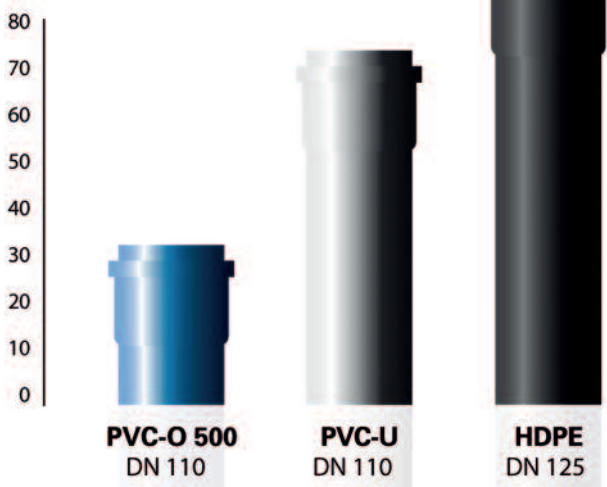
www.illig.de

PVC-O pipes and sustainability



EXTRACTION AND PRODUCTION OF MATERIALS

Energy consumption (kWh)



Bearing in mind the problem of global warming affecting the planet due to the greenhouse effect, many governments are planning environmental policies seeking greener and environmentally friendly solutions to apply in all areas and so maintain a proper sustainable development of the available resources.

As a contribution to improve this problem, TOM PVC-O pipes for the transport of water under pressure, become the most sustainable option that exists in the market due to their lower energy consumption and lower CO₂ production associated since they avoid unnecessary energy consumption throughout its long useful life.

The factors that determine energy efficiency throughout the lifecycle of a pipeline are mainly the type of raw material used, the production process, the finished product and its useful life.

PVC-O lifecycle

During the lifecycle of the PVC-O pipes manufacture, we can distinguish several phases:

1. Production phase

PVC-O pipes are manufactured by conventional extrusion and subsequent molecular orientation. The extruded base pipe, under certain conditions of pressure and temperature, is subjected to a inside stretching of the pipe, the rearrangement of the polymer molecules, forming a lamellar structure on the pipe

wall which significantly improves the mechanical properties of the pipe, while keeping intact its chemical properties.

At the same time, an optimization of the pipe wall occurs, with less raw material a pipe with higher mechanical properties is achieved as well as an optimization of raw materials. This lower consumption of raw materials, results in energy savings during their extraction and during production.

It should also be noted that the Molecor manufacturing process, worldwide patented, has great energy efficiency with which an optimization of the energy resources is also produced during the TOM® pipes production stage.

2. Use phase

The useful life of a pipe to transport water must ensure a 50-year period as established by the regression line that determines its maximum operating tension. This useful life, begins at the time of construction of the network with the installation of the pipes. At this stage, the most important energy consumption is due to pumping.

Regarding the efficiency and energy savings that take place during this stage, we can distinguish several aspects:

- Transport optimization

Thanks to its lightness, we can transport more material, so we have fuel efficiency and minimizing CO₂ emissions associated.

- Installation cost efficiency

- Its lightness also minimizes the impact of hand work and the need for special equipment for its placement.

- The efficient design of the socket allows the pipes are assembled with great ease.

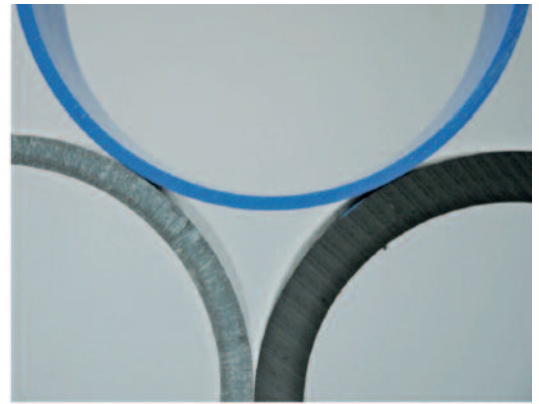
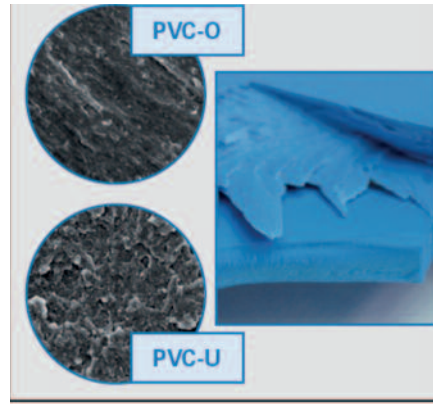
Uniting these two factors, high performance installation is achieved, reducing considerably the time of execution of works, obtaining economic and social benefits by saving time and energy.

- Efficiency during operation

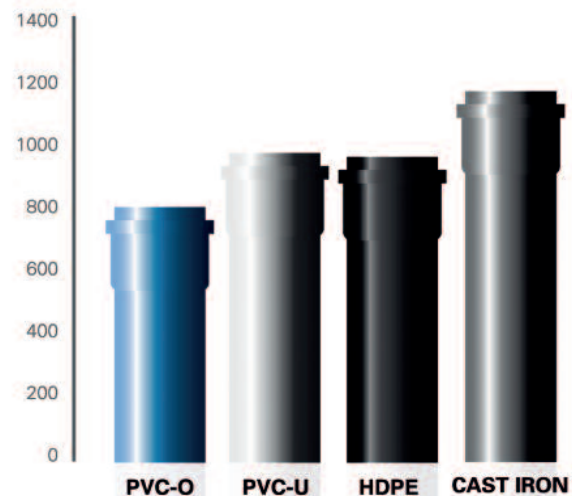
TOM® PVC-O pipes have a higher hydraulic capacity, between 15 and 40% depending on the diameter and the material with which it is being compared, so that for the same energy consumption, the transported water is always higher. This increased hydraulic capacity is due to the greater useful section that these pipes present due to the optimization of wall thickness. Moreover, their smaller roughness causes the inner pipe surface is extremely smooth, thus the pressure losses are minimized and fluid can flow faster. All these benefits make that to transport the same amount of water less energy is needed, thus reducing energy consumption in pumping stage during use.

3. Recycling or final disposal phase

PVC is a 100% recyclable material that can be reused after its long useful life, mainly by mechanical recycling.



Energy consumed by pumping (kWh)



Estimated energy consumption by PVC-O, PVC-U, HDPE and Ductile Iron piping production and use. Polytechnic University of Catalonia, Spain, December 2005.

The PVC-O manufacturing process, due to its high technical requirement, does not allow the use of recycled materials, but allows a comprehensive management process because they can be used, after its long life cycle, in the manufacture of other plastic applications such as cable sheathing, gutters and downspouts for evacuation among others, where the technical requirements for raw materials are lower.

Thus, consumption of raw materials and also the volume of waste generated is reduced.

Promoting a culture of reuse and recycling is reflected in the report of the European Commission in April 2004, and in the voluntary commitment of the actors in the sector of waste management at European level in the Vinyl2010 and VinylPlus programs.

Largest PO pipe line in Romania

Last year, the well-known Romanian pipe producer Tehno World installed a complete extrusion line from battenfeld-cincinnati that was funded by an EU project. With this line, Tehno World enlarged its production capacity to include two-layer HDPE pipes with diameters up to 1.2 m at its facility outside the city Falticeni, Jud. Suceava. Tehno World is the only producer in Romania able to produce pipes of this diameter and has entered the European market for large diameter pipes. The majority of the extrusion lines for smooth and corrugated pipe at Tehno World's facility are entirely from or include major components from battenfeld-cincinnati.

