

VISION 2030

Plastic with a positive image

PRACTICE

International users report



HIGH-PERFORMANCE FILTRATION

for fine results.

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Looking ahead at all times

One year after the launch of INTAREMA® we are delighted to report back to you in this latest issue of Recycling News 2014/15 on the initial successes of our customers with this innovation. INTAREMA® was an instant success in the marketplace as soon as it was launched and now, some 12 months later, we have already sold 150 systems throughout the world. Some of the very first customers talk about their first experiences on pages 28/29.

In keeping with the EREMA philosophy of always being in a position to offer better and higher performing technologies, we are by no means resting on the laurels of INTAREMA® and thus continue to enhance our technologies relentlessly. The latest product innovation is INTAREMA® K. The new, fully automatic processing system designed especially for the recycling of PE edge trim is the successor model of the previous KAG system which now features all the efficiency benefits of the INTAREMA® generation, such as Counter Current technology. You will find more information about this on page 24.

This time in our cover story we present you an insight into one of EREMA's core competencies – our innovative and highly efficient filtration technology. Thanks to the efficiency of the EREMA melt filter and Laserfilter, high-performance filtration is something that users striving for top pellet quality can truly savour.

And if you want to know why the quality of recycled pellets is becoming increasingly important, read our “Vision 2030” interview. In this interview we take a bold look into the somewhat distant future, when high portions of recycled material in plastic products will have enormous positive leverage on the entire plastics industry.

Enjoy the articles!

Klaus Feichtinger, EREMA CEO

Manfred Hackl, EREMA CEO



VISION 2030

Plastic recycling as a key function for a sustainable life

Plastic has become indispensable in everyday life. It is an essential feature of our modern lifestyles and can be found in all parts of it. Product innovations, the development of alternative energy carriers and, above all, the rising global population mean that the demand for plastic as a raw material will continue to increase. At the same time, however, the shortage of fossil raw materials is rapidly increasing. Asked about how this situation will continue to develop until the year 2030, the two EREMA CEOs Klaus Feichtinger and Manfred Hackl speak with one voice: the key lies in the efficient utilisation of existing plastic streams and the key function is in the recycling of plastics. A closed loop with high amounts of recycled material in products would also help plastic gain a positive image in society.



How would you describe the current significance of plastics?

Manfred Hackl: They are of unbelievable significance. When you consider that, unlike other materials such as paper, metal or glass, plastic is only 60 years old, it is remarkable

that it is used just about everywhere and has become indispensable. The reason for this is that compared to other materials, plastics have an incredible, broad portfolio of characteristics – plus the price-performance ratio is convincing. This is what makes a life without plastics unimaginable.

Klaus Feichtinger: You only have to look at everyday life. In order to maintain our lifestyles, food has to be kept as fresh as possible for as long as possible and that would be impossible without plastic packaging. Seen in global terms there would not even be other energy sources such as wind turbines and solar panels as these did not become economically viable until plastic was used.

How will the significance of plastic continue to grow up to the year 2030?

Manfred Hackl: Even greater importance will be attached to plastics in future. The benefits of this multifunctional material in terms of technology and design will drive forward innovations in many product sectors, such as lightweight automotive construction, for example, to reduce fuel and CO₂ consumption. Plastic consumption is currently growing at a rate of 8% every year worldwide, with around 7.2 billion people living on the planet earth. Forecasts estimate that global population will be in the region of 8.4 billion in the year 2030 which means the demand for plastics will grow enormously. The growth in population, however, will not be distributed evenly across all continents. While Europe's contribution to the global population will shrink from 18% to 8%, other regions of the planet will grow rapidly and disproportionately – and with them also the

"The goal is as far as possible autonomous supply through closed recycling loops and renewable energy generation."

demand for raw materials. As, however, Europe has relatively low fossil energy resources, the shortage in these areas will exacerbate and lead to an increase in prices. This means that in future we will have to drastically reduce our dependence on fossil raw materials such as crude oil or natural gas and we will have to do so in two ways. First we will have to succeed in closing the loop of existing plastic streams by means of recycling. And secondly, because transport, heating and energy still currently account for 87% of crude oil consumption, we have to make more intensive use of the material benefits of plastics to obtain renewable energy and for lightweight engineering.

Klaus Feichtinger:

The goal, therefore, is as far as possible autonomous supply through closed recycling loops and renewable energy generation. Reliable, inexpensive and environmentally sound energy supply is a crucial factor in the sustainable development of modern societies. Material-driven innovations are of vital importance in further growth and the penetration of the market of energy technologies. As polymer materials offer special potential here, they will become a driving force and thus be key materials in future developments.

What does this mean then for the plastics recycling industry?

Manfred Hackl:

Enormous potential, of course, because plastics are becoming increasingly valuable as a secondary raw material – not only in terms of quantity but also with regard to quality. But to turn waste plastic into high-quality and recognised secondary raw material calls for intensive communication within the entire plastics industry – between raw material suppliers, plas-

"To turn waste plastic into high-quality and recognised secondary raw material calls for intensive communication within the entire plastics industry."

tics processors and recyclers. This is the basis for proper ecodesign. Only then is it possible to develop new products which take into account their later recyclability at the time they are produced. The way

forward is to organise material flows better and optimise the production of plastics in such a way that new, high-quality products with a high recycling content can be achieved. This is how sustainability works in a closed loop.

Why does this closed loop not work now and what is your vision for its realisation?

Klaus Feichtinger:

In order to secure the necessary material streams also for future generations the portion of recycled material in products has to increase dramatically. In terms of technology this is indeed already possible, but the industry still has to accept the fact. The crux of the matter lies namely in a completely paradoxical view of the general public and the industry. Whereas plastic is regarded as a valuable raw material by the industry it often has a negative aftertaste for the general public.

On the other hand, people see recycling as a positive topic, whereas the majority of the industry still refuses to use recycled pellets – although everyone talks about sustainable corporate policy.

If business and society do not change their approach themselves regarding this issue, legislation will have to intervene.

recently added to the list with another product containing recycled material (see page 42). Far more global players, however, would have to pull together.

"A higher portion of recycled material in plastic products has enormous positive leverage on the entire plastics industry."

Manfred Hackl:

Passing laws for the collection of plastic waste for reuse is not enough; you have to stipulate defined minimum percentages of recyclates in plastic products. A higher portion of recycled material in plastic products would not only have enormous positive leverage on the entire plastics industry, it would also be a huge opportunity in terms of image. But the longer this development takes, the more difficult it will be to maintain our material flows in a sustainable way.

Who else could help to realise this vision?

Klaus Feichtinger:

To press ahead with this development, even more global branded companies need to recognise the benefits we can gain by initiating a positive spiral and offering products which contain recycled materials. Ikea was one of the first companies to recognise this, Coca-Cola also makes a major contribution with rPET featuring in bottles and Henkel was

Manfred Hackl:

These can also be smaller, regional initiatives which, as a good and successful example with a large portion of creativity, lead the way to increasing the portion of recycled material. In Chile, for example, three young masterminds launched the initiative "Net Positiva" to free the sea from old polyamide fishing nets. Thanks to an incredibly creative idea a company was formed which now manufactures trendy skateboards from the recycled pellets from these nets (see page 12).

Klaus Feichtinger:

Articles in the media could likewise make such a valuable contribution. Discussions which are not always factual and

balanced, like the current debate about microplastics, bisphenol A and plastic carrier bags, tend to overshadow the positive aspects of the material in the public's eye.

Where do you see the biggest growth markets in plastics recycling?

Klaus Feichtinger:

If you take a look at current legislation developments in Europe, Brazil and China – just think of the 'Green Fence' – which speed up the development and efficiency of collection systems, we expect recycling to become stronger in the post-consumer area and in the case of regrind from the automotive and electronic sectors.

