THE MAGAZINE FOR PLASTICS RECYCLING & THE CIRCULAR ECONOMY

Recycling NEWS

Issue | 2017

INTWERVIEW
Clean performance

BEST PRACTICE
Zero waste as a money maker

PRODUCT WORLD
Innovation VACUREMA®
Inline Preform

Editorial

ODOUR DOWN, QUALITY UP.

Klaus Feichtinger
EREMA CEO

Manfred Hackl
EREMA CEO

Refreshing news for recyclers, plastics processors and manufacturers of branded articles: together with the proven INTAREMA® TVEplus® machine, the innovative ReFresher technology removes even stubborn odours from contaminated post-consumer input material and turns it into odour-optimised premium pellets. This opens the door to a broad use of recycled pellets in many new products which we use in our daily lives. At the same time it is a significant contribution which underpins the circular economy approach with concrete solutions. See our leading article on pages 6 to 11 for all the details.

We also have refreshing news from the beverage sector. SIPA and EREMA presented the direct processing of washed PET flakes to make food contact compliant preforms on the innovative PET Inline Preform system in September 2017. The system passed the test in impressive style and visitors found it convincing. Read more about it from page 18.

Offering our customers quality so they can produce quality is a clear, guiding principle for the company EREMA. This is why the subject is always top of the development agenda. One current example: the new QualityOn measuring systems which already inform the user about MVR and colour values during the ongoing machine process are practical assistants in achieving constantly stable melt and pellet quality. Furthermore, the combination with re360, our new MES, secures the long-term documentation of quality results and process parameters (pages 14/15).

Plus – and this is also relevant with regard to quality: we have optimised the Laserfilter rheologically and thus achieved even gentler filtration. In the interview with Robert Obermayr you will also find out why we founded the business unit POWERFIL which now offers you our proven, high-performance melt filters also as individual components for existing extrusion plants.

Customer reports about Coveris and Cushing Plastic in the Best Practice section of this issue also outline the fact that film producers not only save valuable resources but also money thanks to in-house recycling.

We wish you an informative read and refreshing insights into the exciting world of EREMA.

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RIGID MATERIAL TESTING ADDED

> EREMA NORTH AMERICA TECHNICAL CENTER EXPANSION <

EREMA North America (ENA) extended its customer trial facilities at the beginning of 2017. Thanks to the addition of an INTAREMA® TVEplus® RegrindPro at the Technical Center, existing and potential customers from the USA and Canada now have a total of five recycling machines at their disposal.

The new addition to the machines which make up the Technical Center is a brand new RegrindPro, with top technology for the efficient processing of regrind material. It features a high-performance EREMA Laserfilter which enables you to remove unwanted impurities even from heavily contaminated materials – including contaminants such as rubber, silicone, paper or aluminium which are otherwise difficult to filter out.

RECYCLING LIVE ON SITE

With this new machine at the Ipswich, Massachusetts facility, ENA can process an even broader range of materials – from clean production waste and regrind to heavily contaminated post-consumer material. "We offer our existing and potential customers the opportunity to recycle their material live on site. Thanks to the five recycling machines which are now available we can address customer requirements with even greater precision. With our trials the technology can be customised to meet the exact requirements of the respective material and product. At EREMA customers base their decision on facts and the pellets they hold in their hands," says Mike Horrocks, CEO EREMA North America.

THE RECYCLING SYSTEMS AT THE EREMA NORTH AMERICA TECHNICAL CENTER AT A GLANCE:

- New: INTAREMA® 1108 TVEplus® RegrindPro with Laserfilter
- INTAREMA® 1108 T with EREMA melt filter SW RTF
- INTAREMA® 1108 TVEplus® with EREMA melt filter SW RTF
- INTAREMA® 605 K
- ISEC 301E – Integrated Shredder Extruder Combination from EREMA's sister company PURE LOOP

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THE PROOF IS IN THE PLASTIC

> COMPELLING BENEFITS FOR CUSTOMER VAN WASTECO <

Van Wasteco of Delta, Canada, processes waste plastics from the post-consumer and industrial sectors. These include printed film waste and plastic pails to make HDPE and PP recyclates. The processors operate several recycling plants and have placed their trust in EREMA for over 15 years. "Besides the technology itself, it is EREMA's approach to service that we find compelling. The employees are dedicated, friendly and, above all, competent. Moreover, we appreciate the advice they offer to us at all times and regardless of whether we intend to make a purchase," says David Hetherington, Plant Manager at Van Wasteco.

EREMA LASERFILTER – THE DECONTAMINATOR

Processors of post-consumer material face an ever growing challenge: despite input materials being more and more contaminated, customer requirements regarding recyclate quality are increasing. In the case of Van Wasteco, material contamination was largely due to aluminium and paper residues. David Hetherington approached EREMA North America in April 2017 to discuss the possibility of upgrading his EREMA 160 TVE with a Laserfilter. "The innovative Laserfilter scraper technology achieves extremely high throughputs for customers while maintaining impressive melt quality. The system specialises in high contamination rates and the recyclates have a level of quality which cannot be reached by conventional melt filters," says Martin Baumann, Vice President Sales at EREMA North America.

COMPARISON MAKES IT CLEAR

A two-day customer trial was carried out at the EREMA North America Technical Center to compare the actual performance of a standard filter system with the Laserfilter. David Hetherington and his team took their own material – a mixture of PP and PE – from their Gifford plant with them. "EREMA made it possible to carry out a parallel trial with our own material both with and without Laserfilter. The first batch revealed no problems in processing and produced top quality pellets. The second batch was trickier as the degree of contamination was much higher. The EREMA team worked on the settings until even our most contaminated material was processed into high-quality recyclates thanks to the Laserfilter. This was the moment, if not earlier, that we were absolutely convinced and decided to invest in a Laserfilter," says Hetherington.

The EREMA Laserfilter was able to remove the aluminium and paper residues in the regrind material of Van Wasteco perfectly at the Technical Center.

Story

THE REFRESHER

> ODOUR DOWN, QUALITY UP <

The INTAREMA® TVEplus® and the new ReFresher from EREMA form a highly efficient anti-odour duo. Their respective tasks are clear: the INTAREMA® removes above all the high volatile odour substances during extrusion while the downstream thermal-physical cleaning process attends to the high molecular odour matter. The higher-grade, odour-optimised pellets give users numerous benefits such as higher value added and new sales markets for recyclates from production and industrial waste.

Post-consumer material, especially household packaging waste, is considered to be plastic which is difficult to recycle due to impurities and the fluctuating degree of contamination. A typical problem is that the packaging absorbs the odour of the food, cosmetics or cleaning agents inside it. The high molecular substances which migrate into the plastic are particularly stubborn odours. Further potential sources of odour cannot or can only partly be removed when sorting and washing. These include wood residues, paper remains such as labels, rubber- and silicone-like contaminants, printing inks and food residues such as oils or fats. In conventional processes these impurities in the extruder input material can burn easily during extrusion, change chemically as a result and thus create an odour which transfers to the plastic. This can be avoided through the mechanical recycling of post-consumer waste in which degassing and filtration techniques in particular inhibit the development of odours. In EREMA's INTAREMA® TVEplus® system the material's dwell time inside the large-scale preconditioning unit of up to one hour already reduces the odour. This is where the input material is heated to the polymer-dependent operating point.

Thanks to the large active surface, high volatile, low molecular substances can escape from the material and are already removed by the integrated Airflush technology prior to extrusion.

Following pretreatment the dry, degassed and warmed through material is dosed into the directly connected extruder. It is precisely in this transitional area between the preconditioning unit and extruder that Counter Current technology shows how effective it is. The extruder always has the ideal filling level and is never overfilled, making it much easier to regulate.

The second degassing phase, referred to as reverse degassing, takes place inside the extruder, whereby – thanks to a special screw design – any gas inclusions from the melt are sent back to the preconditioning unit where they are removed. This is followed

» Products in the home, cosmetics and design areas call for high-grade, odour-optimised recyclate.