View of Tehno World's production hall, with the new 1.2 m line from battenfeld-cincinnati on the left side



“It has been a great opportunity for Tehno World to collaborate again with battenfeld-cincinnati, because we have reached for new horizons in our field of activity. battenfeld-cincinnati is a reliable and valuable business partner for us with whom we have worked in the past to develop our production capacity. battenfeld-cincinnati has demonstrated the high quality of its service and products while helping us to develop further and raise our standards of technology and flexibility,” says Ing. Iustinian Pavel, Director of Tehno World. The 1.2 m line produces pipe in the pressure classes SDR 11, SDR 17 and SDR 26 and was introduced to Tehno World’s customers at an Open House event in October 2015. The line is equipped with a soLEX 90-40 as its main extruder and a uniEX 45-30 as co-extruder. Both operate with a high level of efficiency, thanks to their AC drives, optimized screw geometries and air-cooled, bi-metallic barrels.

For the addition of color stripes, battenfeld-cincinnati delivered a small, space-saving coEX 30-25 co-extruder, installed



A 1.2 m pipe with color stripes produced on the battenfeld-cincinnati line



The cutStream PTA 1200 cutting tool can cut both swarfless or with swarfs, depending on the application (all images © Tehno World)

on a die trolley with a swivel arm for easy movement. The new large-diameter line also includes some FDC (fast dimension change) components: The pipe head is equipped with an adjustable die aperture, which consists of a conically shaped mandrel and an outer sleeve moving in longitudinal direction. It covers pipe diameters from 900 to 1,200 mm and

- with an extension – also diameters from 500 to 800 mm (SDR 11 – SDR 26). The FDC components are completely integrated in the BMCtouch extruder control. The helix 1200 VSI-TZ+ pipe head reduces sagging and pipe ovality for thick-walled pipes, even at high line speeds, thanks to its two-step distribution concept. The active intensive melt cooling and inner pipe cooling operate mainly with ambient air, thus minimizing operating costs and maintenance requirements.

The internal pipe cooling also reduces the cooling length, which is of great importance for Tehno World due to limited hall space. With the new line from battenfeld-cincinnati, they can run 1.2 m pipes (SDR 17) with throughputs above 1,500 kg/h and a cooling length of less than 40 meters.

The cooling section includes two vacStream 1200-6 vacuum tanks and four coolStream 1200-6 cooling tanks and is complemented by the rest of the line components: haul-off (pullStream R 1200-10 VEZ), start-up aid (startStream AFH 60), cutting unit (cutStream PTA 1200) and tip table (rollStream RG 1200).

The line is controlled by the proven BMCtouch control with a 19" TFT touch screen, so that saw and haul-off can be operated via the extruder terminal. The control also includes the option of remote servicing.

► www.battenfeld-cincinnati.com, www.tehnoworld.ro

Pipes for Sub-Saharan African Markets



Water pipe installation and welding



A communal water tap in a remote village

Tecnomatic increases its presence in the Sub-Saharan african market by the delivery, to an important group of Mauritania, of four extrusion lines for polyethylene pipes. This new project, follows and confirms the good work performed by the company in the area, with important supplies in Tanzania, Ghana, Nigeria, Ivory Coast, South Africa, Ethiopia. To establish a constant and professional relationship in these markets, a strong focus has been placed in developing technical solutions able to increase realibility and to grant excellent performance and quality production even in harsh condition.



VEGA extruder 75.37 with VENUS 400 and PAC air cooling system, for efficient pipe production

The project is expected to have considerable environmental and social impacts. The climatic context (drought and desertification), the degradation of natural resources as well as poverty, particularly among the least privileged segments of the population, have increased the pressure on and demand for water facilities and the need for integrated resource management planning to cope with climate change. The UN Development Programme (UNDP) estimates that total budgetary spending in the water and sanitation sectors in sub-Saharan Africa is currently around \$800 mn a year. This amount could likely be increased to \$2.5 bn through “cost recovery”.

The manufacturing of pipes will help to support the development and major infrastructure works under way in the country. The customer, representing an important group of companies in the construction and trading business, even if has started its pipe production recently, has rapidly gained reputation because of its choices quality oriented.

Technical details of the line

The lines, characterized by reliable technological solutions – such as the extruders Vega with L/D ratio of 37 and Venus heads with internal pipe cooling (PAC) – will produce HDPE pipes with diameters up to 400 mm.

The VEGA series are the result of years of experience manufacturing extruders and of a constant effort to develop each part of them. A constantly updated screw design, matched with the water cooled straight feed bush, ensure excellent production values with optimal plasticizing, even at high output

rate. The specific output has been further increased and it maintains constant across the whole screw speed range or even at high backpressures values.

The machines are equipped with synchronous AC motors specifically designed to be used in applications at high dynamic performances with variable speeds. The selected motors are mechanical sturdy to withstand high overloads while a highly effective insulation avoid a gradual deterioration caused by operation at high frequencies. Italian gearboxes characterised by single block cast iron frame, for large oil capacity cooled by an independent unit, and high performance bearing unit (up to 500 bars) fit out the transmission system of the VEGA series. To process the high throughput with low backpressure and stress load to the material VENUS die-heads are the proper tools. Based on a spiral distributor concept with a compact design thanks to their innovative geometries and the internal air cooling (PAC system) ensure an optimal wall thickness distribution, ovality and low sagging. The lines are synchronized using gravimetrics on each extruder, to guarantee a continuous raw material feed and to record variations in mass throughput, thereby ensuring a perfect control of the weight per meter and wall thickness distribution. The downstream equipment includes Tecnomatic vacuum & cooling tanks, haul-offs with caterpillar tracks controlled by an independent vector AC motor and planetary saws with knife cutting and universal clamping device, for a very accurate swarf-less pipe delivery.



gaskets joined on by extrusion



gaskets joined in by extrusion

The leading edge that always connects

In 2013, Greiner Extrusion developed RED.TOOLING, the tooling system focusing on productivity, profile quality and economization. In line with this achievement and in order to complete the RED.LINE-system product range, post-co-extrusion has also been developed further with the creation of RED.PCE. The RED.PCE unit is compatible with all other Greiner tooling types.

The leading rdge through user optimization

The clear benefits when using RED.PCE are user optimization on the one hand and increased quality during the production process on the other. The multiple use of PCE dies for different profile geometries allows for a huge saving potential. The mounting system includes a tank with integrated mounting bars. It is continuously adjustable along its length and can be operated from both sides. Mounting of the end suction and sealing plates is fairly straightforward. Cylindrical safety inserts in the sealing plates prevent process interruptions and make the start-up process easier at the same time. The short set-up time has a positive effect when changing the dies, as the heater block with PCE guide stays on the adjustment block. Up to four PCE gaskets including adjustment blocks that are also accessible from both sides can be fitted onto the mounting bars.

The leading rdge through increased quality

Using RED.PCE allows the production of gaskets using joined-in and joined-on extrusion. The joined-in gaskets can be ex-

changed and easily recycled. The joined-on gaskets stand out through optimum adhesion. Two variants of joined-on gaskets can be processed during RED.PCE production: firstly, with the well-known heated-air function and secondly, using the recently developed variant with the pre-heater rail.

With the heated-air variant the welding area is heated with an air jet. For this purpose, additional equipment is required such as the heat extension, leister hot air blower, and control box.

The second variant with the contactless pre-heater rail is called RED.PCE plus. With the RED.PCE plus system the joining surface of the carrier profile is heated with the pre-heater rail and the welding surface is extended with an additional blade.

After this, the gasket is directly joined onto the carrier profile. This production process distinguishes itself through optimum adhesion and exact positioning to the profile.

1200 pipe sockets per hour on a quadruple extrusion line

Multiple strand extrusion lines for plastic pipes are growing. Lately, the market demand seems to be moving from double extrusion lines to quadruple extrusion lines. So Sica, Italian machine manufacturer, produced the first belling machine of this kind, Multibell 75Q. This is a very fast automatic belling machine specifically designed to receive PVC-U pipes coming from four-strand extrusion lines at independent speeds. It handles high production extrusion lines and can socket up to 1200 pipes/hour. Multibell 75Q can socket pipes with output diameter ranging from 16 to 75 mm and of length from 1 to 6 m plus socket.