Manfred Hackl:

In the field of plastic recycling systems, efficient and flexible systems in particular will prevail because the complexity in the processing of used plastics will continue to increase due to constant innovations in the production of plastics. Extensive recycling competence and experience together with a high degree of innovation are without doubt the key factors for success. EREMA has been taking this approach for 30 years now and is, therefore, well prepared to provide the answers to these and also other, new recycling challenges.

"Global branded companies can initiate a positive spiral with products containing recyclate."

DID YOU KNOW?

Plastics are used in all areas of life and the growing global population plus the rapidly progressing shortage of fossil raw materials means that the demand for plastic will continue to rise. As a result, more and more importance is being attached to plastics recycling as a key function.

Plastic enables sustainable energy recovery:

You can take advantage of wind and solar power by using plastics.



Using plastics saves CO₂:

The CO₂ figures for the entire plastics market in Europe show that the estimated benefits in the utilisation phase are roughly 5 to 9 times bigger than the emissions from the production of all plastics.



In the year 2020 the estimated utilisation benefits (including the effects of reutilisation) could be 9 to 15 times higher than emissions from production and waste management.



Plastic helps to save crude oil resources:

- 42% of crude oil is used for energy and heating
- 45% of crude oil is used for transport
- 5% of crude oil is used for the production of plastics



Plastic saves lives:

The current share of plastic seen in terms of total materials used is around 50% in the case of medical technology. In Europe, medical articles (e.g. X-ray equipment, surgical instruments, etc.) account for 39% of this figure and 61% thereof is used for disposable articles (e.g. blood bags, syringes and catheters, hygiene accessories, dressing material).



Plastic saves energy and protects the environment:

Using plastics reduces the weight of vehicles and thus saves valuable and expensive fuel. Car drivers in Austria alone save 300 million litres of fuel every year through the use of plastic.



Plastic can also be "organic":

Plastic can also be made from sustainable raw materials such as starch or polylactic acid (PLA) using corn, bioethanol from sugar cane or cellulose.



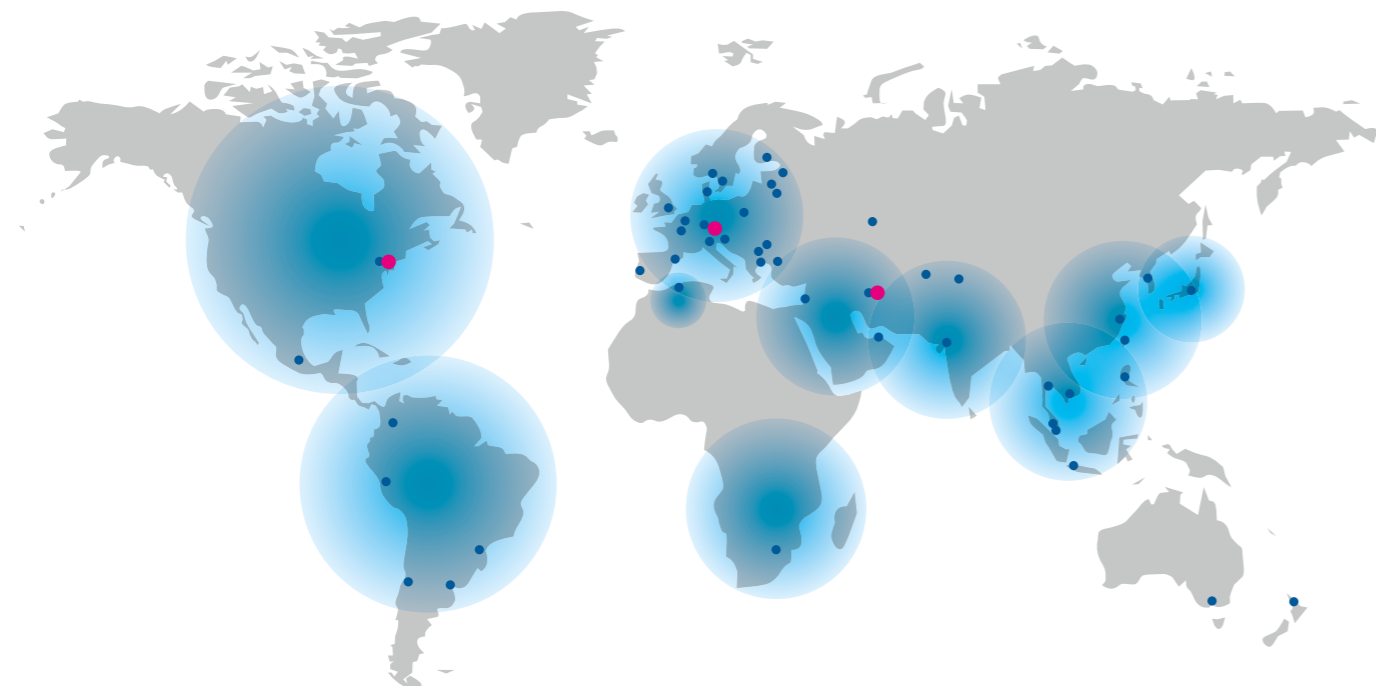
Plastics make the world a lighter and more comfortable place:

Plastics make shopping lighter, keep food fresh longer and protect against soiling, moisture and other negative influences.

Even more service

EREMA expands global trial centres and technical support

With seven systems in the EREMA Customer Centre and three more in the R&D Centre at the company's location in Austria, two at the EREMA North America (ENA) Trial Centre in Ipswich and a plant at the trial centre in the Middle East, EREMA customers now have a total of 13 facilities at their disposal for trial runs with the test materials they choose to provide.



EREMA worldwide:

- EREMA trial centres with 13 systems in total for test runs
- 10 regional service centres for on-site technical support
- Over 50 EREMA representatives

Additionally, the trial centres feature the world's very latest technology thanks to the installation of the new plant generation INTAREMA® with patented Counter Current technology (presented for the first time at K 2013). The test runs on these systems are

carried out in realistic production conditions and thus provide the results with which the customer's machine configuration is optimised on an individual basis. CEO Manfred Hackl explains: "Our customers benefit from the fact that the systems can be

configured exactly in line with their concrete application." Currently some 400 tests are already carried out every year with a wide variety of customer materials. This number of test runs will continue to increase with the expansion of the trial centres.



The EREMA Customer Centre at the company's headquarters in Austria offers seven test facilities with dedicated plastics analysis lab covering 1,200 m²

Committed to quality

EREMA recognised years ago the trend of being able to produce recycled pellets with a property profile customised to the specific end application, to continuously increase on the one hand not only the recyclate share in innovative products but also on the other hand the general market value of plastics recycling. In order to be able to realise such specific recycled pellet grades it is necessary to analyse the problems in the recycling processes

in detail. For this reason the global market leader soon decided to invest in its own R&D Centre with dedicated plastics analysis laboratory featuring a wide range of equipment with state-of-the-art engineering.

Additional technical service

EREMA offers another unique service with additional technical support centres around the world to assist customers on site. Teams of qualified service

engineers are stationed in the respective regions (Europe, North and South America, China, Japan, Vietnam, Korea and the rest of Asia, Africa and the Middle East) for technical support and on-site visits – close to the customer at all times. With the three trial centres, over 50 representatives and the 10 regional technical support centres, EREMA not only offers its customers global after-sales expertise which saves time and money, it once again sets new standards in customer service.



The installation of a second plant has doubled the space available for trials at the EREMA North America Trial Centre in Ipswich, Massachusetts



The Bureo team: Kevin J. Ahearn, Ben R. Kneppers and David M. Stover

Bureo Skateboards made of recycled fishnets for a clean ocean around Chile

The remarkably innovative concept of three young American mechanical engineers is causing an environmentally sound “wave of change” in Chile. The creative geniuses recycle discarded polyamide fishnets to make cool skateboards.