Clemens Kitzberger

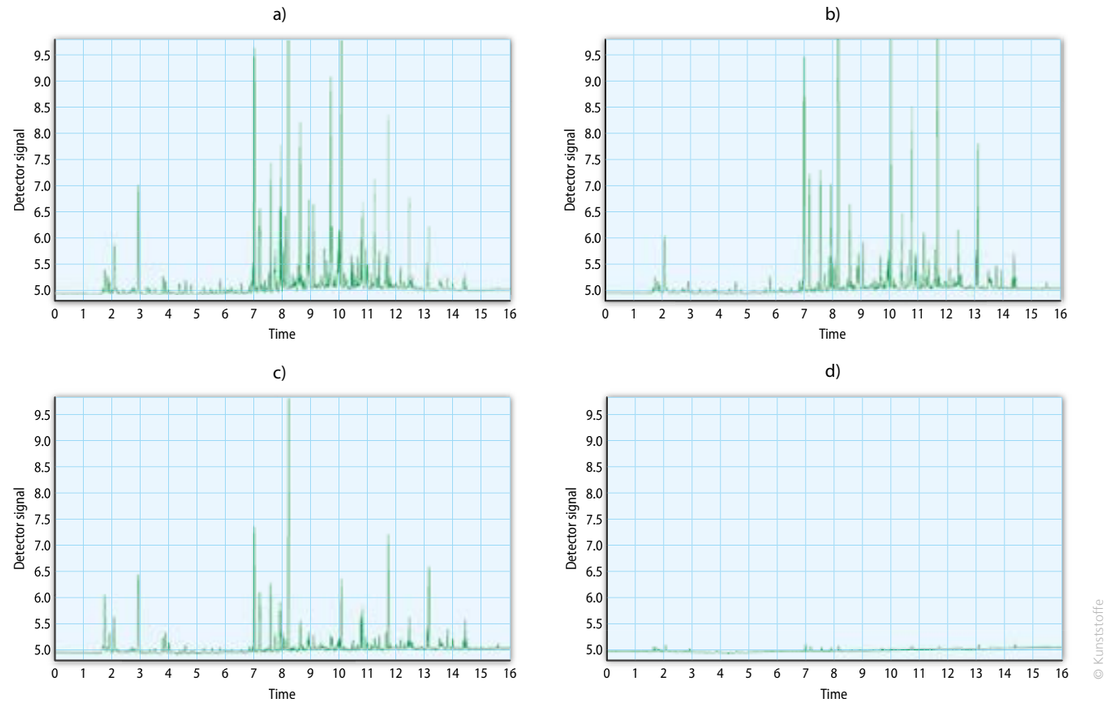


Chart 1: Gas chromatography VOC analysis to assess odour optimisation: a) Input material before extrusion process, b) After the preconditioning unit (before entering the extruder), c) After the extrusion process with INTAREMA® TVEplus® RegrindPro, d) After a further 7 h dwell time in the ReFresher (® Fraunhofer IVV)

by gentle melting up to filtration. The short length of the screw means that the material is subjected to only minor shear stress. The gentle treatment at a low melt temperature and low shear forces mean that impurities such as paper or wood, rubber or silicone do not burn which also prevents further odour development. The contaminant particles remain large enough for the Laserfilter to remove them, besides foreign polymers such as e.g. PET, PA or in part PP efficiently before they can form unpleasant odours. In the patented TVEplus® zone the melt is subsequently homogenised and brought to the necessary temperature for extrusion degassing to enable any remaining gas inclusions and odour substances to escape from the melt in the final double degassing zone.

At this point, i.e. after extrusion, the odour has been removed to such an extent that the recycled pellets produced from post-consumer materials are already suitable for many applications. Such end products are primarily extrusion products such as construction film, carrier bags, bin liners and pipes or injection moulding applications such as covering caps.

LOW VOLATILE ODOURS OUT

Up to now, however, it has not been possible to adequately eliminate odours created by low volatile, high molecular substances. To either mask such odours or capture the odour-relevant molecules, additives can be added to the extrusion process.

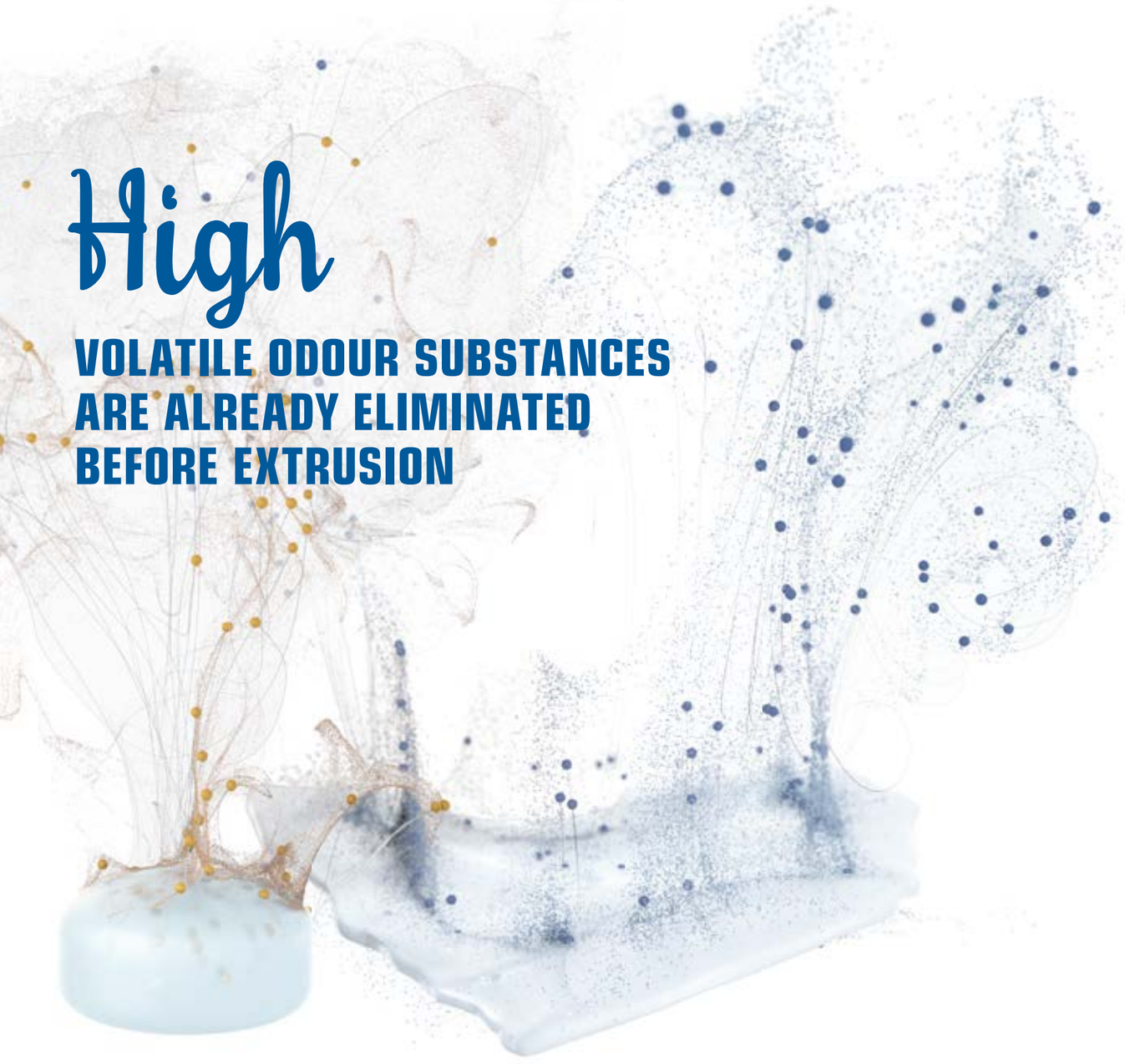
This approach, however, contradicts the circular economy ideal. Because when the changed plastic is recycled once again at the end of its product cycle, the recycler is then confronted with additional additives – besides contaminants – which in turn influence the property profiles of the plastic and may release the odour substances previously absorbed when the new processing begins.

Instead, EREMA uses a thermophysical process to dispel odours. In this process the warm, recycled pellets, which are still hot on the inside, pass from the extruder via a conveyor system into the process hopper where they are brought to the desired process temperature. The pellets are flushed with air as a purge gas to discharge and remove the odours. The ReFresher uses the principle of "first in, first out". The recyclates as a whole have a narrow dwell time spectrum as a result. After the required process time, the recyclate enters a cooling hopper in which it is brought to filling temperature. The circular approach was a conscious consideration in the design of the ReFresher. The warmth, for example, which is created in the final pellet cooling is passed back to the process hopper to bring the recyclates to the necessary process temperature. Only a minimum amount of energy from an external source is required. The customer's existing sources of heat can also be used here, such as hot steam from the washing plant. As hardly any moving parts are used inside the

ReFresher, availability is high and servicing costs are low.

HUMAN NOSE AS SELECTIVE DETECTOR

Volatile Organic Compounds – so-called VOCs – represent a significant group of odour substances. The most common method of analysis is gas chromatography, which determines changes in molecular mass. Due to their low molecular mass, high volatile substances vaporise faster than the low volatile and high molecular substances. Limonene, which has a slightly citrus smell, often acts as an indicator substance. The Institute of Analytical Chemistry and Food Chemistry at the University of Graz in Austria investigated the relationship between VOC values determined by gas chromatography and odours sensed by specially trained assessors using volatile and odour-active compounds from recycled plastic samples. Gas chromatography-olfactometry, in which the human nose is used as a selective detector for odour-active compounds, enables the identification of odour-active parts in samples with a complex composition.