The pipes coming from each strand are moved to a buffer by means of a high-speed handling system to form a group of 2, 3 or 4 pipes, depending on the diameter. The group of pipes is moved to the hot air-recirculation oven, which warms with high precision the required pipe length to be socketed, thanks to the double automatic aligning system integrated in the oven. When the heating stage is finished, the group of pipes is moved to the multi-forming station and socketed.

Solvent cement cycle or air-blowing cycle are both available, and sockets are cooled externally by pre-cooled compressed air and internally by cold water circulating through the mandrels. For producers who want to bundle the socketed pipes, an available bagging or strapping machine can be placed in-line contributing to a complete process automation.

If we compare a four-strand to a two-strand extrusion line having the same output rate, we can highlight the following advantages:

-high quality of the end product: by extruding at a lower speed, the quality of the pipe is higher and constant during production;

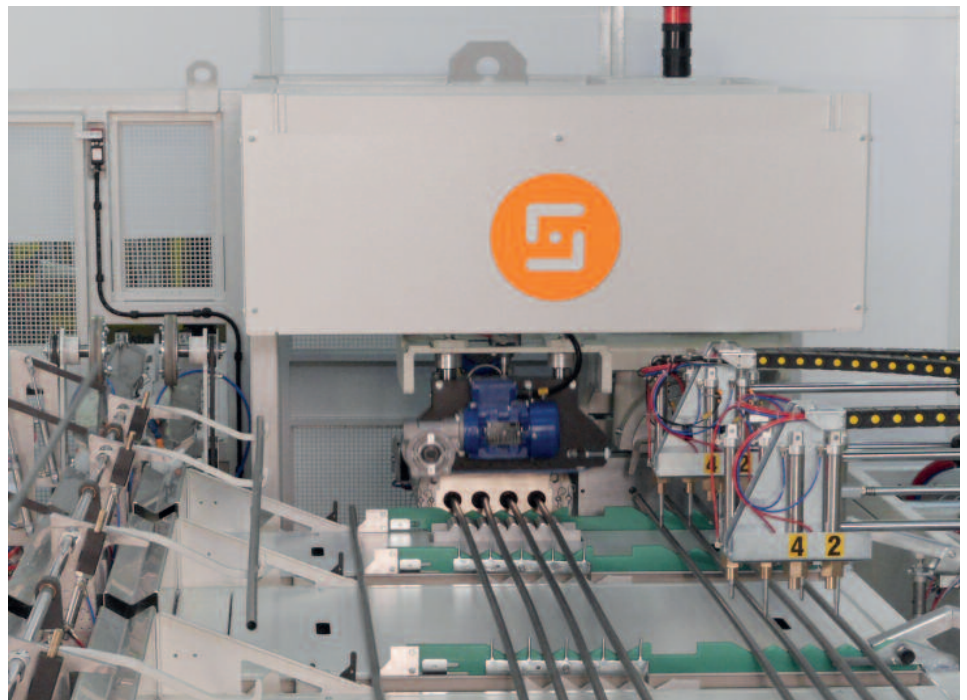
-short payback period: the four-strand extrusion line ensures achievement of very high machine availability at the maximum pipe output rate possible, therefore attaining a shorter payback period of the investment;

- small footprint: four-strand extrusion line footprint is practically the same as a two-strand extrusion line, but with a higher achievable output rate;

- low maintenance costs: a four-strand extrusion line needs less maintenance than a two-strand extrusion line thanks to the lower extrusion speed of each strand;

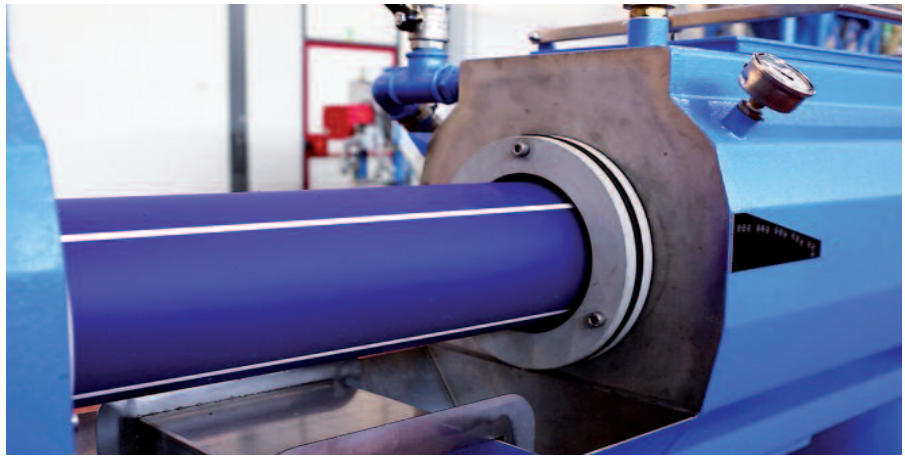
-user-friendly: the higher the line speed, the more difficult it is to control the line. Thanks to the lower extrusion speed of each strand, a four-strand extrusion line is easier to set than a two-strand extrusion line.

Multibell 75Q is a low energy consumption modern belling machine capable of satisfying the most demanding customers who look for value, consistent high output and fast return on investment.





AMUT continues to improve the technology of lines producing PP pipes with glass fibres and mineral filler (calcium carbonate or barium sulphate). The pipes extruded with this technology are used for hot water piping and soundproofing drainage piping. The glass fibres improve the elastic and mechanical properties of the material, the reduction in pipe thickness, maintaining the same resistance level, and the thermal expansion (less joints are required). The quality of pipes is definitely enhanced.



Extrusion Line for Multiplayer Pipes Production

The line has a range of diameters from 16 to 200 mm, with SDR 6–11, and the new design 3-layer co-extrusion head allows a configuration A-B-A or A-B-C with external coloured stripes.

Main Technical Features

The co-extrusion line configuration consists of four extruders:
 EA60 Single Screw Extruder - (A) Internal/External Layer
 EA75 Single Screw Extruder - (B) Middle Layer (Glass Fibres/Mineral Filler)
 EA60 Single Screw Extruder - (C) External Layer
 A20 Single Screw Extruder - External Coloured Stripes

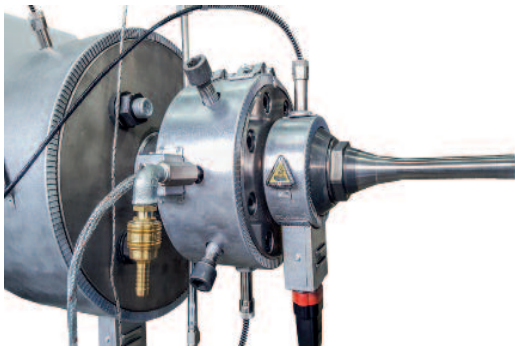
The extruders are fed by gravimetric system for a better control of the output and each screw and barrel undergo a special antiabrasion treatment to process properly the glass fibres or the mineral filler.

The production changeover, according to the chosen diameter, is very quick because the whole re-tooling concept is devised to minimize times and manual operator intervention.

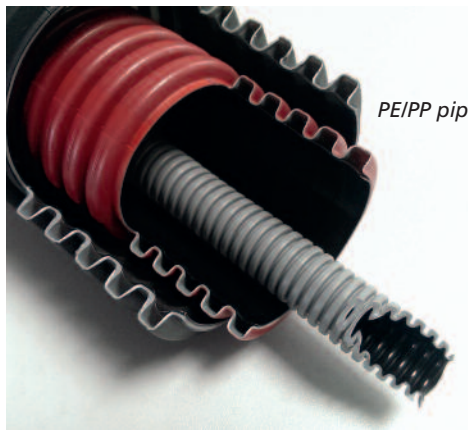
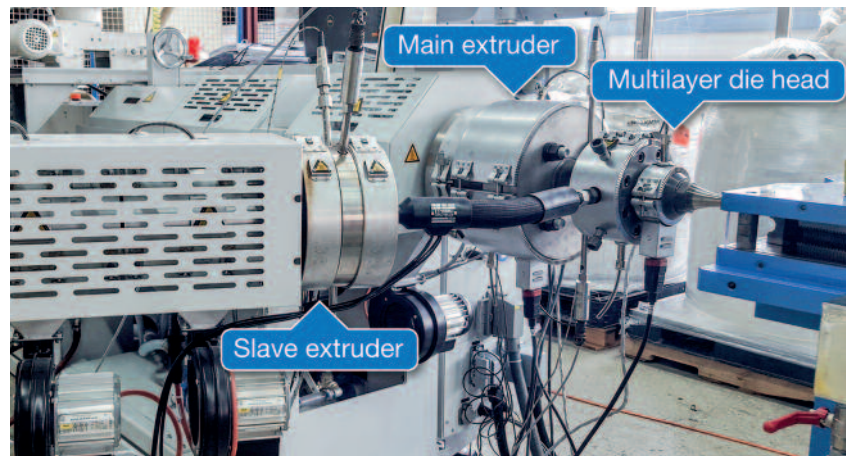
The gauging measurement system continuously controls all the parameters during the production process to ensure a top quality pipes. The software manages the different recipes.

