



GAWGROUP

NEWS FROM THE GROUP imteam

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GAW

KRESTA
Anlagenbau Gesellschaft m.b.H Nfg & Co KG

OSMO
membrane systems

ARTEC

thomas
SPEDITION
Gesellschaft m.b.H.

KRESTA – plant know-how for Romania



Issue 1 | 2011
limited edition

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Shortcuts

Efficient fibre separation in the coating paint cycle

Cartiere Modesto Cardella S.p.A. commissioned GAW with supplying a workstation for a foil press equipped with the GAW-FES system.

The GAW FIBRE EXTRACTION SYSTEM is a combination of the GAW ECO-R and ECO-S filter systems and designed specifically for fibre-enriched starch glue cycles on the workstation. Due to the permanent partial flow sieving of the media via a GAW ECO-S filter station, the fibres are removed from the working circuit. The fully automatic filter control thereby ensures greater user-friendliness.

The GAW-FES offers with its compact design a smaller space requirement at the place of installation and causes far less dirt compared to open sieves.

The scope of delivery includes the complete mechanical, electrotechnical and procedural planning, installation monitoring as well as commissioning and training. The plant will be commissioned in August 2011.

Success in Syria

Although the Syrian economy is currently under considerable pressure, GAW has managed to acquire a large order for Azzouz Corporation, while also expanding its field of activity.

Azzouz Corporation, one of the world's largest manufacturers of laminated panels, has commissioned GAW with the task of supplying continuous enzymatic starch processing as well as size press workstations for its plant in Aleppo, the most densely populated city in Syria with almost 1.7 million inhabitants. Commissioning is scheduled to take place mid-2011 and the value of the order is approximately EUR 300,000.

Continuous starch processing for Indonesia

PT Pabrik Kertas Tjiwi Kimia Tbk., one of the biggest manufacturers of writing and printing paper in Indonesia and a long-standing business partner of GAW, has ordered a continuous processing plant for cationic starch as well as a GAW FIBRE EXTRACTION SYSTEM for the online coater OMC3. It will be delivered this autumn.

Editorial

At the start of the year, the upturn gained momentum within the EU in Austria, Germany and Scandinavia in particular and it is again proven that it is the manufacturers and globally active leading companies that secure out competitiveness and that a services and leisure industry society is certainly not what secures our wealth and never will be in the future. In Styria in particular, it is often forgotten that 37% of value added and 98% of exports have an industrial origin. Just as the fact that half of all jobs are in the industry – high-level jobs throughout it must be noted. And that brings right to the topic of education: not only Styria, but all of Austria requires well-trained employees to offer the correspondingly high-quality products and services as a highly developed country. Education provides the key competitive edge and if Austria really wants to equip its education system for the future, we must no longer be guided by civil servant unions and education politicians who are mainly interested in matters of power. What we need is training and education at the top level for our future workforce, from kindergarten through to universities. But in doing so, we must not lose sight of one thing: our competitiveness is not decided solely in higher academic degrees, but to a large extent also in the availability of well-trained applicants for apprenticeships – the experts of tomorrow, who ensure in the Austrian companies that investments made here can also be played accordingly and can be justified in the medium term.

For the companies of the GAWGroup, high qualification, good training and expertise, continuous learning, but also the experience that is partly already decades old of our employees is a very valuable and treasured commodity and made the successful development of individual GAWGroup companies as a whole at all possible in the first place. As such, this year we are celebrating in GAW technologies, the operating company from which the group of companies actually

emerged, the 60th company anniversary, and KRESTA has also proven itself as a very stable and aspiring partner in the 25 years of its existence. Both companies stand exemplary for our aim as a family-led company to create something that lasts, but also that success is borne to a large degree by the performance of our employees. For the future, I wish that exiting tasks, personal development prospects and the certainty of being needed to-

tomorrow continue to positively influence the commitment of all employees in the team of the GAWGroup.

Mag. Jochen Pildner-Steinburg

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Editorialteam Issue 1 | 2011



LEADING
ARTICLEFrom aspiration to the
creation of something
lasting – 60 years of GAW

Enthusiasm for new ideas and the quest to make them real and to make things move were the driving forces which prompted the graduate engineer Erhardt Pildner-Steinburg to set up a company. And so, in 1951, with a staff of five, he began to manufacture drive sections for woodworking machines and expanded the fields of activity with the production of machine feeds for the paper industry. A few years later he was already venturing into plant construction with his company, GRAZER ARMATUREN-WERK – the present GAW technologies and development nucleus of the group of companies GAW GROUP, and in the mid-60s he finally succeeded in breaking into this business area with the construction of a kaolin dissolving plant for the Steyrmühl paper mill.