In his job as a sustainability expert at a Chilean authority, Ben R. Kneppers became aware of the considerable impact which pollution through plastic waste has on the ocean around Chile. As discarded fishnets make up roughly 10% of it, he joined forces with his two colleagues David M. Stover and Kevin J. Ahearn and put their professional expertise into practice for their shared passion for the ocean and sport. They launched the initiative “Net Positiva” with collection points set up for the fishermen’s nets. “We then went in search of an idea which would enable us to turn the fishnets into a quality end product and use the earnings to keep the fishnet collection project

going and secure the entire mechanism in a sustainable way,” explains David M. Stover. And so the idea of using the recycled material to make cool skateboards called Bureo was born. The name Bureo comes from the language of the Mapuche, the native Chileans, and means “the waves”. It is meant to represent “the waves of change” and act as a sign of thanks to the government of Chile for supporting this project.

Technical know-how

In order to produce lasting and high-quality skateboards from the very durable and highly recyclable polyamide fishnets

the team worked on the material and the design in a plastics processing and research laboratory over several months. The trio then found what they were looking for in Comberplast S.A. in Santiago, the company which has been producing the skateboards in a unique process since the beginning of 2014. The collected fishnets are recycled here on an EREMA 1310 TE system and then turned into skateboards in an injection moulding process. This innovative concept shows in a unique way how creative end products can promote the development of plastic recycling and have a positive impact on the environment at the same time.

PRODUCT WORLD





Key function

HIGH-PERFORMANCE FILTRATION

The trend in plastics recycling of being able to produce even higher quality end products is relentless. The amount of processed plastic wastes is growing all the time and there are signs of an additional challenge, especially in the post-consumer field: innovations continually reduce the portion of plastics in packaging while the impurities present in the recycling process are increasing proportionately. In order to be able to achieve consistent quality results nevertheless, high-performance filtration is emerging more and more as a key function in plastic recycling systems. EREMA's melt filters and Laserfilters offer the optimum solution here. Thanks to their efficiency, they can be truly savoured by users who demand top pellet grades.

Key function

HIGH-PERFORMANCE FILTRATION

There is no overlooking the trend towards high-performance filtration systems. Recyclers around the world are showing ever increasing interest and the number of new investments and retrofits is soaring.

Increasing impurities are not always attributable to the likewise increasing quantities of the processed plastic waste; continuous advancements – such as in packaging materials in the post-consumer sector – are also a factor. Films are produced with ever thinner walls to reduce the weight of the end products and thus protect resources. By comparison, however, the absolute amount of impurities such as printing or labels remains the same. It is a fact that the relative/

percentage portions of plastic in the waste material is falling and the level of impurities is rising. To meet the requirements for the production of these further developed plastics in recycling, however, the quality of the pellets has to rise even further for the plastic recycling loop to close again.

SW RTF versus Laserfilter

EREMA high-performance filter systems have proven their worth over a number

of years in an extremely wide variety of applications. While the SW RTF melt filter systems with partial-surface back-flushing ensures extremely clean results with a filtered impurity level of up to 0.2%, the recently modified Laserfilter system delivers outstanding quality in film production with a filtrated impurity level of up to 5%. But which filter system is now the most suitable for which respective application?



Clemens Kitzberger

EREMA Business Development Manager for Post Consumer Recycling

- Born in 1978
- Joined EREMA 15 years ago
- Thanks to his years working as a commissioning and R&D process engineer Clemens Kitzberger has a wealth of technical knowledge about recycling. In his position as head of process engineering for post-consumer applications he also acquired considerable expertise in the field of filtration technologies in recent years. In his new capacity as Business Development Manager, Clemens Kitzberger acts as an intermediary and interface between the marketplace and technology, identifies trends and market opportunities in post-consumer recycling and thus makes a major contribution to extending EREMA's lead in this sector.

Ask the expert

Both the SW RTF melt filter system and the Laserfilter system feature specific benefits. As an expert in the field of post-consumer recycling, EREMA Business Development Manager Clemens Kitzberger has the answers.

Which application fields are recommended for an SW RTF melt filter system?

Clemens Kitzberger:

Particularly good results can be achieved with it on highly clean film lines in the biaxial process with up to 10 µm, such as in the electronics and food sector, for example. We know from long-standing EREMA customers that through our SW RTF melt filter systems even up to 30%

of reprocessed edge trim waste can be returned to production as recycled pellets. This is why so many of our SW RTF filters are used successfully for optically ultraclean film applications and have proven their merits even in inline applications which require a stable and smooth process for clean results.

What is the biggest strength of the Laserfilter systems?

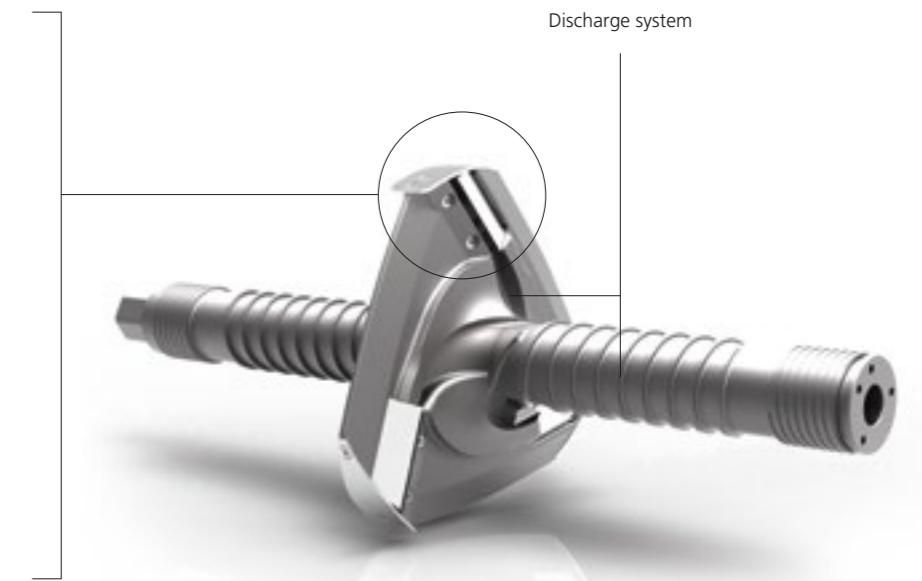
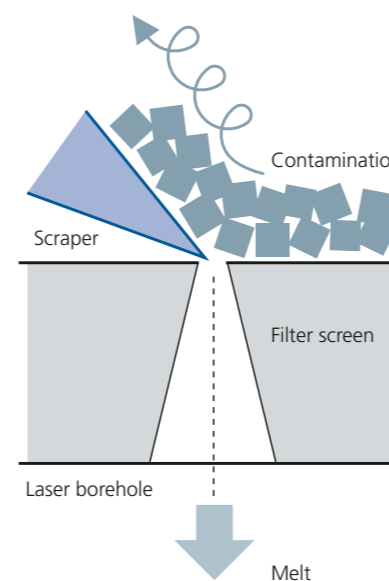
Clemens Kitzberger:

What makes the Laserfilter system so ingenious is that you can process larger amounts of impurities, such as packaging with a large portion of paper labels, for example. Manual sorting prior to the process is no longer required in this case. Besides the considerably lower material loss, you also save high labour costs.

What is the secret behind the high process stability?

Clemens Kitzberger:

Definitely the high degree of automation. This means that the Laserfilter systems can be configured individually so they can run without operation in the post-consumer area for up to two weeks and in the post-industrial area for even longer. This minimises many sources of error as a result and the system as a whole delivers consistently higher throughputs. The static screens also make a major contribution to the high process stability. They not only ensure efficient leakage prevention, they are also easy to change over and no skilled personnel is required.



Laserfilter innovation considerably improves cleaning efficiency: thanks to new scraper technology and the new discharge system any contaminants are lifted from the screen IMMEDIATELY



SW RTF

Filtrated impurity level (dust, paper, wood, alu, etc.)	up to 0.2%
Materials	thin-walled materials, all polyolefins PA, PET, bioPET, fibres, etc.
Filtration fineness	up to 30 µm
Benefits	<ul style="list-style-type: none"> • processing of high levels of contaminants through large active screen surfaces • automatic partial area backflushing with high cleaning efficiency and long screen change intervals • long service life through automatic pressure compensation for the pistons • extremely easy handling through operation on the front side • minimum personnel requirements
Special feature	also proven to be ideal for inline applications
In operation around the world	
• Total	3,300 systems
• As a stand-alone system	770 systems
Conclusion	The configuration and automatic backflushing only on parts of the screens are what make the SW RTF system so special. This guarantees reliability and process stability with far less labour required.