► www.amut.it

Innovative Multilayer Extrusion Tools



SWP-2L die head



PE/PP pipes produced with the new UNICOR die heads

With its newly developed die heads, UNICOR is bringing high-performance tools for the extrusion of technical corrugated pipes and electrical conduit to the international market.

UNICOR is known around the world for its advanced corrugation technology and components. But the German company is also a leader when it comes to die heads for extruding corrugated pipes. Alongside of its existing die heads, such as those for the production of wastewater and drainage pipes with diameters up to 1800 mm, the company is now releasing two new die head systems for multilayer manufacturing.

SWP 58-2L for single and double-layer electrical conduits

The SWP 58-2L is a modularly constructed die head that was specially designed for the manufacture of electrical conduit. Both single-layer and double-layer conduits can therefore be produced with PE/PP/PA and PVC/ABS materials.

TWP 90/160/270 for multilayered electrical conduit

The TWP series was specifically developed for the production of double wall corrugated pipes – particularly for underground use. The corrugated outer layer is made from two strata. This allows the pipe manufacturer to use recycled granulates while maintaining the color classification of the pipe types.

To accomplish this, a new distribution system was developed. It provides a perfectly symmetric pre-distribution which in turn provides the thinnest cover layers and optimal color coverage.

► www.unicor.com

Prepared for the Future - Restructuring successfully completed

The reorganisation of the BEKUM Group in Germany and Austria was successfully completed in spring 2016 as planned. The Production division, which includes machine assembly, shipping, procurement, work preparation and warehousing, has moved to Traismauer (Austria), about 60 km from Vienna. For this purpose, more than 5 million Euros were invested in the expansion of the Traismauer site and approximately 40 new employees were hired.



BEKUM's New headquarters in Berlin



Andreas Kandt, CEO of BEKUM Maschinenfabriken GmbH:

"With approximately 16,000 BEKUM blow moulding machines delivered worldwide, we have a great responsibility to support our customers in their production tasks competently and, above all, quickly."

Andreas Kandt, CEO of BEKUM Maschinenfabriken GmbH in Berlin: "The reorganisation provided us with the basis for excellent market positioning. From our perspective, the reorganisation results in considerable synergies not only on the cost side but by pooling expertise and experience. As a pioneer and technology leader, we have repositioned ourselves to continue shaping extrusion blow moulding through innovation and high-end products for the future."

BEKUM-Traismauer expanded

The aim was to consolidate the European manufacturing of extrusion blow moulding machines at a single site. While previously only large blow moulding machines were built at Trais-

mauer (established since 1968), now smaller packaging machines will be built in the 16,000-square-meter space. Through consolidation of the processes at a single site, significant synergies have already been achieved. For this, BEKUM invested more than 5 million Euros in the expansion of the site, particularly by adding assembly and office space, as well as in the construction of a new central warehouse. At the same time, approximately 40 new employees were hired. It was also possible to persuade key production employees to move from Berlin to Traismauer. Andreas Kandt: "Experienced and knowledgeable employees remained loyal to us and went to Traismauer to ensure continuity and knowledge transfer."

New Headquarters in Berlin

In Berlin, the company moved into new headquarters in mid-April 2016, not far from the previous headquarters. In contemporary offices, worldwide operations come together in the areas of sales and marketing, development and design, as well as technical service and spare parts distribution. These areas were purposely kept in Berlin to ensure continuity of customer service and technical development of individual customer solutions via the highly experienced Berlin-based staff. Andreas Kandt: "With approximately 16,000 BEKUM machines blow moulding machines delivered worldwide, we have a great responsibility to support our customers in their production tasks competently and, above all, quickly."

Sales Success is evident

New orders were received in Eastern Europe and the Middle East for mostly small and medium-sized machines for the packaging industry. These have been delivered as the first packaging machines out of the Traismauer factory. The automotive segment was also extremely successful over the past year. Large orders for VW in Wolfsburg (Germany), as well as for production facilities of Fiat in Italy and Brazil, were gained against the competition, underscoring BEKUM's high level of expertise in this market segment. Several single-station and double-station tank blow moulding machines for producing coextruded 6-layer or 7-layer fuel tanks with IMD (in-mould deflashing) and SIB (ship in the bottle) technology are involved. Andreas Kandt: "In this market segment, we can demonstrate our natural strengths: Uncompromising product quality with high production output and machine uptime. Our special strength is offering customers complete production cells. In this area, we serve most major car manufacturers in Europe."

Summary

These were essential milestones for strategic reorganisation, defined by a dedicated BEKUM management team in Berlin and Traismauer, for achieving simultaneous aims of stability and continuity, as well as progress and innovation. The successful consolidation of production departments prepares BEKUM for the future in the area of packaging machines. At the same time, major commercial success in automotive machines proves BEKUM to be the "all-around" technology leader in blow moulding machines.



Expansion and consolidation of production in Traismauer (Lower Austria) in 16,000 square meters

Large machine construction in Traismauer: Final assembly in Traismauer of a 6-layer tank system blow moulding machine, type BA 220 M Coex, for the automotive sector



Waterless DMS-technology for energy-efficient mould area dehumidification

Injection moulding, thermo forming and blow moulding without condensation is possible. Blue Air Systems' basic range of MSP-Dehumidification units (with process air volumes between 1.000 and 10.000 Nm³/h) was complemented with the new DMS series (Dry Mould System), a dehumidifier which works without the need for chilled water. An enclosed production area is supplied with dry air with a dew point of 4°C (39,2°F). The DMS dehumidification units with process air volumes ranging from 500 to 3.500 N³/h are now available.



Dehumidification with the DMS unit (Dry Mould System) for packing, PET pre-form production and many other highly sophisticated applications

The mould dehumidification units MSP are used mainly for supplying dry air to a central dehumidification system. The DMS series are specialized to be used for single production machines (up to 3 units). At the K 2016, the DMS system for high demanding injection moulding, extrusion blow moulding or thermo forming applications will be demonstrated to the trade visitors. As inventor of this game-changing technology, Blue Air Systems has spent three intensive years developing, testing and improving the system. The DMS units provide year-round, condensation-free production conditions, independent of ambient conditions, without the need for chilled water needed for pre-cooling. This energy-efficient technology guarantees the users of injection, blow moulding or thermoforming machines to run the shortest possible cycle times, therefore guaranteeing higher production output. The DMS series has been installed in various climatic areas, proving its performance. A number of references prove their efficiency and effectiveness.

The phenomenon of condensation on tempered moulds

When the surface temperature of an object sinks below the dew point of the ambient air, condensation builds on this object. This problem especially occurs on moulds of plastic processing machines that are cooled by chilled water. The cooling time, usually the longest part of the cycle time and one of the most sensitive steps of the manufacturing process is an important figure that influences the cost factor of the entire production process.