After the premature death of the founder of the firm in 1974, his two sons, Jochen Pildner-

Steinburg MA und Jörg Pildner-Steinburg BEng, together with Peter Stuffer¹ and many further employees who have been committed to GAW for decades and are partially still in action in the company nowadays, have most successfully followed in the well-trodden footsteps of the founder. Their knowledge of the process engineering of products in liquid and powder form in the course of paper manufacture has been consistently upgraded and this enabled them to seize the opportunity to make a name for themselves for coated papers and cardboard in a market noted for its sophisticated demands. The business has steadily built up an international customer base and now GAW is a globally preferred supplier, wherever value-creating solutions in processing plant for the manufacture of refined paper and cardboard need to be found for individual customers. In this respect the

With consistency and farsightedness, the GAW family firm has developed from manufacturing fittings to being a constructor of industrial plant with international connections.

partnership with VOITH is especially mentionable, since the model of systems and technologies complementing one another has emerged successfully over the years.

But it was and is not only in the paper industry that the portfolio of products and services has been systematically developed. The firm developed new areas of business either on its own or by strategic buying-up of other companies, which, for example, has taken it into the plastics and chemical industry, the car industry and into the area of environmental technology. Today, Grazer Armaturenwerk Pildner-Steinburg GmbH, which is still 100 % family-owned, consists of: GAW GROUP, which consists of 21 independent firms, generating an annual turnover of 155 million Euro and providing safe employment for over 850 people, is also very well set up for the future.



Mr Pildner-Steinburg, what characterises GAW?

Above all, our long-term thinking. Our declared aim is to secure the long-term survival of the company and to maintain our independence as a family-led company with sufficient liquidity and profitable growth, but also to protect jobs and create new ones. But GAW also stands for the values of reliability and a high quality of relations to our customers, our employees, our suppliers and other partners.

Where do you locate the success factors of a family-led company? as GAW is?

At GAW the focus is not on the interests of stakeholders, but on the company itself – its productivity and functional ability to exist. The key factors for our success can be found both in the areas of strategy and innovation, but predominantly also in the corporate structure and management quality. We live consistent values such as conscientiousness, integrity, trust and loyalty.

How will the company jubilee be celebrated?

60 years is a long time, and we are also very proud of this success, but we have not planned any celebrations. As I mentioned above, a long-term approach and consistency are particularly important to us, and we will use the jubilee to underpin these values with actions by investing in the expansion of the site of the operating company GAW technologies in Graz. Here, a new hall is currently being created, which will also contain a state-of-the-art experiment laboratory and the main building will also be expanded by a good 600 m² of floor space.



The severe economic crisis is over. Has your way of thinking and acting changed in any way?

During the crisis, it was again proven that one stands out by strength and not size. We are strong and have mainly survived the crisis, in particular because we have always had certain principles and will also pursue these in the future, such as raise quality and market position instead maximise profits or strengthen a solid capital ratio basis instead of high debts.

Asia is regarded as the region of the future; China is likely to soon take the place of the US as the

world's economic powerhouse. What opportunities do you see for GAW in this region?

Within our group of companies, we have a very differentiated portfolio in very different markets and are therefore very well placed, while the significance of Asia for our business must by no means be underestimated. In the paper sector, we already dared to expand to China in the early 1980s – a market with huge potential, then as now. But other countries are following this development, above all India. GAW is an international company and we indeed also locate opportunities in growth markets like India, Turkey or Brazil, without losing sight of existing markets and customers.

¹ In 2011 Peter Stuffer spends his 51 years of service at GAW. He is globally recognised today as an expert in matters of paper production and beneficiation.

1 GAW technologies & Headquarter GAWGroup

2 GAW Filter station-cyclonic principle

3 OSMO Membrane Technology

4 KRESTA Tank construction

5 Jochen Pildner-Steinburg, Owner

² Family-led companies form the basis of our economy, create most jobs and generate a large part of revenues. Although no official statistics exist, one assumes that more than 80% of Austria's companies are owned by families, which in turn employ more than 70% of workers.