High

VOLATILE ODOUR SUBSTANCES ARE ALREADY ELIMINATED BEFORE EXTRUSION

Left: Post-consumer material from the municipal sector has not only heavy contamination but also intense odours. Right: Odour-optimised premium pellets – the result of the combined INTAREMA® TVEplus® technology and subsequent ReFresher process.

In this method, the volatile compounds are separated using gas chromatography and the substances which have been separated are smelled and evaluated at the so-called sniffing port by the assessors. A conventional parallel detector is used for identification. Both "traces" are laid over each other to mark the odour-active sections. The compound tests show that a strong sense of odour is possible despite low VOC values measured. Odours are, therefore, identifiable when no VOCs are measurable, i.e. the odour-causing substances lie under the detection threshold of the detector. Another finding is that low detected VOC values correlate with a lower odour sensitivity of the assessors. All in all it is to be noted that the samples have a high proportion of VOCs prior to the extrusion process which is then reduced in the course of processing. The odour of the samples develops as a sum of numerous odour-active individual compounds, some of which have such a high odour potential that they lie under the detectability of the "classic" detectors but can be identified without difficulty by the human nose.

ODOUR SUBSTANCES CLEARLY REDUCED

A series of tests carried out on behalf of EREMA by the Fraunhofer Institute for Process Engineering and Packaging (IVV) examined volatile, organic substances in washed HDPE regrind from shampoo bottles – a typical post-consumer material from the municipal sector. The VOC proportion in general and the indicator substance limonene in particular were measured in gas chromatography analyses.

The limonene value of the HDPE regrind alone prior to the extrusion process is 73 ppm (a). After one hour's dwell time inside the preconditioning unit (before entering the extruder) many VOCs have already been considerably reduced (b). Following the extrusion process through the INTAREMA® TVEplus® RegrindPro the limonene value of the recycled pellets decreases to 20 ppm and the values of the measurable, odour-causing VOCs likewise fall (c). After a further 7 hours of dwell time inside the ReFresher the limonene value finally amounts to only 0.1 ppm and the other VOC values are also further reduced (d).

How odours are measured ...

According to a study [1], humans can distinguish between over one trillion different smells. Volatile Organic Compounds (VOCs) represent a significant group of odour substances. The most common method of analysis is gas chromatography, which determines changes in molecular mass. Due to their low molecular mass, high volatile substances vaporise faster than the low volatile and high molecular substances, which can only be expelled using special techniques. Limonene, which has a slightly citrus smell, often acts as an indicator substance. The major challenge with odour substances lies in the fact that the odour of VOCs can be sensed by humans even in a concentration which is far below the usual detection threshold of 1 µg/m³ [2]. Revealing analyses, therefore, require the combination of gas chromatography findings and sensory panel analysis. These panels comprise specially trained odour-sensitive people who judge the odours. Sensory panels are put together in different forms due to differences in the perception of odours according to region and culture.

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Literature: [1] C. Bushdid, M. O. Magnasco, L. B. Vosshall, A. Keller: Humans Can Discriminate More Than 1 Trillion Olfactory Stimuli. Science 21 March 2014, Vol. 343, No. 6177, P. 1370–1372; http://science.sciencemag.org/content/343/6177/1370?sid=7da0ad51-d6bb-4aea bfff-850403786590
[2] Austrian Federal Environment Agency: Guide to Interior Hygiene in School Buildings, P 47; http://www.umweltbundesamt.de/sites/default/files/medien/publikation/long/3689.pdf

Interview

CLEAN PERFORMANCE

> NEW UNIT POWERFIL WITH STRONG STANDALONE FILTERS <

With the founding of POWERFIL, EREMA has extended its portfolio and now also offers its proven melt filters as individual components for existing extrusion plants. In this interview, Robert Obermayr, the head of this new EREMA business unit, talks about the background and new technical developments and he explains why the Laserfilter in particular is so powerful.

POWERFIL means that EREMA will be increasing its sales activities with standalone melt filters. What resulted in the decision to gain a foothold in this market segment as well?

The EREMA Laserfilter, here in a twin design, makes for continuously high melt throughput even with high degrees of contamination – now available from POWERFIL as a high-performance standalone system.

Robert Obermayr: EREMA is known above all as a supplier of complete recycling systems, in which the extruder, filtration and all other necessary components form a compact unit. This is our core business, it's where we come from. We can see quite clearly, however, that the amount of heavily contaminated input materials has increased enormously in recent years – and with it the demand for particularly high-performance filtration systems. POWERFIL is our way of meeting this demand. We give users – regardless of whether they are recyclers or producers – the opportunity to upgrade their existing extruders with very high-performance filters which have been tried and tested many times.

You say "tried and tested many times", this means that the filters are existing products?

Robert Obermayr: Yes, existing filters which have been working successfully on our machines – and on extruders of other suppliers in some cases – for many years. They have been and will continue to be developed even further and excel at handling even the toughest of recycling jobs, such as the filtration of heavily contaminated municipal post-consumer waste. This is our strength and what gives us credibility. EREMA has been in plastics recycling for over 30 years and the POWERFIL filters have these genes.

A concrete question: what filter systems does POWERFIL offer exactly as individual components?

Robert Obermayr: The new business unit offers the partial surface backflush filter system SW RTF and the EREMA Laserfilter. With the optimised Laserfilter in particular we have a functional concept which unites high quality requirements and stable, inexpensive operating costs. We carried out some very effective fine tuning on this high-performance filter in 2013: thanks to the redesign of the scraper star and discharge system, contaminants are now removed extremely quickly – a clear benefit in terms of cleaning efficiency and filtration reliability. The filter was enhanced even further in 2016 and 2017, too: rheological optimisation of the support breaker plate enables even gentler filtration and in turn a reduction of flow resistance. And: a continuous filter system with a screen fineness of 70µm is now in use for the first time.

For which applications is the EREMA Laserfilter particularly suitable?

Robert Obermayr: The high-performance filter is ideal for high contamination rates, high throughputs and when top-quality pellets are required – thus making it perfect for classic post-consumer applications. The technology, however, also plays out its strengths in another area: more and more PET customers count on our Laserfilter. The reason for this is that the increased use of rPET in end products requires high process stability despite higher degrees of contamination at times. The benefits are clear to see: the Laserfilter processes input material with a degree of contamination of over one per cent without any difficulty. The functional principle avoids dead spaces and makes for short dwell times, which in turn prevents "black spots" with PET. A system of this kind, which offers high melt and recyclate quality, has the edge especially in the case of food contact grade applications. Moreover, thanks to the newly developed discharge unit, melt losses are reduced from the normal 1 to 2 per cent with piston filters down to a tenth.

POWERFIL advertises with the slogan "Plug in Performance". What do you mean by this?

Robert Obermayr: It's more than a slogan, it's a commitment to our customers. Performance stands for what our filters achieve: high capacities even with high degrees of contamination, recycling reliability that has been tried and tested thousands of times, fine filtration and perfect melt quality, high process consistency, fast amortisation and robust systems with a long lifetime, this is all performance. And with "plug in" we express that it is extremely easy for users to connect this performance package to their existing extrusion facilities: thanks to fast filter availability and only a few necessary manual steps, the customer can produce without delay.

POWERFIL – PLUG IN PERFORMANCE

With its new business unit POWERFIL, EREMA offers its thousand times proven melt filters as standalone systems for extruders which come from an alternative supplier. The offer is centred around the extremely high-performance EREMA Laserfilter filtration systems and the partial surface backflush system SW RTF.

POWERFIL EREMA FILTER SYSTEMS

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QUALITY ONLINE UNDER CONTROL

> CONTINUOUS MONITORING OF COLOUR AND MVR VALUES <

Two new online measuring systems which EREMA offers under the name of QualityOn already inform the user during the ongoing process at the machine about MVR and colour values. The innovative tools are designed specifically for the higher requirements in recycling.

QualityOn – the new technology was presented for the first time at K 2016. There was keen interest among customers at the trade fair and over the following months. The innovation created by EREMA proves to be a real support during the recycling process. Two measuring units enable the continuous quality monitoring of colour and MVR (melt volume-flow rate) values at the machine during processing – so there is no need to wait until later in the laboratory. This saves users considerable time and labour compared to manual laboratory methods.

MEASURING QUALITY TO PRODUCE QUALITY

"The current trend towards quality pellets is certainly a reason for the keen interest in this new system. Producers of plastic articles, whether it is in the film packaging sector or in injection moulding, expect their pellet suppliers to provide homogeneous and process-stable starting material for their production process. And, in combination with our INTAREMA® machines, our online quality tools are practical aids in reaching this goal," says Clemens Kitzberger, Business Development Manager Post Consumer at EREMA.