Bernhard Stipsits, managing director of Blue Air Systems:
 "The DMS units from Blue Air Systems guarantee condensation-free production conditions in a closed system, even when using very low chilled water temperatures for the moulds throughout the year, making you independent from ambient climatic weather conditions. The MPSCS (Micro Processor Controlled Segment Condensation) technology provides controlled parameters at all times, making sure the optimal energetic conditions are automatically adjusted. What you get is higher productivity and constant product quality in the production process at lowest possible energy consumption. It's time to start reducing our ecological foot print and the DMS is a huge step in this direction!"



By reducing the cooling water temperature of the mould, a shorter cycle time and subsequently a higher production output can be achieved. If the water temperature sinks below the dew point of the ambient air, the moisture in the air will condensate on the surface of the mould. To avoid this condensation in facilities located in hot and humid climate zones, process engineers of manufacturing plants tend to increase the water temperature above the ambient dew point of the air. This standard procedure has a crucial disadvantage - the efficiency confines the effectiveness: increasing the cooling water temperature extends the cooling time of the item in the mould, thus reducing productivity and profit (rule of thumb: 1°C increase in cooling water temperature = 2% reduction of productivity).

In many cases a longer cooling time increases the crystallization rates in the moulded plastic resulting in inferior product quality. Furthermore, condensation on the mould leads to possible water marks ("orange skin") on the final product causing rejects or low product quality.

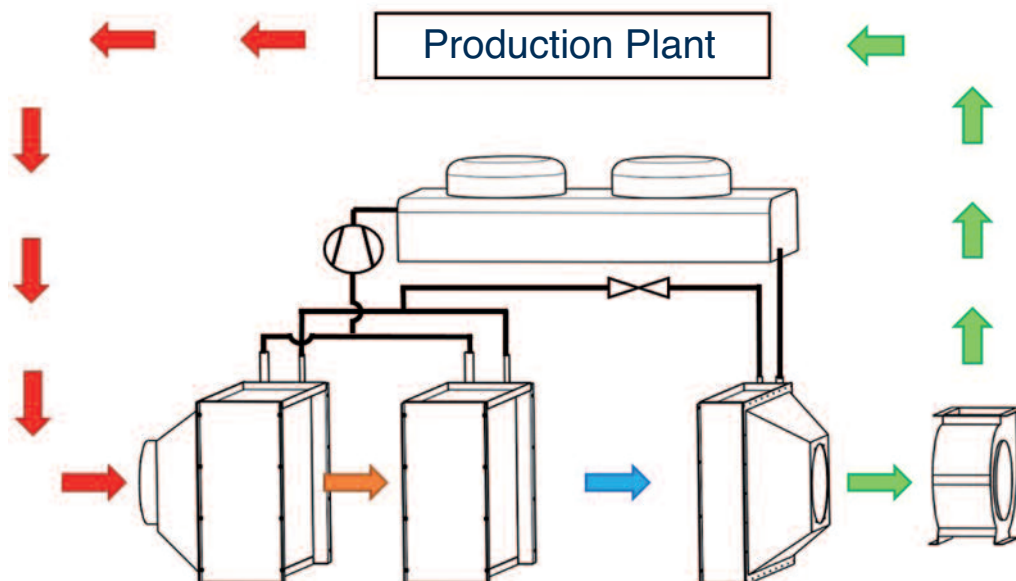
Functional Principle DMS (Dry Mould System): The process air is run in a closed loop, circulating back to the DMS unit for pretreatment and dehumidification of the air to a 3°C dew point. The MPSCS (Micro Processor Controlled Segment Condensation) technology guarantees perfect and consistent conditions at the lowest possible energy consumption

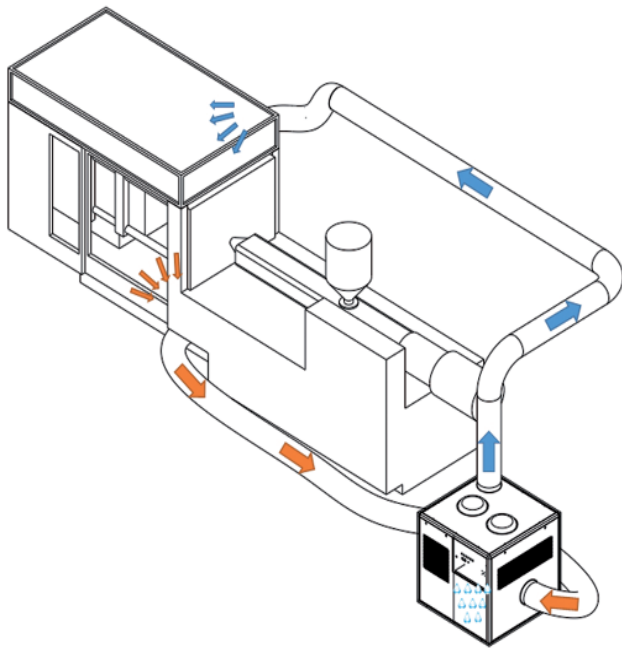
Limitations of conventional technology for mould dehumidification

A popular way of drying air for mould dehumidification is with the adsorption system. This technology, that uses a desiccant wheel for dehumidification, needs a comparatively high amount of energy. The energetic inefficiency occurs due to the use of large regeneration heaters, ventilators, motors and pre and after cooling with the need for chilled water. Mould dehumidification with the condensation technology, using a refrigerant system, is an alternative to the desiccant system. The MSP (Mould Sweat Protection) units based on this technology have been the backbone of Blue Air Systems for years. Many

MSP units have been installed in facilities worldwide. Thanks to their reliability and stability, these units bring their full performance even after many years and allow a condensation-free production with the optimal cooling temperature in the mould. A disadvantage of all dehumidifiers, whether they operate on the basis of adsorption or condensation drying, is that relatively large cooling loads are needed to pre-cool the ambient air.

In many cases, the chilled water capacity of the facility is not dimensioned sufficiently to supply the necessary cooling load of chilled water. When investing in a new dehumidification system, besides the cost of the





Condensation-free production conditions with the DMS unit: dry air circulates around the mould in an enclosed environment – more performance, less energy and consistent product quality

dehumidifier, the manufacturer also needs to take the cost of a new chiller, or the extension of the existing chiller system, into his investment calculation.

A look at the new, waterless DMS (Dry Mould System) in a closed loop

The DMS unit dries air on the basis of the condensation principle. The main difference to the standard systems is that the DMS is not constantly dehumidifying hot and humid ambient air. Instead, dry process air is circulated around the mould in a closed loop, bringing the air back to the DMS unit. By doing this, there is no necessity of using high cooling loads to dehumidify air, as the air returning to the DMS unit is partially dried. This procedure allows the DMS to work without a pre-cooler (chiller) and therefore no chilled water is needed for the DMS dehumidification.

A state-of-the-art refrigerant compressor of the newest technology automatically reduces the needed cooling capacity, as soon as reduction of moisture in the air is detected. Therefore, the DMS only uses electricity for the actual cooling need of the refrigerant system.

Model calculation: mould dehumidification with only 85 % lower energy consumption, compared to conventional systems

Standard dehumidification systems on the market are supplied with a water pre-cooler. The DMS units do not need the chilled water for pre-cooling, which automatically reduces overall investment costs for such a system between 15.000 and 20.000

Uniform product quality with condensation-free production conditions



Euros. A pre-cooler in standard systems, requires only 66 % or less of the overall energy normally needed.

By cutting out the pre-cooler, immense cost and energy savings can be achieved. In production, the actual savings can be seen: For example, a dehumidification unit with a desiccant wheel and a process air volume of 1.800 Nm³/h needs a cooling capacity of 38.700 kcal/h (45 kW) (calculated at ambient conditions of 35°C/ 60% rel. hum.), which adds up to 45 / 3 = 15 kW of electrical energy needed to run the chiller. For the regeneration heater, blower and motors, an additional 20 kW of electrical energy is needed for the dehumidifier. The total electrical consumption of the dehumidification and the electricity for the chiller adds up to 15 kW/h + 20 kW/h = 35 kW/h. This is a large amount of energy when compared to the DMS unit, which runs with an average of 5 kW, as only electrical energy is needed for the refrigerant compressor and the ventilators. The difference of 30 kW/h or in other words, 86 % reduction, is extreme.