Project highlights
from 60 years

| A.-Nr. | Bestellung | Gegenst. |
|--------|------------------------------|----------|
| 1 | G/1098- 4 Stk. Stoffschleier | |
| | N/245/G 40 Stk. | * |
| | v. 14.5.57. 30 Stk. | * |
| | | 20 Stk. |
| | | 6 Stk. |



The very first order came from the Leykam Josefthal paper factory. On 19 February 1951, 100 feeders with different nominal widths and an order volume of ATS 50,000 were ordered.

In the mid-1960s, we achieved a breakthrough in plant construction. For the Steyrmühl paper factory, an alum removal plant was delivered, whereby the customer saved a significant amount of time, as the alum no longer had to be cumbersome transported from a station located on a mountain to the valley without having been removed. The removal was now possible directly at the site of delivery.

In 1979, Leykam Mürtzaler Papier und Zellstoff AG placed an order for the supply and commissioning of a complete, fully automatic system for starch glue and coating colour, which was then systematically expanded to nearly double the size and capacity over the next 20 years.

When the American car manufacturer decided to build a production site for the Chrysler Voyager in Graz in the early 1990s, this was GAW's entry into the automotive sector. A paint processing and supply plant was built.

The Triple Star project at Sappy Gratkorn in 1996 with an order volume of significantly more than 200 million shillings was the biggest single order in the company's history at the time and included the supply of coating, pigment and additive processing for PM11/SM11, which was at the time the biggest production plant for wood-free paper coated three times on either side.

In 2000 GAW assumed as the main contractor the processing of the Hami City Waste Water Treatment Plant project to build a sewage plant for the city of Hami in China. The project included the complete project management, planning and supply of machine and electric equipment for the sewage plant and was an important factor in the environmental technology business area.

In 2009 GAW was commissioned with the delivery and commissioning of the supply system for five new paper machines and a project volume of more than EUR 14 million by Nine Dragons Paper.

A fresh confirmation of trust, because the other 29 machines of the Chinese paper multi also contain know-how and equipment from GAW.



Jörg Pildner-Steinburg, Owner

"Sustainability is a topic that continues to drive us, and we consistently work towards remaining a company whose products and services enable our customers to compete successfully. This is the only way of securing our commercial success in the long term and remaining a reliable partner for the entire society."



Future prospects

In the paper sector, the new curtain coating technology will open up new application options for manufacturers of high-quality special papers or cardboards. At the same time, this contactless coating method also makes huge demands on the ventilation of the coating, as the nozzle for applying these has no direct contact with the paper web. With the conception of a coating kitchen with integrated ventilation and filtration, GAW technologies developed an innovative, future-oriented solution approach, which was welcomed by the market and has already been implemented several times.

In the areas of energy efficiency and natural resource conservation, plastic as a material for creative ideas is said to have a huge future, and film packaging in particular, which taps new market segments thanks to its broad range of applications and its continuously growing functions. According to a study by US-based Freedonia Group, the global need for flexible packaging is increasing by 3.5% annually, while the largest growth in volumes is expected in China. Existing enquiries at ARTEC as regards plastic recycling plants confirm this trend.



6 First order

7 Alum removal plant

8 Paint processing system

9 Wastewater treatment plant

10 The Triple Star project / Sappi

11 Product line Cascade

12 Curtain Coating

COMPETENCES

13 GAW ECO-R Filter

14 GAW Air-Vent filter



GAW test laboratory

In our 200m²-test laboratory, we are able to offer our customers individual test series for feasibility, project security and the evaluation of special products.

The test options comprise of the following procedural steps:

DISPERSING

Dispensing tests for preparing pigments, coating colours, and fillers as powders and liquids in line with both the batch and continuous principles.

FILTERING

ECO-R test filters with a continuous cleaning function and ECO-S backwashing filters are available both in the test area and for on-site testing.

VENTILATING/DEGASSING

Ventilation of coating colours according to the cyclonic principle (AIR VENT), as well as vacuum degasser.

Tests for fine-tuning project specifics and new developments can also be carried out. Evaluation is performed in our laboratory using standard methods such as viscosity measurement (Brookfield), dry content determination, pH measurement and grindometers; the determination of rheometric parameters is also subsequently available.