QUICK RECOGNITION, QUICK REACTION

An important feature in order to produce recycled pellets with constant properties is the ability to define tolerance ranges for MVR and colour values. Machine operators are notified automatically as soon as the values measured leave the specified tolerance range and can thus take remedial action in the process at an early stage – or remove any nonconforming material immediately from the current process.

QualityOn:MVR

- Continuous online measuring of melt volume-flow rate (MVR) in real time directly at the machine
- Automated measuring process based on standardised laboratory method

- Straightforward and robust system
- Designed especially for recycling: unlike well-known online viscosity measuring systems which use gear pump technology and are designed primarily for clean polymers in the virgin material sector, the QualityOn:MVR measuring unit is designed especially for the higher requirements of recycling processes. It is, for example, insensitive to extremely small contaminant particles of 100-1000 µm which are common in post-consumer recycling.
- Possible to sort quality according to different viscosity grades by means of a downstream recycled pellet deflector
- Representative measuring: ingenious design ensures lowest possible influence on removed measuring charge through residence time
- "Clean" data: thanks to the innovative ContiFlush rinsing mechanism the measuring system is cleaned quickly and efficiently after every measurement; this means that results are not influenced by residues from previous measuring processes or contaminants in the volume measured
- Option: re360, the new EREMA Manufacturing Execution System, for transparent and clear visualisation, processing, analysis and long-term storage of the MVR data
- Available as a standalone system for retrofitting or for integrating in a new machine

QualityOn:Colour

- Precise online measuring of pellet colour in real time directly at the machine
- Online spectrophotometer detects the slightest differences in colour: High-resolution grid spectrometer ensures reliable detection of the smallest differences in colour which are not visible to the human eye – this means the information is available long before thresholds are reached
- Reliable and stable system based on long-lasting LED technology
- Practical teach function enables the straightforward learning of the desired production in line with the current colour
- An alarm is given if the colour is not within the defined tolerance range
- Perfect deflector setting: recycled pallets with the "wrong colour" are deflected out until production has become stable again – this means that a light production colour is not contaminated with darker material
- Visualisation of colour values: Standard: the practical trend display on the machine gives you a quick picture of time-dependent colour deviations Option: the new EREMA MES re360 offers even more transparancy, overview and analysis possibilities, including long-term data storage
- Low maintenance
- Available as a standalone system for retrofitting or for integrating in a new machine

FOOD CONTACT COMPLIANCE MADE EASY

> MPR® AS ADD-ON TECHNOLOGY FOR EXISTING EXTRUSION PLANTS <

The trend towards food contact grade rPET packaging continues relentlessly. If you want to upgrade your existing PET extrusion plant by adding this benefit of food contact compliance, proven and energy-saving MPR® technology from EREMA has been available for years. This technology has now been enhanced.

The abbreviation MPR® stands for Multi-Purpose Reactor. And the technology from EREMA truly deserves this attribute of versatility. The highly efficient crystallisation dryer handles the decontamination, drying, dedusting and crystallisation of different PET input materials – and manages all these tasks in just one single step. Input materials such as washed PET bottle flakes, ground PET flat sheet waste or virgin PET material plus mixtures of them are decontaminated and therefore already food contact compliant before extrusion.

OPTIMISED MPR®: POSITIVE CUSTOMER FEEDBACK

The technology is easily connected to existing extrusion systems. "The MPR® is becoming increasingly popular for customers who have a conventional crystalliser and a pre-dryer and are confronted with long process times and high operating costs. With energy consumption at only 0.1 kWh/kg, the MPR® is a crystalliser and pre-dryer at the same time, making it the economically interesting alternative," says Christoph Wöss, Business Development Manager for the bottle sector at EREMA.

On the one hand the relaunch of the MPR® last year aroused the interest of new customers and, on the other hand, is confirmation for many existing customers to count on EREMA technology in the future, too. "We at Sky-Light place our trust in the MPR® from EREMA when it comes to the food contact compliance of PET – and this is already the second time. In the new expansion of our production capacity we once again added an MPR® to the twin screw extruder," says Sky-Light owner Søren Larsen. "The growth in output through the increase of the bulk density of PET flakes and flat sheet waste and the stable IV value are more than convincing from the point of view of an entrepreneur." Sky-Light is a specialist for individual packaging solutions. The Danish company produces several hundred million snap-on lids, cups, inserts, blister and transport trays for customers in the food, electronics and pharmaceutical industry.

> **» WE PLACE OUR TRUST IN THE MPR® FROM EREMA WHEN IT COMES TO THE FOOD CONTACT COMPLIANCE OF PET – AND THIS IS ALREADY THE SECOND TIME.**
>
> *Søren Larsen, Sky-Light owner*

The technical and economical improvements in the course of the relaunch include being able to reduce the connected load by over 30 per cent while maintaining output. "The calculable operating costs in combination with the reliable output performance make for a foreseeable and short amortisation period," says Alimpet President Roberto Alibardi. The Italian company is part of the Aliplast Group and produces thermoforming sheet from post-consumer PET which is then used to make thermoforming containers for the food industry, for example. Besides two MPR®s the Aliplast Group also has VACUREMA® systems installed to produce food contact grade PET recyclates.

BETTER AUTOMATED AND EVEN MORE COMPACT

Additional improvements in the course of the MPR® relaunch include the higher degree of automation and even easier vacuum system maintenance. Furthermore, the process water tank has been replaced by a utility-free vacuum pump which in turn reduces operating costs. Thanks to an even more compact design the new MPR also requires 20 per cent less floor space.

Product World

PURE PREFORMance

> NEW TECHNOLOGY VACUREMA® INLINE PREFORM <

Innovation is a strong driving force in the beverage and liquid food industry. A genuine product innovation from EREMA and SIPA makes it possible for the first time to produce food contact compliant 100% rPET preforms from PCR PET flakes in a single working step.

It is clever to leave out things which are not necessarily required – and increase efficiency considerably as a result. This is also the guiding principle of the new VACUREMA® Inline Preform system. The groundbreaking innovation simply skips the otherwise necessary step of pellet production, thus creating food-contact compliant rPET preforms from post-consumer PET flakes in a single pass.

INNOVATION WITH NUMEROUS BENEFITS

Thanks to intensive research and development collaboration the two leading companies for efficient PET solutions – EREMA and SIPA – have been able to launch this new technology. It means a whole host of benefits for companies working in the field of preform manufacturing: the new process reduces energy consumption and streamlines logistics and processes – resulting in considerable savings in time and money in these areas. The system combines the benefits of proven VACUREMA® technology with the innovative XTREME preform production system of SIPA. By combining injection and compression techniques this system allows you to produce preforms that are up to 10% lighter than even the lightest injection moulded preforms – but without losing any key properties. The preforms which are made achieve the required mechanical properties for the stretch blow process, stand out through a constant and high IV value even with poorer input qualities and have convincing, top colour values.

HIGH ENERGY EFFICIENCY SAVES COSTS

The Inline Preform system is programmed through and through to save energy costs. Each system, VACUREMA® and XTREME, stands out through extremely energy-efficient performance. The ingenious combination of the two technologies increases this efficiency even further. This is because a comprehensive process is created in which the melt flows "at one heat level" and no intermediate cooling step is required.

» A GROUNDBREAKING INNOVATION FOR THE BEVERAGE AND LIQUID FOOD INDUSTRY.

FROM PCR PET FLAKES TO 100% RPET PREFORM DIRECT

- Everything in one working step: directly from PCR PET flakes to food contact compliant 100% rPET preform
- Top quality: preforms with best mechanical properties for the stretch blow process
  a) Constant and high IV value even with poorer quality input materials
  b) Top colour results
- High profitability
- Top energy-efficiency:
  a) Low specific total energy consumption
  b) No additional material pre-drying necessary
- Robust single-screw extruder: long service life and reduced maintenance costs
- Top-class full system competence: VACUREMA® in combination with the XTREME preform production system of SIPA

SIPA AND EREMA HOLD OPEN HOUSE

> LIVE PRODUCTION ON INNOVATIVE PET INLINE PREFORM SYSTEM <

A very special Open House was held from 4 to 6 September at the SIPA headquarters in Vittorio Veneto, Italy, where the unique direct processing of washed PET flakes to make food contact grade preforms was demonstrated live on the new PET Inline Preform system. The system will be in industrial operation next year.

Numerous representatives from the beverage industry and well-known brands attended the three-day Open House held by SIPA and EREMA and saw a compelling live production performance of the new VACUREMA® Inline Preform system.

"We previewed this technology at the EREMA Discovery Day 2016 and it is now ready for production. The PET Inline Preform system catches the spirit of the age and even goes one step further. There is increasing demand among customers for flexible and energy-saving processing possibilities. With this system we support them in remaining an innovative part of the ever developing plastics industry," says Christoph Wöss, Business Development Manager for Bottle Applications at the EREMA Group. Trials carried out previously on the PET Inline Preform system showed that the weight consistency, viscosity and colour values of the preforms – depending on flake quality – are on a par with those of virgin material.