If you calculate for example 0,15 EUR/kW and consider a 24/7 production with 168 hours production time per week, the immensity of the savings becomes clear: 30 kW x 0,15 x 168 h = 756 EUR per week, or 3.024,00 EUR per month (à 4 weeks). Hard earned money is saved so easily, day by day, every day. It is just as easy to calculate the short amortization time of the DMS unit.

Effective mould drying with the DMS means you save large amounts of energy, too

The installation of the DMS unit is easy and effective. The installation of insulated water pipes to and from the chilled water source is no longer necessary. Only the connection to the electricity supply is required. With the application of refrigerant compressors and ventilators of the youngest generation, significant energy savings can be achieved. These systems control and adapt the required cooling capacity to the ambient conditions, with the help of intelligent sensor technology. If the chilled water capacity is not enough, with the DMS application, no extra investment into an additional chilled water supply is necessary. The manufacturer has the advantage of saving double, once with the investment and a sec-



*High quality moulds can achieve maximum performance as well as efficient production cycles with the DMS units
(Source: HTW Formen- und Fertigungstechnik GmbH – Ludesch, Austria)*

water and which are located in areas where moisture in the air can condensate on the mould. So, generally speaking, all injection molding, extrusion blow moulding and thermo forming systems. Core areas in the plastics industry are packaging systems such as caps and PET performs, as short cycle times of the process and high production outputs require chilled water. Bernhard Stipsits, managing director of Blue Air Systems: "The DMS units from Blue Air Systems guarantee condensation-free production conditions in a closed system, even when using very low chilled water temperatures for the moulds throughout the year, being independent from ambient climatic weather conditions. The MPCSC (Micro Processor Controlled Segment Condensation) technology provides controlled parameters at all times, making sure the optimal energetic conditions are automatically adjusted. What you get is higher productivity and consistent product quality in the production process at the lowest possible energy consumption. It's time to start reducing our ecological foot print and the DMS is a huge step in this direction!"

ond time during operation. The DMS is a tailor-made system, allowing the manufacturer to choose to supply dry process air volumes from units ranging 500 to 3.500 Nm³/h.

Smart dehumidification with the DMS Series

The DMS units are made of high quality, perfectly balanced components to allow optimal energetic mould dehumidification. Until now, no comparable systems exist on the market. The process air is run in a closed loop, always brought back to the DMS unit for pretreatment and dehumidification of the air down to a 3°C dew point. The process air is dried by simulating a cold object in the DMS unit (similar to the mould) that allows the moisture in the air to condensate in the DMS unit, before it reaches the mould. The DMS unit cools and dehumidifies the air in a 2 step refrigerant unit with the MPCSC technology (Micro Processor Controlled Segment Condensation). For this version, only electrical energy is needed. A DMS 15 supplies a nominal process airflow of 1.500 Nm³/h. The larger DMS 25 dehumidifies 2.500 Nm³/h and the DMS 25+ up to 3.500 Nm³/h. Just like the ecological footprint, the actual footprint left in the production hall with the dimensions of a DMS 15 of 900 x 1300 mm is remarkably small.

Sophisticated areas of application

The DMS units are designed for all applications where sophisticated, high-performance moulds are cooled with chilled



The compact DMS series can easily be integrated into a manufacturing cell due to the marginal foot print it leaves behind, physically as well as ecologically



*The best solutions are always simple:
The transparent and robust blanketing motan
BO 1500 fits on all standard octabins and keeps
the contents at a defined moisture level with
minimal energy input,
even during longer production breaks
(Image: motan)*

*The blanketing bin BB 60,
suitable for 25kg sacks,
protects the granulate
from the absorption of
moisture and keeps the
area around the
processing machine clean
(Image: motan)*



In order to protect sensitive materials from moisture absorption and contamination, motan has developed a practice orientated system that is easy to operate. Users typically use pre-dried plastic granulate from sacks, particularly for small part production. If these sacks are not speedily emptied during continuous production, the granulate will, depending on the type, absorb moisture from the air relatively quickly and the processing characteristics will be changed.

Sage and dry

Protecting small and large material quantities from moisture

This can be prevented with the use of motan's mobile blanketing bins: The new type BB 60, suitable for 25kg sacks, requires only minimal amount of oil and water free air (adjustable according to the material between 0.06 and 0.6 m³/h) from the compressed air system to keep the granulate in its delivered condition for long periods of time. A suction box enables the simple, dust free connection to the material transport of the machine. The optional fill level monitoring triggers an optical alarm when the minimal fill level has been reached. Due to the rolling frame the blanketing bin is easy to operate and can be deployed flexibly. Particularly for small part and micro injection moulding, which often requires very narrowly tolerated material properties, stable processing parameters with minimal energy input can be guaranteed. An option without blanketing bin serves purely as a transport and storage container for granulate with low moisture affinity which keeps the material safe from contamination. Both types also prevent material losses due to direct use of sacks as well as contamination of the material and uncleanliness around the machine.

Dry from the octabin into the machine

Larger material quantities are typically drawn from octabins of varying sizes, provided that a central material supply is

not available. The danger of moisture absorption is also present here after opening the inner foil, resulting in the change of important material properties. This can be prevented with a light weight yet robust blanketing cover BO 1500 made from polycarbonate from motan.

Two self-sealing openings for suction pipes with 45 and 60mm diameter as well as handles enable simple and safe operation.

The interior of the octabin can be monitored due to the transparent material. Very small amounts, adjustable between 0.24 and 3 m³, of oil and water free air from the compressed air system prevent the absorption of moisture even for extremely hygroscopic materials such as PA6.

This guarantees stable processes with minimal effort for the entire length of the extraction from the octabin, even during longer production breaks. Expensive and time-consuming subsequent drying of open containers is saved. An alternative cover without blanketing device is suitable for use with materials which are not sensitive to moisture. The ergonomic cover protects the contents from contamination and the environment from granulate dust. Both types can be used with all standard European octabins.

New Range makes its Debut

innovative Technical and Design-Based Features

Nowadays, all industrial products are designed with a view towards recovering and recycling as many reject components as possible. In certain sectors, for example in the Food&Beverage packaging sector, a decision is often made not to change raw material, in order to continue the existing recycling channels and methods. The need to develop recyclable materials influences and determines choices in the research and development sector. For this reason, granulators have assumed a fundamental role in the plastics sector, having been specifically designed to recover plastics processing waste and make it reusable.

Piovan has redeveloped its range of recycling products introducing very high quality machines able to satisfy all recycling needs throughout the plastics sector. In all cases where plastic is used in the packaging, medical, automotive, textiles and electronics sectors, recycling is common practice, confirming the need for increasingly efficient and reliable granulators. Piovan has therefore introduced a new range complete with small, medium and large granulators, characterised by innovative technical and design-based features.

Most importantly, all new machines are fitted with an absolutely unique tangential cutting system. The rotary blades are inclined with respect to the fixed blades and are positioned as close as possible to the geometric tangent of the cutting circle, therefore optimising and improving cutting precision. In this way, high production capacities are achieved using smaller motors, with the additional benefit of minimising dust production and heat generation. These features ensure a more regular cut and more dimensionally consistent regrind.

Without a cutting chamber of this quality, the regrind, in addition to being irregular, will also have a higher dust content and will therefore be more difficult to process.



The new Piovan granulators are a step ahead of current versions available in the market thanks to the way they are manufactured

The cutting chamber is made from machined pieces, which are then assembled rather than being cast or welded. This design has enabled the construction of high-precision components that improve the efficiency of the cut and the quality of



the ground product, while improving the life of the granulator, as worn pieces can be replaced.

Another distinctive feature of Piovan granulators is the possibility for customisation. Even the most basic versions can be modified to suit the specific needs of the process (e.g. blow moulding, extrusion, injection) and to comply with specific customer requests in terms of space, granulator loading and unloading requirements and protection of the operating environment - these machines also guarantee extremely low noise levels.