For further information about the test labor please contact Oliver Koroschetz (koroschetz.oliver@gaw.at) or Christian Stine (stine.christian@gaw.at).



In the new 200m²-test laboratory, in Graz there are carry out individual performance tests for the clients.

PROJECTS

GAW plant of huge dimensions for China and continuous kitchen for India

In cooperation with VOITH, GAW technologies is providing in a comprehensive package for a Chinese customer the wet end chemical processing and dosage as well as 5 workstations with SpeedSizers and coaters.

This new machine of the superlative will probably be the world's biggest producing folding cardboard box plant in the world, with a width of 837 metres, a construction speed of 1,400 metres per minute and an output of more than one million tonnes per year. Aseptic packaging boxes for the drinks industry will be produced – in particular for milk cartons, while a special mixture of mechanical pulp and cellulose will be used to produce aseptic LPB (liquid packaging board).

The order volume of the plant is several million euros and also includes the mechanical, electric planning and controlling.

The delivery will be made in September 2011; commission is planned for mid-2012.

High process quality with the GAW ContiMixer

For a project in India, GAW is supplying both the complete processing plant for wet end chemicals, starch and coating, while the coating processing is carried out in a continuous process. The continuous dispersing and processing of suspensions or coatings has, as a rule, the benefit that both fast recipe changes are possible and shear-sensitive products can be processed. Idle and mixing times can be controlled individually with the ContiMixer, while the profitability improves overall thanks to the optimum coordination of the single processes.



In China the world's largest folding cardboard box plant is being built and India is also hugely expanding its capacities.

15 GAW ContiMixer

16 GAW ContiMixer



GAW workstations for curtain coaters of 10 metres in width

As already reported in the last issue of imteam, the contactless curtain coating process is increasingly also being used for applications beyond the special paper range and GAW is already responsible for different applications at various customers for the conception and implementation of the corresponding workstations.

Together with VOITH, a customer in Shouguang in the Chinese province of Shandong is now being supplied with this efficient technology in an overall package. The special challenge of this project is the world's unique width of the double-layer curtain coater, while GAW is supplying the workstations for all commissioned works in the paper machine, i.e. for the SpeedSizer, Curtain Coater DF and Dynacoat Jet-Flow.

Significant quality improvement

The newly built paper machine will create coated packaging paper (test liners), while this type will be produced uniquely throughout the world with a coating order by Curtain Coater DF (Direct Fountain). Preliminary tests resulted in a significant quality improvement of the surface regarding coating and coat-ability – a quality that would not be possible without this excellent new technology of surface coating. And GAW can once again prove that efficient process improvements can be achieved in close cooperation with customers and partners.

The delivery will be made at the beginning of August 2011; the order volume is more than EUR 1 million.

A curtain coater for coated packaging papers with a unique width is being built in China.

17 Curtain Coating



KRESTA – plant know-how for Romania



To expand its Eastern European business and thereby also strengthen the site of Radauti (Romania), EGGER, the Tyrol-based derived timber product manufacturer, is investing in the construction of a new glue plant.

As part of awarding the contract, KRESTA managed to beat strong international competition. In doing so, the overall package offered – consisting of technology and delivery know-how – was crucial.

After completing detailed engineering, the installation on site began in October 2010. The plant is planned to go live in summer 2011.

Scope of delivery

Delivery and installation of the process piping: approx. 6500 m of pipes (VA steel and black steel)

Installation of the equipments: reactors, collection containers, pumps, filters, heat exchangers, etc.

Installation of approx. 600 tonnes of steel construction: i.e. process buildings, pipe bridges, supply house

Installation of the Formox plant: process piping, approx. 1500 m of pipes (VA steel and black steel)

Installation of the equipments for the Formox plant: reactors, absorber, condenser, tanks, vaporizers, pumps, heat exchangers, etc.

18 Glue plant

KWE – a bridge across the Rhine

A major project by Shell called Connect links the two refineries of Wesseling and Godorf (Shell Deutschland Oil) by a variety of new pipeline systems. Both refineries are located on the Rhine, which must be crossed twice as part of the connection.