"We were keen to show the first PET Inline Preform System to interested Open House guests. This innovative technology makes real the dream of a circular sustainable economy with results exceeding our most optimistic expectations at the beginning of the project. The rPET preforms have quality properties and performances comparable to the injection moulded preforms made in virgin resin. We are delighted about the strong interest and so many enthusiastic participants," says Enrico Gribaudo, General Manager of SIPA.

Open House of SIPA und EREMA (from left): Enrico Gribaudo, General Manager of SIPA, Anna Horecica Csiki, Product Manager PET Systems at SIPA, and Christoph Wöss, Business Development Manager at EREMA Group.

The new PET Inline Preform system combines the efficiency benefits of the proven VACUREMA® technology from EREMA with the innovative XTREME preform production system of SIPA.

The PET Inline Preform system enables the flexible direct processing of PET flakes to make food contact compliant inline preforms in just one processing step.

Best Practice
In-House Recycling

ZERO WASTE AS A MONEY MAKER

Thanks to the INTAREMA® 605 T, Cushing Plastic can now recycle edge trim from its CPP line profitably in-house and sell it at top prices – instead of selling the waste to external recyclers as before for a very low price.

Cushing Plastic already had a 16-year-old CPP production line. However, an investment in a new Colines flat film line meant both higher film output and more edge trim waste for the company located in Fanipol, Belarus. As selling the production waste to external recyclers was not very profitable, Cushing looked into recycling solutions offered by variety of suppliers.

THE DECISION-MAKING PROCESS

Nikolai Nichiporchik, Director of Cushing Plastic and himself a qualified engineer, compared the solutions available from Austrian, Italian and Taiwan based suppliers. He also visited a number of plants and asked users about their experience: "The feedback on EREMA systems was very positive. Another important factor in this respect was that EREMA was able to produce a machine with a short extruder screw on request. We decided in favour of EREMA based on our quality requirements – and we are glad that it is now part of our production facility."

Cushing can now sell their own recycled pellets for a price that is very close to what raw material would cost. "Before investing in the EREMA system we were asking around 0.25 euros for the in-house waste. Our sales price is now in the region of 0.90 euros. Taking into account labour and energy costs, we still make around 150 to 200 per cent more profit."

QUALITY BONUS PRECONDITIONING UNIT

The system installed here is an INTAREMA® 605 T. Thanks to the typical EREMA combination of a preconditioning unit and recycling extruder, films of varying thicknesses can be cut, heated and compacted to a uniform bulk density of around 350 kg/m³. The material which is compacted this way can be added continuously and pulsation and process fluctuations are ruled out. Another positive aspect of the preconditioning unit is the preheating of the materials so that less energy intake for plastification inside the extruder is required and thermomechanical stress on the polymer is minimised. Finally, the preconditioning unit also carries out the degassing process. This is because moisture deposits on the film scrap can occur from time to time due to fluctuations in temperature and air humidity when inhouse waste is kept in storage.

EREMA's customer service was what set them aside most from the other suppliers. This is what finally prompted Cushing Plastic to decide in favour of EREMA. "The customer service is outstanding. The sales manager for this region, Kalojan Iliev, often stops by just to see if there is anything he can do for us. We are a small client by EREMA's standards, but they treat us with a lot of respect. To be honest, before talking to EREMA we had a recycling plant manufacturer from Taiwan in mind to begin with. We were all set to sign the contract with them."

Author: Sebastian Reisig

More information:
https://issuu.com/reisigmedia/docs/fpt_4_2016

Best Practice
In-House Recycling

RECYCLING PRODUCTION WASTE

Wang on Fibres specialises in the manufacturing of durable polypropylene packaging and woven plastic bags. With an INTAREMA® TVEplus® the South African company has equipped itself not only for its current needs but also for future recycling challenges which will be more difficult to handle.

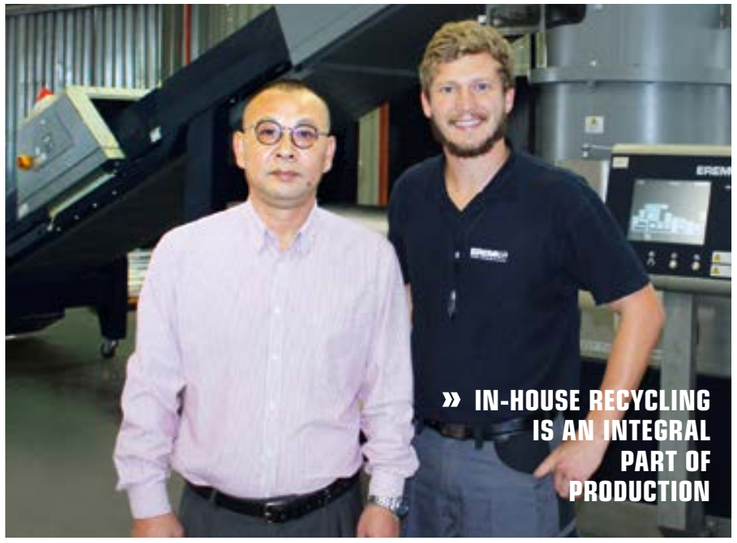
The fact that the company, which is located in Krugersdorp, South Africa, has 400 full-time employees and produces up to 12 million plastic bags every month is an indication of the success it has achieved since it was founded 32 years ago. Its customers range from small businesses to famous brand-name manufacturers in the fields of agriculture, food and the mining sector. Prompted by its constant growth and production volume, Wang on Fibres decided to integrate recycling into its production process and took a forward-looking approach when deciding which recycling technology to use. An INTAREMA® 1007 TVEplus® is used to process what is currently clean and lightly printed in-house waste.

FIT FOR THE FUTURE WITH INTAREMA

"As an entrepreneur, I want to achieve the greatest degree of flexibility possible. We decided to purchase the INTAREMA® TVEplus® because, depending on availability, we will be able to process wetter and heavily printed input materials with it in the future," says Lawrence Tong, CEO of Wang on Fibres. The proven principle of the TVEplus® technology – i.e. melt filtration upstream of extruder degassing in combination with powerful triple degassing – is often used for hard-to-process materials such as heavily printed input material.

SUCCESSFUL PARTNER RELLOY

"On average, we recycle 110 tonnes of input material a month and the new extruder technology has already proved its value here. In addition to EREMA's impressive engineering and machine performance, we are particularly happy with its service. In Relloy we have found a reliable local partner who enables us to achieve maximum efficiency in our recycling process," Lawrence Tong emphasises.



Ready for recycling: Lawrence Tong, CEO of Wang on Fibres, and Pierre La Grange from EREMA's South African agent Relloy, following the successful start-up of the INTAREMA® TVEplus®.

BUSINESS DRIVER IN THE REGION

The economic success of the company is accompanied by a special corporate philosophy, that of strengthening South Africa as a business location. Right from the start of its production chain, Wang on Fibres ensures that its raw material is sourced exclusively in South Africa. In turn, the plastic packaging and woven plastic bags enable food and raw material producers to offer their products to an international market. The company is currently looking into the option of adding the recycling of post-consumer plastic waste to its portfolio. "This would allow us to double our recycling quantity and process a further valuable source of raw materials in a sustainable and environmentally-friendly way," Lawrence Tong explains.

Watch The Movie
In-House Recycling

100 PER CENT BACK

The EREMA film crew were guests at Coveris Flexibles Austria, a leading manufacturer of plastic films for agricultural applications. Watch this short film to find out why Coveris attaches so much importance to recycling and the role the 20 EREMA machines play here in enabling all the recycled material to be put back into the process.