N35-60: the state-of-the-art granulator

At Fakuma 2015, Piovan presented the N35-60, a machine encompassing all of the characteristics described above, in addition to featuring a 90° adjustable hopper for 4 loading positions, ensuring that if fed by conveyor belt, the direction of the belt can always suit the granulator hopper inlet. Maintenance is therefore simplified and less operating space is required.

Fast access to the machine is another important factor, given that in certain operating conditions cleaning operations may be necessary on a daily basis. This feature is a response to a specific request by numerous users who need to insert the granulators at the end of production lines where space is often limited.

N35-60 is part of a family of three granulators designed specifically to process large pieces or such as injection moulded food containers, large bottles or cans (blow moulding), tanks, bins, gardening products, toys (rotational moulding process). These objects are normally quite large and light and can therefore bounce and be difficult to cut.

Single-shaft shredders: the complementarity of a product

Complementing the range of granulators is the single-shaft shredder line, perfect for recovering purgings from start-ups or material replacements during all transformation processes. To make an example, if we consider a facility with 200 moulded items, equipped with 30 presses: in one year they may need to change moulds 600 times, each time the injection unit needs to be purged. The weight of an average purging (from 2 to 4 kilos) multiplied by the number of mould changes, produces numerous tonnes of engineering polymers that can be recovered with a shredder.

Shredders are machines whose role partially overlaps that of granulators and sometimes even integrates their function. At times, to granulate and recover medium to large-sized waste, it may be more convenient to use a shredder rather than a large-sized granulator. Granulated waste can then be ground by smaller and more economical granulators.

With the same-sized parts, a shredder uses much smaller motors compared to a granulator, which translates into significant energy savings in cases where high throughput is not necessary.

The Piovan range of single-shaft shredders includes 4 different models, each with a hopper that can vary in size from 600x600 mm to 1500x1500 mm.

Piovan recycling line: excellent results using less energy

We've already mentioned that one of the advantages of a tangential cut, with the same size parts, allows us to use much smaller motors.

Piovan granulators are also fitted with energy efficient electrical and control systems: the entire transmission system has in fact been revised to achieve effective energy savings when used 24/7. Even if the granulator doesn't work continuously, it is possible to optimise peak loads to reduce energy consumption.

For example, in the case of blow moulding, the granulator is used heavily at start-up, while during operation it is used intermittently to grind 20-30% of production. Between one mould and another there are a series of idle periods in which the granulator is inoperative, even if the motor remains on. The energy saving system intervenes in this case to manage the idle periods and optimise consumption.

The new range of Piovan high-efficiency granulators guarantees energy savings between 15% and 35% depending on the application.

► www.piovan.com

Low Built Base granulators for sheet and film

Size reduction equipment specialist Rapid has launched the LBB 300 series, a granulator with a very low height for handling sheet and film scrap. The new unit (LBB stands for Low Built Base) is intended principally for use in-line with a thermoforming unit, where its very low height allows it to be located directly under the output conveyor, saving valuable floor space.



The LBB 300 series, which appeared in prototype form at K 2013 in Düsseldorf two years ago, made its official commercial debut at the Fakuma show in Friedrichshafen, Germany, on October 13-17. It is available worldwide. Height of the LBB 300 series is just 600 mm (excluding feeder) and it is available in three widths: 900, 1200 and 1500 mm. The unit can be equipped with a rollfeed unit synchronized to the thermoforming line speed, or with a simple tray that collects skeletal frames as they fall from the line. The modular granulator can also be configured to fit directly under a shredder to provide final size reduction, without the need for the conveyor belt used in common practice for connecting the two units. Rapid offers the LBB granulator in versions with various types of rotors and hoppers, depending on the application. The very compact design of the LBB 300 series means that it takes up very little extra space on the production floor. Depending on model, width is between 2000 and 2300 mm, and depth is 700 mm. It is designed to handle film and sheet up to 8 mm thickness, depending on material. "We are really delighted with our latest addition to the extensive Rapid range of granulator solutions," says Bengt Rimark, Sales and Marketing Di-

rector at Rapid. "The new LBB 300 series represents what we are all about at Rapid - innovative, flexible and highly-efficient space and cost beneficial granulator systems that meet our customers' needs." The LBB 300 series uses a true scissors cutting action to provide clean and precise cutting of sheet and film, and high quality regrind. The rotor on all models is 300 mm in diameter, fitted with six, eight or ten blades depending on model size. The two smaller units have six fixed knives, while the largest has nine. Units can be fitted with motors rated at between 7.5 and 30 kW. Maximum throughput capacities range from 800 to 1200 kg/h. Output can be transported via a vacuum conveyor straight back to the production line for reprocessing. All units are fitted with a rotor stand-still guard for operator safety. The two larger units both feature split screens and split screen boxes for extra ease of service and maintenance. The equipment is mounted on a solid stand with castors for ease of movement when required. Basic units weigh between 1200 and 1500 kg, depending on size.

The horizontal slide winder of the MIDEX-HSD model type newly designed by Reifenhäuser Cast Sheet Coating enables to produce reel diameters of up to 1200 mm without problem. The horizontal slide winder of the MIDEX-HSD model type newly designed by Reifenhäuser Cast Sheet Coating enables to produce reel diameters of up to 1200 mm without problem.



New generation winders

Reifenhäuser Cast Sheet Coating has consistently expanded and updated its portfolio of line components, always with a clear focus on customers' needs. Especially with the introduction of the new MIDEX-HSD winder model type Reifenhäuser was right on target: In 2015, five cast film lines equipped with the new winder for the production of Polypropylene (CPP) packaging film were sold.

In Europe many producers prefer finished film rolls which can be directly processed after storage without the need for rewinding and slitting. In contrast to that, jumbo rolls are demanded outside Europe. Sales manager Mark Borutta explains why: "Customers who want to use latest generation metallizers demand reel diameters of up to 1200 mm which, unlike 1000 mm diameter reels used so far, give 45 percent more running film meters." The advantage is obvious: The metallizer can be operated longer and thus more efficiently since downtimes during a reel change can be reduced by one third - that means 30 to 45 minutes, depending on the model type and skills of the operator.

The new design of the MIDEX-HSD winder can handle such large diameters without problem. Mark Borutta explains: "The reel is no longer moved by a rotating arm or turret mechanism, but slides horizontally onto the machine frame as the diameter is growing. The working principle of the horizontal slide winder enables considerably higher reel loads to be taken up." The result is reels of larger diameters. These Reifenhäuser

winders are designed as a standard to produce up to three webs (additional webs are possible on demand). Depending on the winding shaft used, the maximum reel diameter of 1200 mm can even be obtained with multi-web winding. Beside the established rotary arm winders of the MIDEX-RA model type that are specially designed for the production of finished reels of smaller diameters up to 1000mms, the horizontal slide winders of the MIDEX-HSD model type now added to Reifenhäuser CSC's portfolio are suited for customers who need large diameters to produce jumbo reels. Mark Borutta takes a look into the future. "We are already about to plan the next step", he says and explains further: "Should the trend continue, especially for metallizers, we will make reel diameters of 1500mm possible." CSC's range of products is complemented by MIDEX-HSS horizontal slide winders that are specially optimized for thicker and sturdier films, for example barrier films.

► www.reifenhäuser.com

Precision Speed and Length Measurement

Precise knowledge of length and current speed is a key cost and process optimization factor in the production of sheet goods and cables. Wear and slip push material costs up, but companies today can no longer afford to produce rejects. Quality is in demand – From the outset.

The LSV 1000/2000 velocimeters from ZUMBACH support manufacturers when monitoring quality in steel, cable, wire and tubing production. They exceed the performance of conventional contact-based measuring methods, at the same time offering maximum robustness with minimized maintenance requirements and costs.