Bridge building during ongoing refinery operation

In 2010 KEW was commissioned by Shell AG Deutschland with building a pipeline bridge from the shore side of the Wesseling refinery to an artificial loading island located in the middle of the Rhine. The major challenge for the installation team was undoubtedly in the fact that these 375 tonnes of steel construction had to be carried out during the ongoing operation of the two refineries.

During the implementation, the truss steel construction, which was roughly pre-designed by the customer, was optimised by KWE as regards steel construction; and while the steel construction work was being carried out on the support of the bridge, 20 kilometres downstream the new bridge was already being assembled at the Cologne-Niehl port. In parallel to bridge

construction, KRESTA carried out the pipeline work and finally the finished bridge including internal pipeline systems was transported to the Wesseling refinery in one piece using floating cranes and pontoons and lifted into place in a flush and timely manner.

And for the artificial Rhine island to again be used as a loading island for tankers, as was the case many years ago, pipeline bridges and loading platforms were also installed during the project.

Efficient cooperation

On the basis of the project, the strategy of the takeover of KEW by KRESTA in 2008 again turned out to be logical, and some overall plants have already been processed in the chemical and petrochemical industries. The bridge across the Rhine also formed a bridge to the next project: the supply of 375 tonnes of steel construction, woven filter and flue gas canal for a million project, which is being implemented near Winterthur in Switzerland. Also in Switzerland, near Zurich, KRESTA is carrying out modification work, including equipment installation on a paper machine.

Ongoing operation of the refineries as a particular challenge when building the bridge.

19 Pipe bridge



FOCUS ON

Spedition Thomas – special haulage to Russia

20 Mixing plant BT Binder GmbH



High cube container to Kikerino

BT Wolfgang Binder GmbH from Gleisdorf in Styria, Austria, is also very successful internationally as a provider of mixing plants, stone processing plants and conveyor systems, which meant that a mixing plant for construction materials designed as a module plant had to be transported to Russia in April.

Spedition Thomas was commissioned with carrying out the transport: the module plant with a total weight of 390 tonnes was placed in 35 containers, 20 foot and 40 foot high cube, and initially transported to St Petersburg and from there onwards to Kikerino,

which is about 80 km away, in 31 so-called mega trailers. The biggest challenge was to process the transport within the shortest amount of time, and the Russia know-how of the freight forwarding team was again tested in respect of customs. Because, fully in line with the mantra "there is nothing that doesn't exist", one must also respond very flexibly to new regulations and directives from the customs authorities when it comes to customs matters.

The value of the order was EUR 18,000 and was processed in only 2.5 weeks.

In addition to customs provisions, time was crucial for two deliveries to Russia.

Power generators to the Caspian Sea

For GE Jenbacher, one of the world's leading companies in the development and production of gas engines for efficient power and heat generation, the forwarding of power generators to Dagestan on the Caspian Sea was carried out door to door in only 3 weeks. For this EUR 350,000 project, the combined transport mode of lorry – ship – lorry was chosen from Grieskirchen (A) via Lübeck (D) and St Petersburg (RUS) to Dagestan. The generators were handed over during 23 heavy-load transports with dimensions of 13 m x 3 m x 3 m and a total weight of 460 tonnes.

RSE – cleaning plants for enamel-containing waste water

21 Wastewater treatment plant

Alfa Plam AD manufactures, amongst other things, kitchen hobs with enamelled surfaces, while the enamel for the production process is also produced independently. This is associated with a high occurrence of waste water, which must be cleaned accordingly.

Function

To be able to divert the waste water occurring during enamel production into the city sewage system in accordance with applicable Serbian regulations, RSE was commissioned with supplying two plants.

The first plant works on the basis of conventional precipitation and flocculation and cleans about 850 m³ of rinsing water from the process of enamelling³ and phosphating⁴. The waste water content substances, mainly solids, heavy metals and phosphates, are precipitated with the use of iron chloride solution with a pH value of around 7 and subsequently flocculated by adding polymers. The clear water flock mix is subsequently added to a diagonal lamella decanter, on whose floor a thin sludge is drawn off and which is separated and pressed off in a filter press to a dried filter

cake. The clear water phase thereby runs off from the decanter directly.