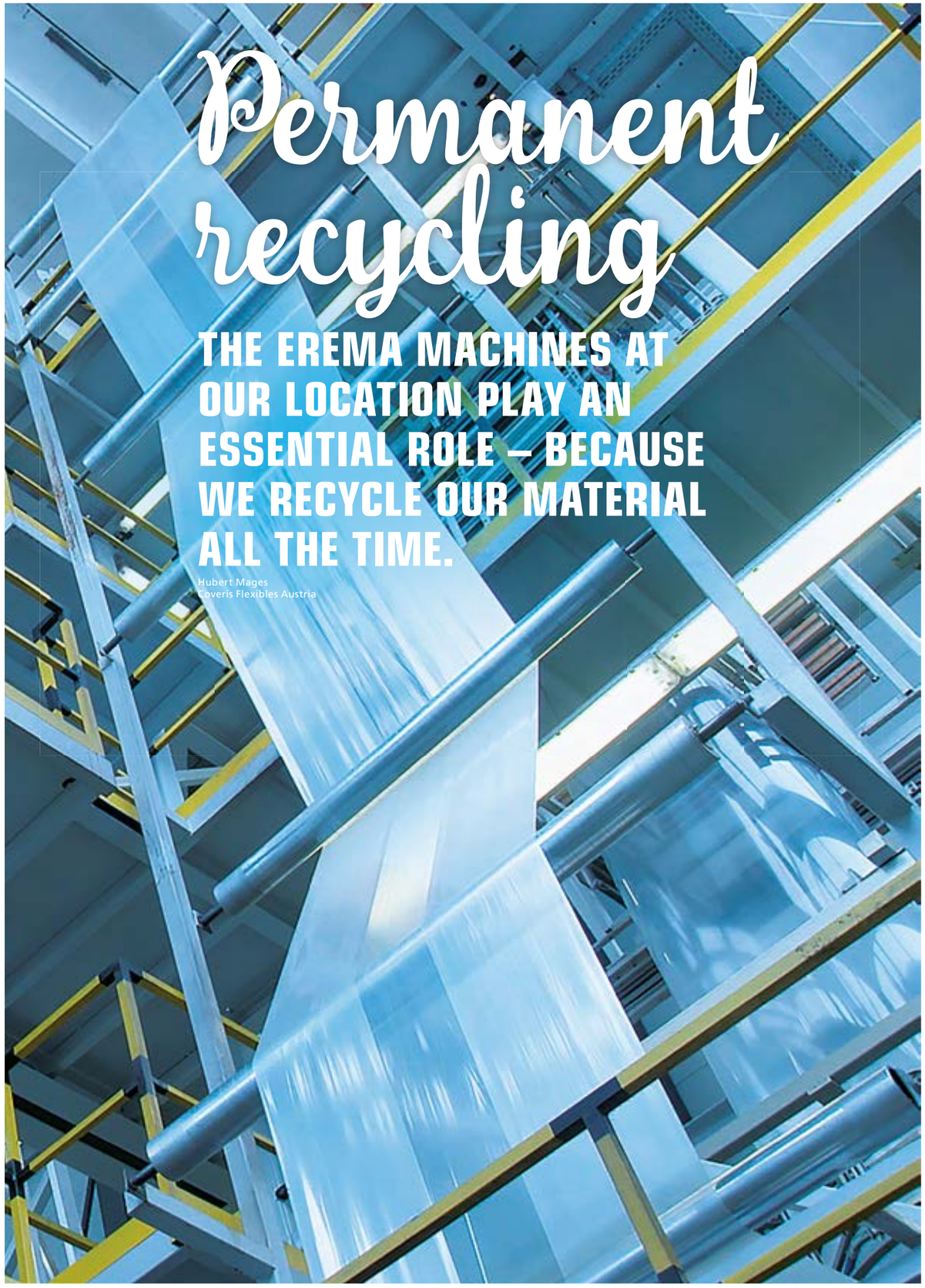
Coveris Flexibles Austria has been regarded as a specialist in film production for over 50 years. They make films for agricultural applications and transport packaging, plus technical films for industrial development on modern and versatile lines. The company runs blow and cast extrusion lines, printing and finishing machines and 20 recycling systems from EREMA. "The EREMA machines at our plant in Kufstein play a very important role. This is because we recycle our material all the time – mainly film trim and rejects. All the recycled material goes back into our products," says Hubert Mages, safety officer and responsible for environmental protection and health and safety at Coveris in Kufstein.

SPARE PARTS SUPPLIED FAST

In addition to the stable design and robustness of the EREMA machines he also appreciates above all the exceptional reliability of the continuous process. Mages likewise appreciates the high level of customer service offered by EREMA: "This is because we have four shifts with people working all the time, 24 hours a day. And because constant servicing is essential for us, EREMA really offers a top service here with wear parts organised and delivered fast."

You will find the full Coveris movie on our YouTube channel: https://www.youtube.com/watch?v=JS7GML1nbXM

Hubert Mages
Coveris Flexibles Austria



Best Practice
Post Consumer Recycling

DOUBLING UP

> NEW REGRINDPRO® INCREASES PRODUCTION CAPACITY <

At PLASgran in Cambridgeshire, England, there is a growing demand among customers not only for prepared regrind but also for its further processing to make high-quality recyclate in an additional refining stage. This is why the company invested in an INTAREMA® 2018 TVEplus® RegrindPro® with Laserfilter.

The high-performance new addition at the Wimblington site is designed for an annual production capacity of 18,000 tonnes, thus doubling the previous capacity. The expectations placed on the fourth recycling machine were crystal clear: PLASgran needed a stable production process despite varying input material streams. "The INTAREMA® RegrindPro® sets new standards in the recycling of regrind as the filtration of complex contaminants no longer poses a problem," says Mark Roberts, Managing Director at PLASgran.

Thanks to the high degree of flexibility of the RegrindPro® machine, Roberts can process PE, PP or mixed PO materials – depending on which plastic materials are currently available in the marketplace – to make first-class recycled pellets. The flexible processing of a variety of input forms – whether it is regrind or film that is on hand – is no problem either. The scope ranges from plastic bottles to production, municipal and industrial waste. The special challenge facing EREMA as the technology provider was to free the often highly contaminated input material from residues of aluminium, wood, rubber, paper or other foreign plastics. Compared to standard recycling systems, the Laserfilter enables continuous filtration up to 70 µm, with a particularly long filter service life of more than 2,000 tonnes.

Besides filtration, the one-hour warming through of the input material in the preconditioning unit represents a key benefit over conventional extrusion plants: PLASgran can count on a stable MFI value of its recycled pellets. Up to eight per cent moisture is likewise no longer a problem – while maintaining maximum throughput. The integrated EREMA Airflush system removes any coarse odours from the material prior to extrusion. By adding materials such as colour masterbatch, peroxides or calcium carbonate powder, the recycler can determine the composition of the recycled pellets down to the finest detail. Thanks to energy-saving ecoSAVE® technology, the machine – which achieves an output of 2,500 kg/h – is notably frugal in terms of energy requirements. This is a decisive benefit in saving production costs.

Mark Roberts, Managing Director at PLASgran, is clearly satisfied with the performance of his new machine: the new INTAREMA® 2018 TVEplus® RegrindPro achieves 2,500 kilograms per hour at the UK regrind specialists.

Regrind on the way to a further refinement stage: the new RegrindPro turns it into high-grade recycled pellets for top-quality end products.

FIT FOR THE FUTURE WITH REGRINDPRO®

"The INTAREMA® RegrindPro® from EREMA integrates perfectly in our existing recycling process. We have created a sustainable company concept featuring ultramodern separating and sorting plants, ingenious cleaning and washing facilities and now ultramodern extrusion technology. We are fit for the future, and this means high-quality recyclates which are tailor-made for customers," says a confident Mark Roberts.

HOW THE REGRINDPRO® TECHNOLOGY WORKS

One single machine which turns a wide variety of regrind types into high-quality recycled pellets? RegrindPro® technology makes it possible: thanks to the thorough warming through of the input material in the preconditioning unit and a particularly gentle universal screw it ingeniously processes an extremely wide range of polymers with different melting points and energy contents.

CONVEYOR BELT

- Thick-walled regrind particles, for example PE, PP, ABS, PS and mixtures of them
- Moisture up to 8%
- Heavy, varying contamination with a multitude of impurities: rubber, silicone, soft contaminants (wood and paper) and foreign polymers (PET, PA)

PRECONDITIONING UNIT

The preconditioning unit gives the thick-walled regrind particles what they need to be warmed through homogeneously: a longer residence time. This is made possible by a slower turning of the new rotor disc with a higher filling level at the same time. Consequently even high moisture disappears and the regrind is perfectly prepared for the extruder.

GENTLE MELTING

A short extruder screw is enough to melt the already dry and thoroughly warmed regrind particles. The shear stress is extremely low as a result while the melt quality is high.

HIGH-PERFORMANCE FILTRATION

Thanks to the gentle preparation in advance the EREMA Laserfilter has an easy time. Dirt particles and impurities such as silicones are hardly reduced in size before and are therefore large enough for them to be easily removed from the melt.

PERFECT HOMOGENISATION

The final homogenisation of the melt downstream of filtration and upstream of degassing enhances the subsequent degassing performance and improves the characteristics of the melt.

HIGHLY EFFICIENT TRIPLE DEGASSING

The machine features convincing, high-performance degassing. This takes place in three stages: initial degassing already occurs in the preconditioning unit. Step two is reverse extruder degassing. The final double venting degassing at the extruder removes gas inclusions which are still present from the melt.

Best Practice
Post Consumer Recycling

CONTAMINANTS AND MOISTURE UNDER CONTROL

> RECYCLER OF AGRICULTURAL FILM FINDS EREMA COMPELLING <

Ambigroup Reciclagem is a well-known and respected recycler of agricultural film, used agricultural irrigation tubing and other post-consumer waste in Portugal. The input materials are naturally very moist and contaminated – a challenge which the EREMA 1514 TVE built in 2007 masters in style.