Laserfilter

Filtrated impurity level (dust, paper, wood, alu, etc.)	up to 5%
Materials	all polyolefins, PS, ABS, etc.
Filtration fineness	up to 90 µm
Benefits	<ul style="list-style-type: none"> • enhanced cleaning efficiency through redesign of scraper geometry and discharge system • continuous discharge • minimum melt loss through thickening up to 60% • extremely long screen service life • minimum personnel requirements
Special feature	fully automatic, constant pressure operation
In operation around the world	
• Total	200 systems
• As a stand-alone system	50 systems
• Laserfilter new (since January 2014)	<ul style="list-style-type: none"> • 25 existing Laserfilters have been changed over to the new scraper technology due to the efficiency benefits and the easy retrofitting procedure • 13 systems have been supplied with the new, optimised Laserfilter system
Conclusion	Thanks to the redesign of the scraper geometry and discharge system, the high-performance filtration system of the new EREMA Laserfilters can remove contaminants even more quickly and more thoroughly than before. Cleaning efficiency, discharge capacity and thickening are thus at the top level. The result is recycled pellets in top film quality. Additionally, with the new technology the service life of both the screens and the scrapers is remarkable and servicing is reduced considerably.



3S GmbH – an EREMA subsidiary
Quality made in Austria
www.3s-gmbh.at

Focus: manufacturing of high-quality core parts for the extrusion industry, such as screws, barrels, feed sections, filter components, etc.

Filter core components for EREMA: SW RTF (blocks, pistons, etc.) and Laserfilter (high-precision filter screen in hardened special steel, scraper star, discharge screw, etc.)

Latest plant: ultramodern, particularly high-performing plant for the production of EREMA Laserfilter screens with maximum precision

Direct food contact:

VACUREMA® is the clear global market leader

Around 150,000 tonnes of rPET for direct food contact are processed every year in the USA using VACUREMA® technology. This corresponds to roughly half of what is in total 295,000 tonnes of recycled PET material and thus represents a market share of 50%. In Europe the market share in this segment is likewise already in the region of 30% with around 347,000 tonnes of rPET produced on VACUREMA® systems. In this interview with Recycling News, Christoph Wöss, Business Development Manager Application Bottle, explains which technical innovations are behind the success of VACUREMA® technology.



Leading soft drinks brands from the USA, such as Pepsi and Nestlé, are committed to sustainable rPET packaging with recycling contents of up to 100%. Numerous suppliers use leading VACUREMA® technology from EREMA to produce the ultraclean rPET.



Christoph Wöss

EREMA Business Development Manager Application Bottle

- Born in 1980
- Joined EREMA 13 years ago
- Christoph Wöss acquired a wealth of knowledge about recycling technologies as an automation engineer at EREMA and became a specialist in PET recycling at the same time. Further to his extensive expert knowledge in this field he was appointed Product Manager for VACUREMA® in 2007. As the new Business Development Manager Application Bottle, Christoph Wöss now acts as an intermediary and interface between the marketplace and technology, identifies trends and market opportunities in bottle recycling and thus makes a major contribution to extending EREMA's lead in this sector. Christoph Wöss is a member of the PETCORE (PET Container Recycling Europe) board.

All in all there are more than 150 VACUREMA® systems in use around the world, producing high-quality recycled pellets and end products such as films with an overall annual capacity of around 1 million tonnes. What is the secret behind VACUREMA®, which has become the world's most used technology for the recycling of post consumer PET bottle flakes, PET in-house waste and also PE-HD bottle flakes since it was launched in 1998?

Christoph Wöss:

VACUREMA® technology leads the field due to its enormous flexibility in the processing of input material. The deciding factor here is the highly efficient, food contact compliant decontamination BEFORE the extrusion process. The patented pre-treatment of PET flakes at raised temperature and in high vacuum before the extrusion process removes moisture and migration materials from the feedstock very effectively and in a stable process environment. Thanks to the vacuum treatment, stable IV values can be achieved even in the case of varying

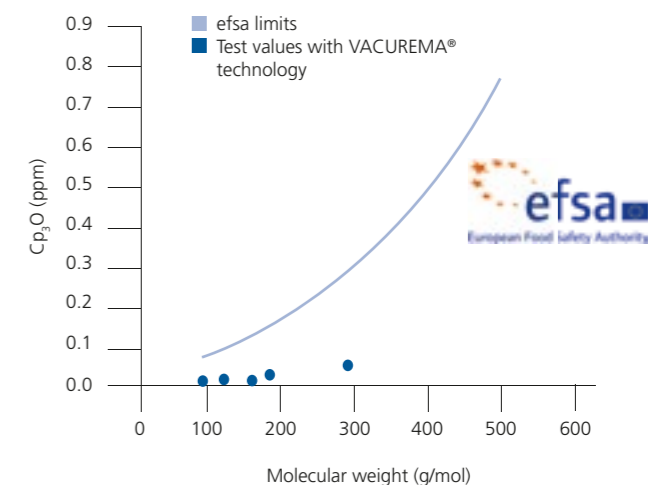
moisture levels and different IV values in the input material. As the input materials with up to 1.5% moisture can be processed, no expensive pre-drying is necessary either, unlike other processes available on the market.

What is the situation with international certification for food contact compliance?

Christoph Wöss:

The global success of VACUREMA® also

has something to do of course with the fact that the recycled pellets produced with our technology fulfil the direct food contact purity requirements of major brand owners and, besides many country-specific approvals, also has internationally recognised certification from the North American FDA and efsa, the European Food Safety Authority. In Europe 347,000 tonnes of rPET are already produced for this sector every year on VACUREMA® systems. In doing so, our customers use up to 100% of the recycled pellets for the



efsa test results for VACUREMA® technology

production of bottles and food contact grade thermoforming sheet in accordance with efsa guidelines.

What additional benefits do VACUREMA® systems offer customers?

Christoph Wöss:

The automatic operating mode with Food Contact Control (FCC) which enables users to rely on a stable process at all times. The parameters for direct food contact compliance are monitored and archived continuously in the recycling process on all VACUREMA® systems. FCC supervises the recipe data which is stored and enables you to switch to the process parameters required for the production of the respective recyclate simply by pressing a button. If levels go beyond defined limits an alarm is triggered automatically and (optionally) material flow is diverted away from the production line. This guarantees traceability.

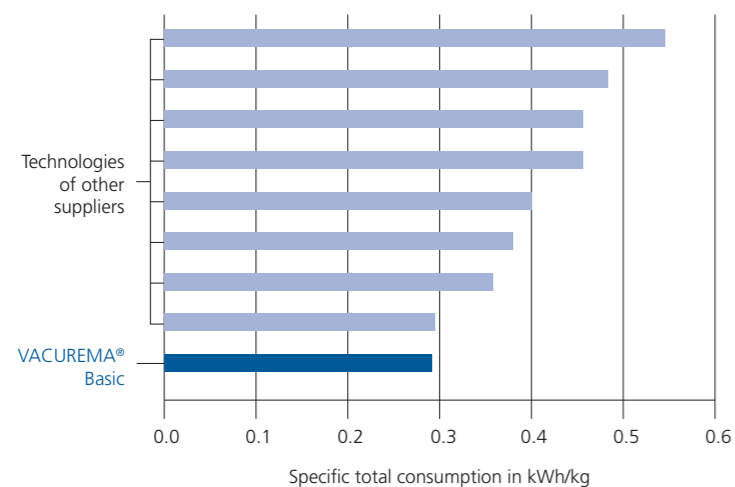
The SKZ plastics centre, an independent testing institute in Würzburg, tested a total of nine different PET recycling technologies available on

the market with regard to electrical and thermal performance so they could be compared in terms of energy efficiency. How did VACUREMA® technology do in this test?