In the second plant, only the waste water from the enamelling, about 150 m³/month is cleaned with electric flotation. During this procedure, the solids and the heavy metals on Fe(OH)₃ are absorbed or reduced in refined hydrogen and

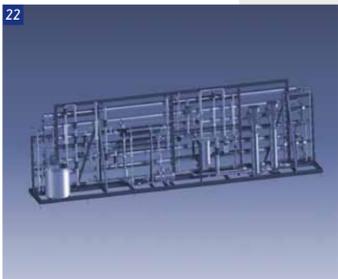
oxygen. This contemporary procedure is particularly profitable, as no chemicals are used.

Both plants work according to the state of the art and fully automatically. Alfa Plam AD will be the first company in southern Serbia to meet the new standards for indirectly fed in waste water in the industrial area.



OSMO successful with water processing plants

22



Together with a customer from the paper industry, OSMO developed an economic concept for water processing. The additional water processing plant will supply from the middle of the year both the steam generation of the existing paper production and the cooling circuit, which was previously only fed with water that was stabilised chemically in a complex procedure, which resulted repeatedly in deposits in the cooling system.

With the new system, partly desalinated water and hardness-free water is used as the feeding medium for the cooling tower. As such, the virtually ion-free feed-in avoids deposits in the cooling system and the chemical dosage is reduced to a minimum as are the operating costs of the plant.

The plant technology consists of a combined iron removal and manganese removal in the feed-in, the desalination is carried out with a

reverse osmosis plant with downstream softening plant. The gas release of the desalinated water is carried out with a contemporary membrane gas release unit, which separates the CO₂ contained with strip gas and a vacuum. The plant with a throughput power of 40 m³/h works fully automatically, which means that the necessary service work for the operating staff is limited to the filling up of the dosage chemical.

The new plant supplements an already existing smaller water processing plant, which was already commissioned by OSMO in 2004. Not least due to the highly stable and reliable operation of the existing plant, the customer opted for a further plant from OSMO.

It is remarkable that the original membranes are still in use in this plant after 7 years – proof of the good process design.

OSMO is delighted to announce two lucrative orders from the paper industry and medical technology – both follow-up orders from satisfied customers.

Deionised water in medical technology

OSMO Membrane Systems GmbH won a further order at the beginning of March of this year from a manufacturer of dialysis membranes from eastern Germany, which is building a new production line. The dialysis membrane will be used in the medical technology for blood washing.

The order includes the supply of several plant systems for demineralised or fully desalinated water (deionised water). The incoming city water is reliably desalinated from a conductivity of 600 µS/cm to permeate values smaller than 5 µS/cm and cleaned from removed carbon dioxide with membrane gas removal, which would adversely affect the production of membrane fibres. Gas removal using membrane contactors has the benefit that hardly any chemistry is needed, as the membranes used are highly hydrophobic and therefore do not let any water through, but only the gaseous components.

23 Water processing plant

ARTEC – largest single order in the history of the plastics recycling sector

Following tough negotiations, ARTEC won the hitherto biggest individual order for the supply of plastic recycling plants. For the regeneration of strings from polypropylene, the customer from China awarded a contract for 10 same-type plants of the ART 165V model. Every one of these plants is designed for a nominal throughput of 1200 kg/h.

One characteristic of this order is, in addition to the considerable volume, the special use of the recycling machines. Contrary to traditional granulation of the melted material, the smelter is fed directly into a spinning unit with this application. This means specifically that extremely soiled strapping strings used in agriculture are turned into fibres again during a throughput for the production of new strings.

Scope of delivery

The entire processing system consists of a crushing unit with rough preliminary cleaning, a washing and drying plant and an interim silo.

After this preliminary cleaning, the fibres are melted on the ARTEC recycling extruders; the smelter is then filtered and fed into the spinning nozzles with several melting pumps in a pressure-stable manner.

To feed the initial material, which is generally extremely soiled, directly into the spinning plant, the smelter must be filtered with very fine sieves, as the spinning nozzles would otherwise get blocked easily. To this end, ARTEC has designed the new melting filter 25F900 BF, which is designed with a filter surface of 1800 cm² for this application case precisely. Due to the large filter surface, the idle time of the sieve inserts can also be extended when using the finest of sieves on to a practicable period of use, thereby guaranteeing the productivity required.

The processing of this order pushed ARTEC to its installation capacity limits. But a fine-tuned planning of installation processing and plant installation in the assembly hall ensured the timely delivery.