Ana Margarida Ribeiro, General Manager at Ambigroup Reciclagem in Chamusca, points to used LDPE film: "Take a look at these stubborn contaminants, they are typical for our material." The films come from farms throughout Portugal and are reprocessed by the recycling specialists to make valuable recyclate. A mixture of sand, soil, grass and straw sticks to the films. "The SOREMA washing plant removes most of these contaminants from the plastic. Any remaining contaminants are then removed for us reliably by the EREMA Laserfilter in the extrusion process," explains Ribeiro. "It is extremely important for us that the filter also removes aluminium contaminants very effectively."

MASTERING MOISTURE – WITH DOUBLE DISC AND CO.

However, the input material the EREMA machine has to deal with is not only contaminated, it is also moist. When the film shreds are lying on the conveyor belt of the recycling machine after washing, residual moisture is still up to 12%. "Thanks to the EREMA system we can achieve very good and stable pellet quality despite the high degree of moisture which, besides that, also fluctuates considerably," says Ribeiro. This is made possible by the preconditioning unit, which prepares the material ideally for extrusion. In addition to the normal pre-drying function, which every EREMA machine handles as standard in the preconditioning unit, the 1514 TVE installed in 2007 was equipped with a Double Disc and Air Flush Module. These systems increase drying performance, capacity and plant service life, plus they reduce energy consumption as a whole. "Energy prices in Portugal have risen rapidly in recent years. It is good to know here that with the EREMA machine we have a very energy-efficient solution which means we can save considerable costs."

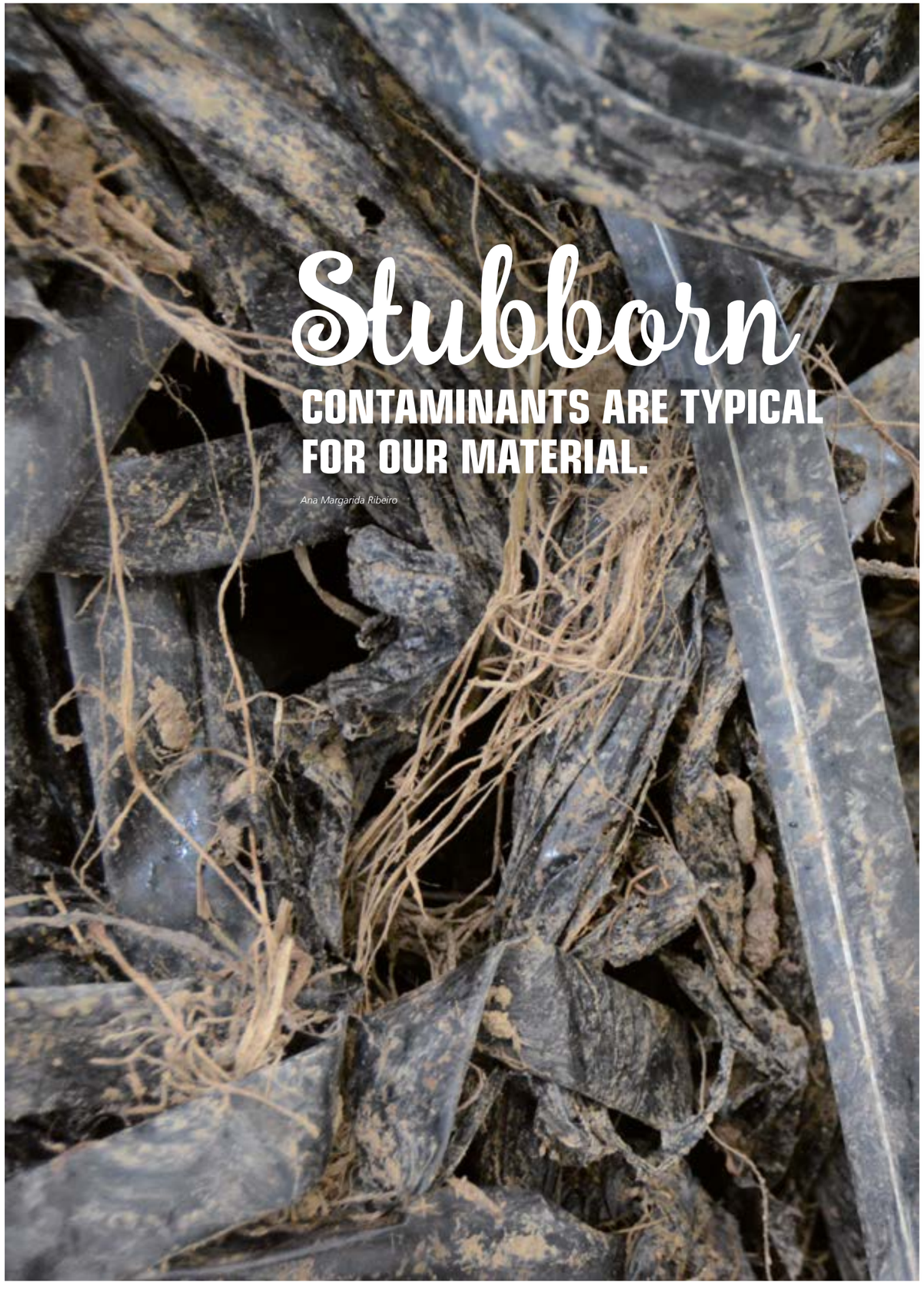
RESOURCE EFFICIENCY COUNTS

The economic use of resources at Ambigroup Reciclagem, however, is not just confined to energy, it is a general credo at the company. The water required by the company, for example, is also used in a closed-cycle system to save resources. "On the whole our recycling operations are organised in such a way that we can carry out the required process steps with relatively little space and labour," says Ribeiro. And, on a tour of the company, we only come across a handful of people at the various stations – most of the time the EREMA machine works without any operators at all. "It is very easy to use and processes the washed shreds stored in the silo fully automatically. The system's high degree of automation helps us to keep costs down," continues Ribeiro.

QUALITY IS TRUMPS

Besides the focus on films and used LDPE irrigation tubes, Ambigroup Reciclagem in Chamusca also uses the EREMA machine to process HDPE and PP crates and containers. "The properties of the recycled pellets are very good, we achieve constant values. This stability is important for our customers because they also need a consistently high quality for their products," says Ribeiro in conclusion.

Ana Margarida Ribeiro, General Manager at Ambigroup Reciclagem in Chamusca, explains what their recycled pellets are used for: "Our customers use them to make a wide range of useful products such as these electrical conduits or films."



Best Practice
Post Consumer Recycling

METAMORPHOSIS

> FROM MUNICIPAL WASTE TO FIRST-CLASS PELLETS <

DSD 310 – a name to bear in mind. Because it refers to a post-consumer plastic which is particularly challenging to recycle: waste PE film from the household and food sectors which is at times heavily contaminated and has PET and PA barrier layers which are hard to filter. Cedo Recycling in the Netherlands knows how to handle this material properly and transforms it into clean, quality recycled pellets on a day-to-day basis. The key to success: an INTAREMA® TVEplus® with efficient double filtration and high-performance homogenisation package.

Input on the left, output on the right: the INTAREMA® TVEplus® masters the transformation stage between the two thanks to efficient double filtration and a high-performance homogenisation package.

Ton Emans, Managing Director of Cedo, puts it in a nutshell: "The recycling of DSD 310 plastic films from the municipal post-consumer sector is still a challenge for recyclers." Nevertheless, when Cedo was acquired by Straco in 2014 the new shareholder made a conscious decision together with Ton Emans to invest in the recycling of post-consumer household waste. "Due to its many barrier layers of PET and PA and the high organic contamination, the DSD fraction 310, i.e. film packaging for food, is very difficult to recycle. The thermal utilisation of DSD 310 which has been common until now was, in my eyes, not in the sense of the circular economy. I was convinced that you can reuse the raw material at a profit and in an environment-friendly way."

» DUE TO ITS MANY BARRIER LAYERS OF PET AND PA AND THE HIGH ORGANIC CONTAMINATION, DSD 310 IS VERY DIFFICULT TO RECYCLE.

Ton Emans, Managing Director Cedo

JOINT DEVELOPMENT CEDO AND EREMA

This is the reason why Cedo started a tuning process with EREMA to develop the appropriate recycling method together. An INTAREMA® 1512 TVEplus® was customised especially to meet these requirements. "It was by no means easy to process such a difficult material to make high-quality recyclates. A special add-on was required for the INTAREMA® to remove the complex contaminants step by step: the double filtration homogenisation package. Months of trials resulted in the desired recyclate quality," says Clemens Kitzberger, EREMA Business Development Manager for Post Consumer Recycling, looking back on the successful development process.