Christoph Wöss:

Extremely well! The plastics centre confirmed that VACUREMA® technology has the best energy efficiency ratings compared to others. The VACUREMA® Inline Sheet system (used to produce food contact grade thermoforming sheet) of a customer in Germany came out on top in an energy comparison with other systems available on the market, recording the lowest specific total energy consumption (including sheet down-stream) of 0.29 kWh/kg. VACUREMA® with a rating of 0.295 kWh/kg proved to be 40% more energy efficient than other systems also in the bottle-to-bottle field. Contrary to other systems available on the market, VACUREMA® requires just a single energy input for processing and no energy-intensive additional predrying is necessary. These figures speak for themselves.

VACUREMA® Basic with the most efficient figure in the comparison of energy consumption (source: SKZ – Das Kunststoff-Zentrum)



VACUREMA® Prime

100% In-house Recycling: The new INTAREMA® K

The new, fully automatic processing system is the successor model of the KAG system, designed especially for the recycling of PE edge trim. With the integration of the innovative technologies of the new INTAREMA® plant generation it is now known as INTAREMA® K and allows up to 100% of the pellets to be returned to the production process.



The global premiere of the INTAREMA® K system took place at interpack 2014.



EREMA presented the enhanced benefits of the new INTAREMA® K system at the global premiere at interpack 2014. The direct feeding of the endless edge trim via piping and cyclone takes place automatically and offers maximum flexibility through possible combinations of cyclone, roller intake and conveyor belt. As a result, pre-cutting of the

edge trim is not necessary. Thanks to easy operability and a high degree of automation – such as fully automatic throughput adjustment to current edge trim – the user-friendly Smart Start system minimises labour requirements. The compact design is particularly space-saving and the ecoSAVE® system featuring direct drive

reduces energy consumption and lowers CO₂ emissions. The new, patented core technology Counter Current plus a short extruder ensure careful processing, i.e. extremely low thermo-mechanical stress for excellent material properties. The result is high-quality, clean pellets which can be returned in full to the production process.

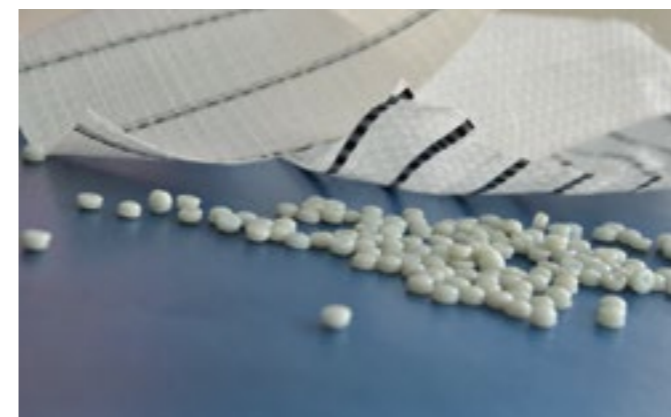
Highly efficient raffia & woven bag recycling

The new INTAREMA® plant generation makes it possible for the first time to process raffia and woven bags directly and without prior size reduction. This saves the customer both time and investment costs.

Woven bags, such as Big Bags for example, are now indispensable in the modern world of storage, logistics and production. The flexible plastic fibre sacks are suitable for the storage and transportation of a variety of loose material such as wood pellets, cocoa beans or plastic pellets. With the new INTAREMA® systems, Big Bags and other raffia applications can now be processed when they reach the end of

their lifecycle to make high-quality plastic pellets. The benefit comes above all from the innovative Counter Current technology of the new INTAREMA® system which ensures much better material intake in the border area between the cutter/compactor and tangentially connected extruder. In the system used previously there was the risk of material becoming stuck due to the pushing and pressure – especially in the case of such materials – which

in turn could lead to reduced material intake. Counter Current technology now acts against this. This increases not only process stability but also capacity. Additionally the new Smart Start concept means very easy and extremely labour-saving operation as many central process steps can run fully automatically thanks to the high degree of automation. Plus integrated ecoSAVE® technology saves further energy costs.



"Crocodile" conveyor belt for the direct processing of endless edge trim

With the multifunction and flexible "Crocodile" conveyor belt from EREMA you can now get a firm grip on endless tapes, loose edge trim and long pieces of film such as slitter or blown film waste.

The optimised dosing and retaining system with innovative dual conveyor belt technology and fully automatic dosing control ensures constant feeding of the recycling system with endless tapes and loose edge trim – even if the strips are tightly intermingled. This means that edge trim no longer

has to be reduced in size beforehand and can be processed directly, thus saving both time and money. At the same time, the constant material input ensures a uniformly high quality of the end product – with maximum throughput. A generously scaled material buffer also reduces labour require-

ments as large portions can be input thanks to the raised sidewalls and metal detector. This means that edge trim & co. can be buffered for a long time and handled without any operators. "Crocodile" conveyor belts from EREMA are particularly effective for plants up to 500 kg/h.



BEST PRACTICE



The 1st INTAREMA® customers around the globe

EREMA presented the new INTAREMA® plant generation for the first time on 16 October 2013 at the K 2013 show. Now, one year on, over 150 INTAREMA® systems featuring the newly developed and worldwide patented Counter Current technology have already been shipped and installed. Some of the very first customers report as follows.



SML MaschinengesmbH, Austria

INTAREMA® 1108 T

Commissioned: Autumn 2013
Application: In-house Recycling
Thomas Rauscher, Product Manager Cast Film Extrusion & MDO:
 "The new INTAREMA® 1108 T is a considerable improvement in terms of the amount of edge trim to be processed."

It is impressive to see that although it is virtually the same size as its predecessor you can process one third more material without any reduction in the quality of the recycled pellets produced."



Polykar Industries Inc, Canada

INTAREMA® 1310 TVEplus®

with SW RTF melt filter
Commissioned: Autumn 2014
Application: In-house und Post Industrial Recycling
Throughput: approx. 700 kg/h
Amir Karim, Vice President Business

Development:
 "We were already very satisfied with our TVEplus® system from 2011, particularly with the quality of the pellets, high process stability and the excellent, competent service provided by EREMA. Based on this positive experience we decided in favour of an INTAREMA® in the course of extending our capacity."



Copo-Plast Heinrich Winkler e.K., Germany

INTAREMA® 1310 TVEplus®

with Laserfilter
Commissioned: Spring 2014
Application: Post Industrial Recycling
Throughput: 1,000-1,100 kg/h

Heinz Winkler, Managing Director:
 "We are particularly pleased with the magnificent degassing performance and the consistently good throughput. The Laserfilter is of course absolutely perfect when it comes to impurities such as paper, for example."



Belgotex Floorcoverings (Pty) Ltd, South Africa:

INTAREMA® 1007 TE

Commissioned: Spring 2014
Application: Special Materials/Fibre Recycling
Throughput: up to 300 kg/h

Kevin Walsh, COO:
 "The INTAREMA® system is a boon for Belgotex! It enables us to reduce the PP scrap rates from our carpet production process to close to zero. The new system from EREMA has taken our process into a whole new dimension." (see p 30)



Preston Plastics Ltd, UK

INTAREMA® 1714 TVEplus®

Commissioned: Spring 2014
Application: Post Industrial Recycling
Throughput: up to 1,600 kg/h
Edgar Wallace, Managing Director:
 "This new machine gives us nearly three times the capacity we had previously."

It means we can continue to meet the increased demand we are seeing from the plastics industry, both in terms of volume and the types of plastic being recycled, diverting thousands of tonnes of waste from landfill and incineration. These are exciting times for the business as we plan for the future."