Chinese customer orders ten recycling plants for the processing of plastic strings.

23 Assembly hall



ARTEC – success with the new CASCADE product line

After the new CASCADE product line was successfully commissioned with a customer in Japan for the first time, a follow-up order has already been placed. A long-standing customer from Poland has also opted for this plant type to meet the special project requirements – the initial material is strongly printed and has a high level of soiling.

With the flexible CASCADE concept, the necessary components can be compiled accordingly and the plant configured specially.

Function

The large proportion of solid soillings can be overcome with the use of two filter levels. As preliminary filtration for the "large-volume and soft" soillings such as paper, wood and external plastics, a continuous filter (sieve pipe with laser-perforated borings) is used between the two extruder levels. For an optimum granulate quality, the removal of these soft soillings is already required before gas removal.

After preliminary filtration, gas removal of the smelter is carried out on the second extruder. Depending on requirements, up to 3 gas removal levels are available. As such, for strongly printed plastics (e.g. shopping bags printed on both sides), gases occurring can be removed entirely.

Fine filtration is carried out as the final processing step. To this end, the newly developed ARTEC shaft filter of the 25F900 BF type is used. Due to the extremely large filter surface, very fine filtration is possible and the sieve exchange intervals can be extended accordingly.

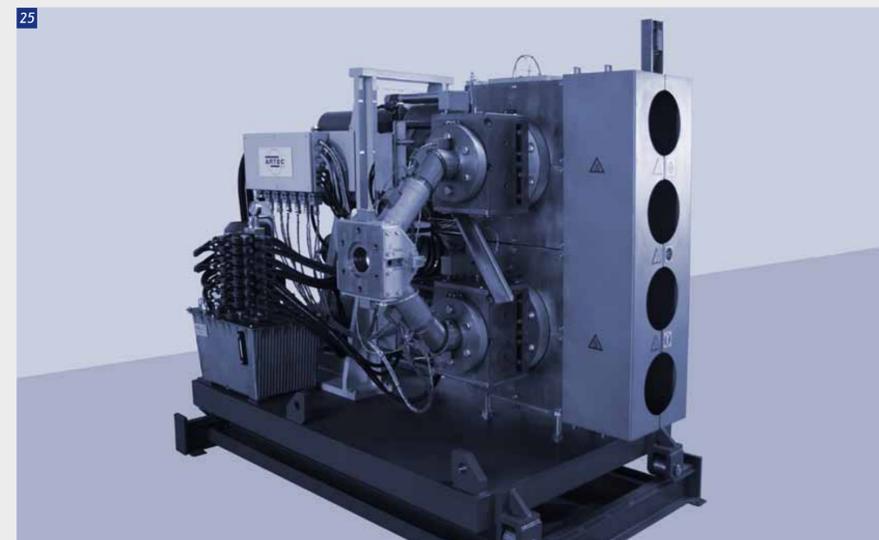
With this plant configuration, the customer can produce a regranulate quality from extremely soiled post consumer materials, which is suitable for very thin film thicknesses (up to 60 µm).

After the successful installation of the CASCADE product line in Japan, follow-up orders are also being made.



24 Continuous filter

25



25 ARTEC shaft filter of the 25F900 BF type

OSMO – new membrane procedure for lignin recovery

The new product, which was developed by OSMO in a major technical test series lasting several months, is a membrane procedure on the basis of ceramic ultra-filtration membranes to treat bleaching waste water from the paper and pulp industries. In accordance with the conditions existing at the customer, such as those of the bleaching process, the quantity of bleach waste water or the temperature level, etc., the turn-key plants can be used individually for CSB⁵ reduction with the simultaneous recovery of lignin. Fibres, solids and other soilings are removed by an integrated preliminary filtration station and the TS content is raised using a steaming unit to the desired concentration.

Lignin recovery – a future topic

The topic of lignin recovery is currently the subject of various research projects in particular in the paper and cellulose processing industries and the market opportunities for an effective procedure are regarded as very good. Both expert fairs and during personal meetings with experts from the paper industry, the new product of OSMO is being well received and two specific offers have already been made.

An official approval process is currently ongoing in Germany for the expansion of a production site of a large paper factory which includes the OSMO procedure. OSMO is, at least in Germany and Austria, therefore the first company that has managed to roll out the membrane procedure in this application on an industrial scale.