The compact device provides length and velocity data quickly and reliably for both process control and cut-to-length applications. Precise detection of very small movements is possible because the measuring accuracy is not dependent on the speed. The LSV 1000/2000 makes it possible to:

- Rapidly adjust the desired measuring field: The device is a compact all-in-one system and can be easily integrated into production processes. The visible lasers simplify alignment in the measuring field.
- Measure immediately – with mobile or remote monitoring: Recalibration is superfluous. Its low weight of just 4.3 kg and the supplied mobility kit allow rapid mobile deployment as well as the connection to a laptop. The sensors are immediately ready for use and feature a universal power supply and a LAN connection.
- Optimize production processes – irrespective of the surfaces, materials and temperatures: The LSV length and speed sensors can be used in a huge array of environments. They are ro-



LSV 2000 Velocimeter

bust enough to supply reliable results even in adverse conditions: the LSV 1000/2000 measure reliably on virtually any surface, e.g. steel, shiny aluminium, oily sheets, wire and cable. Certified for protection classes IP 66 and IP 67 (in acc. with EN 60529), the robust sensor technology ensures reliable operation even under harsh conditions.

- Communicate effectively: The rapid, state-of-the-art signal processor is equipped with a powerful command system for efficient system communication via serial or Ethernet interface.

Favourable climate for the plastics industry



The plastics industry in ASEAN remains unperturbed by global developments that are also impacting the growth path of key industries. With K 2016, the world's largest trade fair for plastics and rubber, coming up in Düsseldorf, Germany, from 19 to 26 October, we take a closer look at this market.

The new norm of economic growths and trends such as oil prices, variable supply and demand, and weakening of most Asian currencies against the US dollar, have allowed the region's countries to rediscover their strengths to sustain growth either individually or as a part of the collective grouping of the 10-member ASEAN (Association of Southeast Asian Nation), which comprises Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei, Vietnam, Laos, Myanmar and Cambodia.

ASEAN's fertile consumer base with a combined population of over 600 million and a combined GDP of US\$ 2.6 trillion, as well as presence in the global market, enables the region to tap the right opportunities, hinging on the region's rising middle class sector.

One of ASEAN's top export sectors by value is plastics and plastic products earning US\$ 39.3 billion in export revenues in 2013. The sector's production rates have witnessed a steady average growth over the recent years, especially in the ASEAN-6: Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam, which account for more than 95 % of regional GDP, according to McKinsey & Company.

Vietnam's relatively nascent plastics industry had an average annual growth of 16-18 % between 2010 and 2015. Packaging accounts for 37.4 %, followed by consumer goods (27 %), construction (18 %) and



technical products (15 %). Yet, the industry is still at the “low end and of low value”, according to Vietnam Plastics Association (VPA), with a majority of exports being plastic bags to Japan. It also relies heavily on imported raw materials, like polypropylene (PP) and polyethylene (PE) resins, importing an average of 4 million tonnes of raw materials while domestic production totals 1 million tonnes.

Meanwhile, with a population of over 250 million, Indonesia's government has increased efforts to industrialise and develop the nation towards becoming the world's seventh largest economy by 2030. Its rising middle class, to double to 141 million people within the next five years, will drive plastics consumption. According to the Indonesian Packaging Association, food packaging accounts for 70 % of plastic consumption sales. The Aromatic, Olefin and Plastic Industry Association (Inplas) has set a 6 % growth in domestic demand for the plastics sector, sustained by an improving GDP of 5.3 % in 2016 and upbeat food and beverage and agribusiness sectors. One of ASEAN's top exporters of plastic products, Malaysia has over 1,500 plastic production companies that export to Europe, China, Singapore, Japan, and Thailand. The packaging sector accounts for 45 % of the total plastic consumption market, followed by electronics (26 %), automotive (10 %) and construction industry (8 %). However, due to a rise in Malaysia's minimum wage to US\$ 214 per month, plastic production costs have increased within the country by approximately 10 % over the course of 2015.

Thailand's plastic consumption is led by packaging (48 %), electronics (15 %), construction (14 %), and automotive (8 %). Its automotive sector attracts manufacturing opportunities, although its overall cost index (for example, energy, labour, and property) is 20 to 25 % higher than Indonesia, Vietnam and the Philippines, largely because of a high quality and mature automotive manufacturing ecosystem, including tiered suppliers of automotive components. The country has also invested US\$ 60 million into bioplastics development over the past seven years, with the government pumping in 80 % of this investment.

Export-oriented Philippines has witnessed weak exports performance, down by 5.8 % in the previous year, because of low demand from its top buyers: the US, China and Japan. The semiconductor and electronics industries account for the majority of the country's exports. Various measures are being instituted to boost exports, such as the Generalised Scheme of Preferences (GSP) of the European Union (EU) that is offering export opportunities to the Philippines by allowing less or no duties on exports to the EU.

Meanwhile, global chemicals hub Singapore, which has been voted the world's most expensive city for expatriates for the third consecutive year by the Economist Intelligence Unit (EIU), offsets its high costs by offering strong connectivity through shipping routes, a developed infrastructure, manpower capabilities and ease of doing business.

Around 95 companies are represented on Singapore's Jurong Island, attracting investments in excess of S\$ 35 billion, according to the Economic Development Board. Providing a

plug-and-play environment, the island allows companies to quickly ramp up their operations, helping growth in both upstream and downstream sectors. Presently, companies like BASF, ExxonMobil Chemical, Lanxess, Mitsui Chemicals, Shell and Sumitomo Chemicals have plants. However, BMI Research expects Singapore to face an uphill climb in 2016, in the face of a Chinese downturn and regional oversupply. Thus, the country is banking on the speciality chemical sector as the next growth area, according to the Economic Survey of Singapore by the Ministry of Trade and Industry (MTI).

Pushing further the region's plastics industry, initiatives are being laid out by plastics trade associations, including the ASEAN Federation of Plastics Industries (AFPI), the Malaysian Plastics Manufacturers Association (MPMA), the Thai Plastic Industries Association (TPIA), and the Philippines Plastics Industry Association (PPIA). The associations are working in tandem with international-scale trade agreement blocs, including the ASEAN Economic Community (AEC), the US-led Trans Pacific Partnership Agreement (TPPA), and the China-backed Regional Comprehensive Economic Partnership (RCEP). The AEC, which was effected 1 January, features liberalisation of goods, investments and services and will enable plastic producing countries like Thailand, Malaysia and Singapore to lower duties on finished plastic products, machines and moulds to other member countries like Vietnam, which buys about 80 % of its plastic materials requirements from Thailand and Malaysia.

Indonesia also imports more than 40 % of its plastics requirements from Malaysia, Thailand, Singapore, Europe, and the US.

The US-led 12-nation TPPA will liberalise trade regulations between the member countries and also eliminate tariffs as high as 25 %. The easier access to overseas markets also post benefits for the countries.

The RCEP, made up of ASEAN members, China, Japan, South Korea, India, Australia and New Zealand, aims to consolidate the existing ASEAN FTAs and tie-ups with the other six partner economies. It will impose a 65 % tariff cut, with the percentage likely to increase to 80 % within a decade. The RCEP could also usher into the Asia Pacific Economic Cooperation (APEC)'s long-time prospect of creating a Free Trade Area in the Asia Pacific (FTAAP).

With these optimistic developments taking place, the ASEAN plastics industry will witness an expansion. In the ASEAN Business Outlook Survey 2014, by the American Chamber of Commerce Singapore and US Chamber of Commerce, Indonesia ranked as the most attractive country for new business expansion, followed by Vietnam, Thailand, and Myanmar. Availability of low-cost labour in countries such as Cambodia, Indonesia, Laos, Myanmar, and Vietnam, renders a competitive advantage. Overall, ASEAN's growing consumer bases, broadening of plastic import and export markets, and expanding foreign trading powers offers foreign investors significant opportunities.

All Issues Online

EXTRUSION

пласткурьер
ЭКСТРУЗИЯ
EXTRUSION RUSSIA EDITION

VM VERLAG
Virtuelle Magazine
EXTRUSION
INTERNATIONAL ONLINE

挤塑
EXTRUSION
ASIA EDITION

www.extrusion-info.com