BPI Recycled products, UK

INTAREMA® 2018 TVEplus®

with two Laserfilters
Commissioned: Autumn 2014
Application: Post Industrial Recycling
Throughput: 2.450 kg/h
Ken Oswin, Operations Director, Recycled Products:

"We are delighted that the trials went better than expected and we witnessed the line running 2,450kg/h. The machine looks amazing. EREMA is a first-class company providing a brilliant machine which we know will give us many years of production and provide great value for money."



Megaport Ltd., Bulgaria

INTAREMA® 1714 TVEplus®

with Laserfilter
Commissioned: Spring 2014
Application: Post Consumer Recycling
Throughput: up to 1,350 kg/h
Miroslav Angelov, founder and owner:

"We are satisfied above all with the exceptionally good quality of the pellets which has also enabled us to increase the capacity of our blown film extruder by up to 30%. The price/performance ratio is remarkable and operating the system is very easy. The efficiency of the new Laserfilter is also very impressive."

BELGOTEX South Africa: all under one roof with INTAREMA®

Belgotex Floorcoverings (Pty) Ltd of Pietermaritzburg, Kwazulu-Natal, was the first company in South Africa to install an INTAREMA® system early in 2014 and is already reporting on the remarkable merits of EREMA technology and the outstanding increase in performance of the new generation of systems.

Operating from a 100,000 m² facility, Belgotex is the largest manufacturer of carpets in southern Africa, producing residential carpets, industrial floor coverings, vinyl flooring and artificial grass. In line with its dedicated and proactive approach to environmental policy, the family-owned company has always reprocessed any production waste. However, with the recycling system of a different supplier used previously it was only possible to use the recycled pellets to make underfelt – but no masterbatches, which had to be bought in as a result. Until the switch to EREMA technology, that is.



Belgotex uses the first INTAREMA® system to be employed in South Africa to recycle PP fibre and make high-quality pellets which are returned to the fibre production process.



Photo credit: Shan Pillay

100% reuse of PP fibre

Using the new INTAREMA 1007 TE system Belgotex can now process excess polypropylene fibre left over from the production of needlepunch carpeting into high-quality and defined recycled pellets which are returned to the fibre production process – with a single system and all under one roof. This has allowed the company to reduce PP scrap rates from its carpet production process to close to zero. Kevin Walsh, COO of Belgotex, is highly impressed: "The INTAREMA® system is a boon for Belgotex and enables us to further our 'green journey'."

Huge increase in output

Thanks to the proven EREMA technology and the innovations of the new INTAREMA® plant generation, Belgotex has also been able to boost its outputs. Shortly after the commissioning of the new system by locally stationed EREMA technicians, output already climbed to 300 kg per hour. Kevin Walsh sums up how satisfied the company is as follows: "The new system from EREMA has taken our process into a whole new dimension."



MCL COMPONENTS LTD Malta: consistent output despite great flexibility in injection moulding

The versatile and creative injection moulding experts, MCL Components Ltd of Malta, use EREMA technology to process post-industrial plastic waste and make high-quality recycled pellets, which can be returned (up to 100%) to the production process.



MCL Components Ltd use an EREMA 756 TE pelletising system to make recycled pellets from not only injection moulding runners and regrind, but also from bottle caps, pallets, crates, containers, plastic bags, stretch wrap and rejected parts. The input materials to be processed range from ABS, TPE, EVA, POM, PELD, SAN, GPPS and HIPS to HDPE. The recycled pellets produced are then returned to the production processes of injection moulders in Malta and other countries, with the

target being 100% reuse of the material. They are used, for example, by large multinationals operating in the fields of toy manufacture, automotive production parts, food and non-food packaging, to name only a few.

Consistent quality, enormous flexibility

The aim of MCL Components Ltd when investing in the system was clearly defined: to achieve recycled pellets with

consistent quality, while processing a wide range of materials. This is why the company decided in favour of the world-leading plastics recycling technology from EREMA. According to the MCL team, the TE system more than fulfils this requirement: "The quality of the output is very good. Above all, the recycled pellets have only a minimum amount or no residual moisture, thereby enabling us to push towards our target of 100% reuse in the production process."

POLIGROUP Bulgaria: 100% high-quality recycling film

Poligroup Ltd. of Bulgaria has been producing film of a high quality and in part with thicknesses around 30 µm from a mixture of wastes since September 2013. The system used by Poligroup consists of a washing plant from Herbold Meckesheim GmbH and a TVEplus® system from EREMA.



The film mix processed by Poligroup comprises three components: the basis is made up of LDPE waste agricultural film which, after the removal of contaminants, is a largely monofraction material with consistent MFI. Secondly there is LLDPE film waste which likewise comes from the agricultural sector and improves physical properties. And thirdly, films from household waste which accumulate in automatic sorting stations and are a particularly inexpensive material in the marketplace. These different materials, however, also mean various, in part very challenging, requirements in processing. Due to what is in some cases up to 50% contamination of the agricultural films (e.g. through sand and pebbles) and the household films being composed of a wide variety of plastics, Poligroup demanded enormous flexibility and high energy efficiency in their choice of the overall plant concept.

High-quality recycled pellets

Following the optimum preparation of the input material in the HERBOLD washing plant the washed, monofraction film flakes are processed on an EREMA 1514TVEplus® system (throughput 1,100 to 1,200 kg/h) with LF2/350 Laserfilter (filtration fineness 110 µm) and HG 244 hot die face pelletising system to make high-quality recycled pellets – which are then in turn reused up to 100% in the production of bin bags, protective covers and construction films. In the cutter/compactor with patented Air Flush Module the washed household film waste material with a high level of residual moisture of 8-12% and a high degree of contamination is cut, mixed, homogenised, heated, degassed, densified, buffered and dosed – all in a single pass. The proven basic principle of the TVEplus® system is the configuration of the

melt filtration upstream of extruder degassing, with the significant benefit that the minimal shearing influence in the melting process prevents any further size reduction of the contaminants prior to filtration and thus increases filtration efficiency. Furthermore, thanks to their early removal from the recycling system, the contaminants cannot outgas prematurely, thus additionally minimising any odour formation in the recycled pellets produced. The optimised triple degassing of the TVEplus® system also ensures highly effective degassing of the filtered melt. Nikolay Tomov, Production Manager at Poligroup, explains as follows: "The system also stands out through its easy handling and long service life of the wear parts such as filter screen and pelletiser knives. It has been customised exactly to meet our concrete application requirements and this means the highest level of efficiency for us."

MILJÖSÄCK AB Sweden: 8 million litres less crude oil every year through post-consumer recycling

The ecology-conscious company from Norrköping uses TVEplus® technology to process 8,000 tonnes of post-consumer LDPE and LLDPE packaging films every year from collection systems in Sweden and make plastic bags for industry, food and beverage services, household use and gardening.



Mathias Nilsson (Managing Director) and Per Åkesson (Production Manager) of Miljösäck

This application places high-quality requirements on output despite the high degree of contamination and moisture of the post-consumer waste. This is why Miljösäck AB has been using an EREMA RGA 160 TVE system for a number of years and has now also invested in a new TVEplus® 1716 system featuring Double Disc technology and Laserfilter. "The new system processes the input material even with residual moisture of up to 12% and is a very robust process. We are also particularly satisfied with the outstanding degassing performance and the Laserfilter, which is very

important for us for the production of transparent films," says Mathias Nilsson, Managing Director, explaining the benefits of the new TVEplus® system. Besides the top quality of the system, the company also appreciates the technical know-how and after-sales service provided by EREMA.

Ecologically aware

Miljösäck AB attaches great importance to ecological awareness and sustainability and takes a proactive approach to communicating these



Plastic bags made of rLPDE

values. The company calculates, for example, concrete figures which reflect their activities in the field of environmental protection: the production of the plastic bags from post consumer waste compared to production with raw materials means 16,000 tons less CO₂ emissions and 8 million litres less crude oil consumption on an annual scale. The energy-saving system with integrated ecoSAVE® technology from EREMA likewise makes a considerable contribution to this environmentally friendly result.