Clear reduction of the load degree of bleaching waste water

Lignin is a high-molecule three-dimensionally linked substance, which forms the development of wooded plants together with the cellulose and other polysaccharides. During the digestion of the wood, the originally insoluble lignin is broken down, made soluble and removed by cooking with other chemicals and by bleaching. The waste water arising in the process contains a high CSB load that is difficult to break down and is usually fed to multiple-stage waste water processing (anaerobic and aerobic steps of the waste water processing plant), while it is rarely possible to meet the legal feed-in values or to use the lignin concentrate on a commercial basis.

OSMO is the first company in Germany and Austria to roll out a new membrane procedure to recover lignin on an industrial scale.

The new procedure of OSMO now has both economic and ecological benefits. As the CSB content in waste water is now already reduced by about 40% before being fed into the prescribed waste water processing plant, it can be dimensioned on a far smaller scale. This has the benefit that both the costs for the plant technology and the running costs are a lot lower. On the other hand, when separating the CSB from the bleaching lye, high-quality and high-concentrate lignin sulphonate – in the case using the 100m³/h plant, this results in about 575 kg/h of lignin sulphate with a TS content⁶ of 40% – that is, amongst other things, used as an adhesive agent in wood pellet or in wood/chipboard production, but also as a replacement raw material in the production of glues, resins and filling substances or as an initial material for biodiesel production and currently needs to be produced in own processes.

OSMO has submitted its newly developed procedure on the basis of ceramic ultra-filtration membranes for the 2011 Environmental Technology Award of the State of Baden-Württemberg.

⁵ The chemical oxygen requirement (CSB) is a measure for the sum of all organic compounds in water, including those that are difficult to degrade.

⁶ Degree of drainage

E-business marathon at the Schwarzlsee a major success

²⁶ f.l.t.r. front row: Thomas Lenger, Mathias Lafer, Philipp Kaiser, Alexandra Ebenbauer, Christian Monschein, Brigitte Merlin, Robert Tüchi, Barbara Schauer, Martin Faustmann, Markus Wolkowitsch f.l.t.r. back row: Patrick Kohlhofer, Robert Spiegel, Alexander Hörner, Johanna Hübl

The 11th e-business marathon has been run and the event of the spring was excellent! Under gorgeous sunshine some 4,500 runners head on 6.5.2011 towards the Schwarzl-See in Unterpremstätten and ran their rounds. Team spirit was needed from the relay runners and every runner who mastered his or her round successfully, albeit shattered, had reason to celebrate. Impressive was also the team spirit of GAW: both the men and the mixed relay teams achieved excellent times and were able to rank in the front medium spots.



Gorgeous weather, 4,500 runners and GAW in the front middle of the pack.

People

IMPRINT

Publisher
GAWGROUP, GAW technologies GmbH,
Puchstrasse 76, 8020 Graz,
April 2011

Photos
companies

Conception/layout
PICHLER-JESSENKO
Mag. Alexandra Pichler-Jessenko
Agentur für Marktforschung und Kommunikation

Print
Print & Art Faksimile GmbH

For better text readability simultaneous usage of female and male phrases was waived. The text/book aims at both sexes.

Subject to misprints



Decades for GAW

People who put the majority of their professional life in the service of the company are an important basis for corporate success for GAW.

We wish to take this occasion to thank two colleagues, who have gone into retirement this year after decades of joint collaboration.

Our thanks go out to Mr Ernst Zohmann, who was always available to our customers and employees as a project manager with his huge pool of knowledge from experience, and Mr Anton Wachter, whose expertise and ability as a turner was always greatly appreciated.



Kreuzer Martin KRESTA Sales, field installation department (Montagemanagement)

With his dual studies of production technology and organisation at the Joanneum Graz polytechnic from 2004 to 2008, Martin Kreuzer prepared perfectly for the challenges in this company.

Since 2008, he has been working for the sales department of KRESTA and his focus is on the paper and pulp industries.

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Martina Wörner OSMO Project manager

Martina Wörner has strengthened the project management team at OSMO since December 2010. Due to her previous job with a renowned Stuttgart-based plant manufacturer in the area of water processing, she has huge experience in the processing of projects and handling national and international customers.

Both in business terms and personally, Ms Wörner travels all continents and is open to new countries, people and activities.

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