Thanks to Counter Current technology the benefits of the preconditioning unit can be implemented even better and with greater stability. In combination with EREMA Airflush technology, anything which adheres to the film - such as moisture, organic contaminants or printing inks - can already be degassed before the extruder. The already degassed and thoroughly warmed input material then goes into the extruder screw where the polyethylene is melted with minimal mechanical stress.

DOUBLE FILTRATION: FIRST FINE, THEN COARSE

Polymers with a high melt temperature such as PET or PA and also solid matter such as aluminium or wood are untouched and can be separated and removed using a Laserfilter with 90µm screens. The material then goes into the new extruder-screw-mixer developed for this purpose in the TVEplus® zone in which homogenisation takes place. The homogeneous melt is heated to degassing temperature. The double degassing is followed by the second filtration by means of the SW RTF, the EREMA backflush filter. This filters minimal, rubber-like residual particles through its large filter area and with coarse 200µm screens at an extremely low pressure level – the high screen service life means a considerable saving in costs. The result is recyclates with the best possible degassing and filtration for the blown film industry. "Thanks to the close collaboration with Cedo we have been able to develop the homogenisation package with the double filtration for this application-specific adaptation of the system so it is ready for series production. The best praise for us is that Cedo has placed an order for two more INTAREMA® systems," says a delighted Clemens Kitzberger.

THE COMPANY

The 49 employees at Cedo Recycling located in the Dutch city Sittard-Geleen produce around 30,000 tonnes of plastics recyclate every year. Besides agricultural films, the subsidiary of the Cedo Group also processes DSD 310 films. The machine used for this, an INTAREMA® 1512 TVEplus® with Laserfilter and homogenisation package, achieves throughput of around 1,050 kg of quality recycled pellets per hour. The plastic recyclates which are produced are shipped to Cedo Great Britain to make film products such as bin bags once again.

Double filtration a recipe for success: particularly effective in the case of challenging DSD 310 films.

Best Practice
Bottle Recycling

STRONG STRAPPING

> RECYCLER STARTS WITH RPET STRAPPING <

Reciclar is continuing its success story as a South American recycling pioneer in 2017, too. Following the successfully established business fields of PET flakes and PET recyclates the company has now invested in what is currently the most modern recycling technology: the direct processing of PET flakes to PET strapping band. A VACUREMA® 1510-T inline strapping system combined with a Tight Strap 550 from SIMA is being used for this purpose.

The Buenos Aires company was founded in 1994 and specialised in the production of washed polyolefin and PET flakes in its early years. In 2010 Director Sergio Martin decided to expand the portfolio by adding the production of melt-filtrated recycled PET pellets. After comparing globally established recycling technologies he decided in favour of EREMA in 2011. The plan was for 7,500 tonnes of rPET pellets per year with the VACUREMA® Basic 1714-T for the thermoforming, packaging and fibre industry.

EXPECTATIONS EXCEEDED

A clearly delighted Sergio Martin confirms that the VACUREMA® Basic has already surpassed the contractually agreed performance for the sixth year in succession by ten per cent and delivers a stable IV value of the pellets in the process. Thanks to the optical transparency, the excellent colour values and the comprehensive FDA A-H and J approval, Reciclar can also take on short-term orders from new customers. "We are proud to have received the Exporting Excellence Gold Award only recently for our achievements," states Sergio Martin.

ENTERING THE RPET INLINE STRAPPING BUSINESS

At the beginning of 2017 the company added the production of PET strapping to its portfolio featuring the production of PET flakes and recyclates. The Argentinians once again chose EREMA as the general contractor for a VACUREMA® 1510-T Inline Strapping system in combination with a Tight Strap 550 from the Italian manufacturer SIMA (Dietze + Schell Group). The direct processing of washed PET flakes to high-strength PET strapping with an annual capacity of around 4,000 tonnes was realised.

STABLE PROCESS

The downstream strapping system from SIMA receives the IV-stable melt in an absolutely consistent process directly from the third and latest generation VACUREMA® system. The homogeneous melt is routed to the extrusion head double spin pumps, scaled as required and wound into high-performance PET strapping.
Reciclar can take full advantage of the high flexibility potential of the VACUREMA® as the scope of input materials is indeed wide: washed PET flakes, PET recyclates and ground production waste from thermoforming plants, for example, are used. The materials are processed at Reciclar also in a mixed state in crystalline or amorphous form and have large, real density differences (down to 150kg/m³), input moisture (up to 1%) and PET fines. The patented vacuum reactor/extruder series masters the difficult input spectrum with considerably reduced energy consumption compared to conventional PET processing systems. This pretreatment enables the use of a degassing-free and highly robust 3S bimetal single screw extruder in L/D 26.5. Reciclar sees the years of reliability of the overall VACUREMA® concept with low maintenance at the same time as clearly confirmed.

MAXIMUM FLEXIBILITY

ISEC EVO – THE MATERIAL ALL-ROUNDER

Due to the growing demand for the high-performance shredder-extruder combination from PURE LOOP, two new plant sizes have been added to the existing range of four. The ISEC evo 002 and 502 mark the upper and lower limits of the series, with the shredder-extruder machine throughput now ranging from 70 to 1,000 kg per hour. Customers benefit from the process engineering improvements over the last year which have resulted in an up to 25 per cent increase in throughput for all ISEC evo models. Further benefits include the automatic start-up/shutdown of the system at the press of a button and a turnable hood which offers greater flexibility in terms of layout. PURE LOOP was founded as a subsidiary of the EREMA Group at the beginning of 2015 and stands for the highly efficient recycling of clean production waste using shredder-extruder technology. The new ISEC evo shredder-extruder technology is designed for the repelletising of production waste in an extremely wide variety of forms such as film, tapes, fibres, nonwovens, fabric, hollow bodies, solid plastic parts and much more, plus solutions which are ideally and precisely adaptable to the user's scrap logistics requirements.

PE ONLY INSTEAD OF PET/PE

DESIGN FOR RECYCLING

A combination of the materials PET and PE is commonly used in the manufacturing of stand-up pouches. Thanks to a successful collaboration between the companies Borealis, Hosokawa Alpine, Bobst, GEA and EREMA, it is now possible for the first time to produce functional pouches with a material combination based exclusively on PE. The plastic packaging – 100% of which is recyclable – is a successful example of how cross-company Design for Recycling works. EREMA CEO Manfred Hackl on the subject: "I like to compare the closed plastic loop to a relay race. It is not enough if a part of the value chain thinks only in terms of their processing step. Every manufacturer or processor of plastics has to think one step further to reach the finish line successfully together."

NEW ADDITION AT EREMA CUSTOMER CENTRE

RECYCLING MEETS INJECTION MOULDING

A brand new tie-bar-less ENGEL victory 300/80 is the latest addition to the EREMA Customer Centre in Ansfelden. This means that EREMA customers can now test how suitable their recycled pellets are for injection moulding immediately after they have been produced in the trial centre. The extremely modern ENGEL machine, which has a clamping force of 80 tonnes, is the perfect addition to the two existing OCS blow and cast film lines which customers can use to evaluate the recycled pellet quality for film applications.

ACCESS TO 160,000 ARTICLES

SIMPLY CLICK FOR SPARE PARTS

Whether it is wear parts such as Laserfilter screen discs and cutting knife sets or long-lasting components such as heating bands, motors or screws – the new EREMA spare parts webshop offers customers a range of over 160,000 articles. Thanks to a modern user interface, logical parts layout and practical search function you can find your required part in no time at all. The individual order history is a truly top feature. It gives customers the overview of all their previous EREMA shipments, regardless of whether they were machine purchases or previous spare parts deliveries. All very practical as the entire history of the machine is available at the push of a button.
https://spareparts-online.erema.at

FAST, UNCOMPLICATED, UMAC

First class, second hand

With the founding of the subsidiary UMAC the EREMA Group extends its portfolio by adding used recycling systems. The conclusion one year after the company was launched in 2016: UMAC has established itself successfully. The services cover the evaluation, purchase, refurbishment, sales and commissioning of second-hand recycling systems and components. UMAC currently deals primarily in EREMA systems but is committed to remaining independent in terms of brands and its portfolio.

The plants are refurbished with original EREMA spare parts – for more performance and a longer service life. When purchasing a used EREMA system there is an additional benefit in that thanks to the close collaboration with its sister companies 3S, EREMA and PURE LOOP, UMAC has exact information about the individual machine history. All current machine offers with details about the machine type, capacity and year built are available on the website.
www.umac.at

FROM FISHNETS TO FRISBEES

A GREAT CATCH

Now it's frisbees as well. After skateboards and trendy sunglasses the young Californian entrepreneurs Bureo now have the classic flying discs in their portfolio. The 175 gram discs are made of 80% recycled plastics from discarded and collected nylon fishing nets. The recycled pellets are supplied by EREMA's customer Comberplast in Chile.

EREMA®
PLASTIC RECYCLING SYSTEMS

CHOOSE THE NUMBER ONE.

www.erema.com