CLOSED LOOP RECYCLING

UK: food-contact approved rHDPE with VACUREMA®

London-based recycling company Closed Loop Recycling began producing food-contact approved rHDPE from milk bottle material in 2008. The existing plant capacity was increased to 4,800 kg/h early in 2014. As in the past, Closed Loop Recycling has remained committed to VACUREMA® technology from EREMA.



The processing steps are made up of high-quality preparation with a hot wash plant from B+B Anlagenbau of Krefeld, Germany and subsequent extrusion with upstream decontamination from EREMA. This process enables Closed Loop Recycling to produce rHDPE pellets from HDPE milk bottles for direct food contact.

Efficient decontamination and extrusion

Two VACUREMA® Advanced 1716 TE systems are used to process the already cleaned HDPE regrind and produce food

grade HDPE recycled pellets from it which is then reused in the production of milk bottles. In the course of expansion, Closed Loop Recycling installed what is now the third system of this kind, each with a capacity of 7,000 t/year. The deciding success factors of VACUREMA® are above all the highly efficient, food contact compliant decontamination upstream of the extrusion process and additional extruder degassing. The patented pre-treatment of the HDPE flakes at raised temperature and in high vacuum before the extrusion process removes moisture and migration materials from

the feedstock very effectively and in a stable process environment.

Food Contact Control (FCC)

Another benefit for Closed Loop Recycling is that the parameters for direct food contact compliance are monitored and archived continuously in the recycling process on all VACUREMA® systems. The automatic operating mode with Food Contact Control (FCC) supervises the recipe data stored and if levels go beyond defined limits an alarm is triggered automatically and (optionally) material flow is diverted away from current production.

NEW WORLD RECYCLE

Costa Rica: rPET for Coca-Cola

In spring 2014 the rPET produced by New World Recycle (NWR) was approved by Coca-Cola for the production of PET bottles in South America. The Costa Rican company uses technologies from EREMA for its recycling processes.



The VACUREMA® Prime 1714 T system at NWR in Cartago, Costa Rica

Based in Cartago, NWR is the first company in Costa Rica to process PET and rPET bottles to make rPET pellets. The company now has an annual capacity of 9,000 tonnes of PET which can be processed to make food-contact compliant rPET. Seen in terms of the positive environmental impact, this is around 300 million PET bottles less on landfill sites, beaches, and roads in Costa Rica. Thanks to the outstanding quality of the

food contact grade tested rPET and fulfilment of other strict, company-specific criteria, NWR received approval from Coca-Cola South America in February 2014 as a supplier of rPET for the production of PET bottles.

rPET with VACUREMA®

To begin with the PET bottles to be processed are prepared with a SOREMA

washing facility to make mono-fraction PET flakes which are then used to produce food contact grade rPET pellets with an optimum IV value of 0.82-0.84 on an energy-saving VACUREMA® Prime 1714 T system (capacity 1,000 kg/h). At NWR's sister plant, the preform company TotalP.E.T. Packaging, preforms with up to 100% of these rPET pellets are made for the production of new PET soft drinks bottles.

BEAULIEU TECHNICAL TEXTILES Belgium: COREMA® can even handle residual spinning oil

Beaulieu Technical Textiles (BTT), member of the Beaulieu International Group, is an established leader and driving force in the production of technical textiles made of PP, PE and biopolymers. Thanks to COREMA® technology, any production waste – even with spinning oil remains – can be reprocessed to make high-quality recycled pellets. This means that a large portion of it can be reused in the production process.



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The integrated production process of the polyolefin fibres for the carpet industry (carpet backings), in agriculture and gardening (agrotextiles), civil engineering (geotextiles), the packaging industry (coated and non-coated packaging fibres) and building (as membranes under roofing) also involves the use of spinning oils. The residues of this oil which are left behind in the materials represent a particular challenge when recycling the production waste. This is because the higher the quality of the recycled pellets

produced, the higher the share of the recyclate which can be reused in production. BTT has found the optimum solution for this special application in the COREMA® system.

Efficient degassing

In the first step the specially customised COREMA® 1109 T system enables efficient degassing of the (short-chain) spinning oil in the cutter/compactor. The spinning oil remaining in the melt is re-

moved in a further degassing step in the downstream twin-screw extruder which is designed for this purpose. The result is high-quality recycled pellets. Additionally, the low maintenance required and the process stability of the COREMA® system mean that BTT is very satisfied with the new plant.

Significant cost reduction

“We decided in favour of EREMA because our experience with the company and its



The COREMA® 1109 T system at Beaulieu Technical Textiles in Belgium enables efficient degassing of the spinning oil in the cutter/compactor.

products had been good in the past. The technology is always state-of-the-art and fit for our applications. EREMA was the clear choice for us,” explains Bart De Bleeckere, Production and Operations Manager of BTT. Thanks to the COREMA® system, BTT can now recycle all its production waste to make pellets with a satisfying quality – from PP and PE tapes to films and the waste from the spinning process – and significantly increase the share of recyclates in the end product. The benefit is greater production efficiency and with it a considerable reduction in costs.

COREMA® for Russian customer

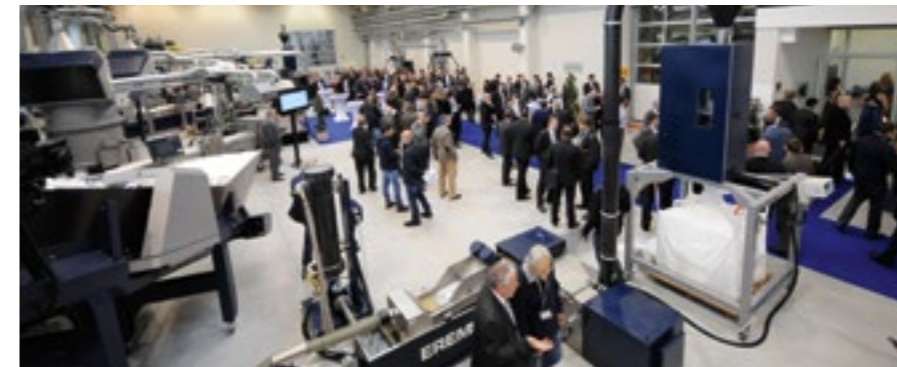


The combination of recycling and compounding with a COREMA® 1514 T enables the Russian company to produce exactly specified compounds from PP materials directly in a single pass. One particular benefit is the high degree of flexibility of the system with regard to different input materials.

NEWS ROOM

International guests flock to “**DISCOVERY DAY 2014**” In-house Recycling

Over 130 existing and potential international customers and guests invited by EREMA were at the company's headquarters in Ansfelden in Austria on 29 October 2014 for “Discovery Day 2014”. The focus of the EREMA's series of events this year was on in-house recycling, one of the company's core competencies. EREMA demonstrated how the quality of the end products can be kept constant with intelligent in-house recycling solutions while saving production and labour costs at the same time.



As material costs account for a majority (over three quarters) of the production costs of film – e.g. for flexible packaging – less production “waste” also means lower costs for raw material and disposal. With “Don't waste your waste” as the motto, EREMA showed how you can use intelligent in-house recycling solutions to return up to 100% of the plastic “waste” to the production process and thus save production and labour costs. Over 130 guests of EREMA came from the whole of Europe, Russia, Israel, Thailand and Senegal to benefit from the first-class information about the latest trends and product news in

this sector. Experts representing the entire value chain and from the well-known companies Borealis, SML, OCS, Polifilm Extrusion and EREMA provided valuable insights in their high-profile presentations. The talks were followed by live demonstrations on several INTAREMA® systems in the EREMA Customer Centre.

Intelligent in-house recycling solutions

In-house recycling solutions for flexible plastic packaging are a core competency at EREMA – some 2,000 of the over 4,000 EREMA systems sold around the

world operate in this application field. The new INTAREMA® plant generation offers users an additional boost in efficiency: the new, patented Counter Current technology means even higher output capacity, the Smart Start system makes operation extremely easy with a remarkably high degree of automation and enhanced ecoSave® technology reduces energy costs even further. Existing and potential customers who want to integrate recycling in production benefit from EREMA being able to provide concrete solutions to individual challenges, especially in terms of quality and personnel costs.

Innovative project initiated by PLAST-MAR in Poland: **“Recycling School”**

With the founding of the "Recycling School" named PLAST-MAR Punkt Edukacyjny in 2013, Marek Margielewski, owner of the plastics recycling company PLAST-MAR in Inowroclaw, Poland, launched an extremely innovative project with a view to educating schoolchildren about environmental matters.



Marek Margielewski educating Polish schoolchildren at the PLAST-MAR "Recycling School", explaining fundamental principles of waste separation, recycling and ecology



PLAST-MAR processes around 3,000 tonnes of post-industrial waste consisting of almost pure plastics every year – 30% PE and 70% PP, such as non-printed to heavily printed films, strapping, textiles, nonwovens and big bags – to make high-quality recycled pellets. As, however, the level of waste plastic sorting in Poland is only in the region of 10 to 20%, the company has to buy in the input materials from countries like Germany, England or the Netherlands, where the sorting level is already between 80 and 90%.

Sustainability starts in school

Marek Margielewski thus recognised, however, not only how important it is to promote waste separation in Poland but also that you have to reach out and make people aware of it – and, bearing in mind sustainability, best of all by starting out with how children grow up with it. This paved the way for the founding of a "Recycling School". Since 22 April 2013 schoolchildren aged between 7 and 13 have been able to visit the PLAST-MAR works where they are taught

the basic principles of waste separation, recycling and ecology in a hands-on way. In what is now one and a half years some 3,000 children have already been able to participate in this innovative education programme which is entirely privately funded by the PLAST-MAR owners. In the same way that Marek Margielewski puts his heart into it, the children are also highly enthusiastic on every visit. One particularly cute story is that one girl was so euphoric she decided to call her doll "EREMA" after the recycling system used by PLAST-MAR.

Exemplary environmental protection

Termoencogibles, a leading manufacturer of flexible packaging and an EREMA customer, supported numerous environmental protection projects throughout El Salvador in 2013.

One of the projects is the programme "We Clean El Salvador" run by the social foundation FUNDEMAS, in which Termoencogibles was both sponsor and highly active participant. Company employees and volunteers joined forces to clean up waste and refuse in communities in events such as the "Termoencogibles Cleaning Canton Joya Grande" day. The sponsorship money was used to finance presentations about environmental care in schools, with 396 teachers and 15,840 schoolchildren in 165 schools taking part in 2013. Another project initiated by Termoencogibles was the release of young sea turtles on the coast of El Salvador. In 2013, 60,000 out of a total of 200,000 of these reptiles were released. According to Termoencogibles these environmental activities were only possible through the support of all the staff and the company remains committed to continuing with this approach.



Happy Birthday Tony!

The EREMA team warmly congratulates Tony Horrocks on his 80th birthday!

As one of the first representatives on board from the beginning it was Tony Horrocks who successfully established EREMA's presence in the UK from 1984 to the middle of the 1990s with Norton Plastics Machinery Ltd. On stepping down he handed over management to his two sons Adrian and Mike Horrocks – and in doing so laid the foundation stone for continued, close and family-like collaboration between EREMA and the Horrocks family. Adrian Horrocks is still in charge of the UK business, Mike Horrocks is now CEO of EREMA North America, Inc. located in Ipswich and his son Luke (representing the third generation) works as a technician at ENA. Tony Horrocks today: "For me, having been involved from almost the very beginning, it is wonderful to see how successfully EREMA has developed – being THE innovation leader today and back then and now the unrivalled Number One in plastics recycling engineering. I still feel as if I am part of the big 'EREMA family'." Our heartfelt congratulations, Tony!



The Horrocks family: Adrian Horrocks, Tony Horrocks, Mike Horrocks (L to R)



Pritt and Interseroh close the loop

Henkel has joined forces with Interseroh, a subsidiary of the recycling service and raw material provider ALBA Group, and developed products made of recycled plastic.

The items in question are a Pritt Glue Roller and a Pritt Correction Roller which now feature casing made from procyclen, the multiple award-winning recycled plastic developed by Interseroh. Polystyrene waste is used as input material and comes from (among other things) used packaging and Henkel's own manufacturing operations. Peter Rushe, Head of Global Packaging at Henkel, emphasises: "Sustainability is connected inseparably with efficiency for us. For consumers, the significance of sustainable products is increasing without them wanting to make any compromises in terms of performance." Thanks to the individual recipe, the procyclen made in the "recycled-resource" process and consisting of virtually 100% recycled material, fulfils the highest requirements in terms of flow characteristics, impact resistance, stiffness and resistance to UV and heat.

PET Strapping Open House with Techno Plastic



Open House visitors were able to experience live the direct production of PET strapping on EREMA's VACUREMA® 1510 T Basic system with downstream Tight Strap 500 strapping line from TECHNO PLASTIC

EREMA and TECHNO PLASTIC, the Italian specialist for strapping and downstream monofilament equipment, welcomed more than 60 invited customers and guests from around the world to their "OPEN HOUSE INLINE STRAPPING" in Castelfranco Emilia in Italy on 31 March and 1 April 2014. The highlight of the exclusive event was the live demonstration of the VACUREMA® 1510 T Basic system featuring a downstream Tight Strap 500 strapping line from TECHNO PLASTIC.

The interested participants were able to experience the direct production of PET strapping live before the previously sold plant was shipped to the new owner FIP-CO Filling & Packaging Materials Mfg. Co. in Saudi Arabia. Additional items on the

agenda included expert talks given by specialists from both companies on the subject of "highly efficient, direct PET strapping production".

Efficient, direct production of PET strapping

PET strapping can be made in a very cost-efficient way from PCR-PET flakes and, compared to steel strapping, offers benefits in terms of safety, quality and handling. With the high-performance, patented VACUREMA® extrusion system from EREMA in combination with an appropriate downstream production line from TECHNO PLASTIC you can produce high-quality PET strapping using ultrafine filtration directly from 100% washed post-

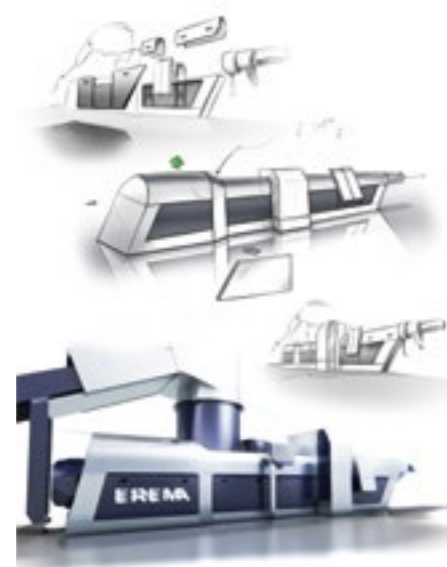
consumer PET bottle flakes or mixtures with virgin material and from strapping production waste. The end product stands out through excellent dimensional stability and first-class mechanical properties. The flexible, customisable technology from TECHNO PLASTIC was developed on the base of many years of experience and is designed for extrusion lines for strapping and monofilaments.



INTAREMA® wins design award

EREMA and Spirit Design have received one of the most renowned design prizes, the German Design Award 2015, for the innovative design INTAREMA®.

As one of over 2,250 national and international entries the INTAREMA® design was chosen by the jury of top experts with a special mention for "Excellent Product Design" in the category Industry, Materials and Health Care. The wide-ranging evaluation criteria included ergonomics, functionality, operation, level of innovation and aesthetics, among other things. Besides these aspects, Spirit Design also focused above all on the perfect engineering, simplicity and straightforwardness of the INTAREMA®. The prize will be awarded by the independent German Design Council at a celebration in Frankfurt on 13 February 2015.



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