ANDRITZ RECYCLING TECHNOLOGIES

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RECOVER RAW MATERIALS MAINTAIN VALUES

As a manufacturer of high-grade recycling technology, we are aware of our considerable ecological and social responsibility and consider it our duty towards future generations to make a significant contribution towards conserving our environment and its resources.

Our technologies contribute actively towards recovering secondary raw materials with high recovery rates and thus reducing the extraction of primary raw materials. By treating different waste flows in pure fractions, we can make the raw materials they contain usable again in industry. Furthermore, we set ourselves the task every day of further improving the quality of the secondary raw materials generated and increasing our contribution towards protecting the environment. At the same time, we develop recycling solutions that pay off for our customers and offer our expertise for further technical optimization to improve the quality of results as well as profitability. We advise with vision: Together with the customer we develop future-oriented solutions to deal with new kinds of waste streams.

In our product development we also focus on sustainability and conserving resources while maximizing customer benefit at the same time. Our recycling machines are distinguished by their durability and energy efficiency, thus they also conserve the environment in everyday operation.

Each of our employees is fully committed to continuing the ANDRITZ success story in recycling.
The ANDRITZ Recycling brand is convincing customers worldwide and has made an impressive start. There are many reasons for this: 150 years of experience in industrial plant engineering, a wealth of MeWa and Franssons experience in the recycling industry, comprehensive process know-how, high innovative power, convincing references, global production and service network, and strong financial security.

**MeWa**

was launched in the mid-eighties with a handful of employees merely as a sales office for shredders – mainly for wood as well as the household and industrial waste sectors at that time. Very soon, however, it became clear that the company had much more to offer and progressed in the nineties from being a unit machine supplier to an expert in complete solutions for very different materials. Particularly in the field of electrical and electronic scrap and refrigerator recycling, MeWa’s plant solutions with a completely new kind of processing technology in the Universal Cross-Flow Shredder QZ attracted a great deal of attention and won international environmental awards. Within no time at all, the machines became the preferred technology throughout Europe for recycling e-scrap, refrigerators, and metal and plastic composite materials.

**Franssons**

The Franssons success story began over 70 years ago. In the early days, the company based in Sundsvall, Sweden, started to build fans for the wood and paper industries. For better transporting, Franssons finally developed the first shredder. Over the years, other types of machines were added to the product portfolio and today still also concentrate on processing household and industrial waste and plastic waste in addition to wood. Franssons adopted a more international structure when it opened a branch office in Southern Europe and established lots of international partnerships.

**ANDRITZ**

The MeWa and Franssons technologies have been sold under the ANDRITZ flag since 2013 and 2017. This has many advantages for customers: ANDRITZ has service and sales locations worldwide as well as state-of-the-art manufacturing centers. As a result, the company is even closer to the customer and can process inquiries more quickly. Extensive investments in the research and development sectors have given our recycling machines a new sheen and multi-faceted technical enhancements. The recycling machines fit perfectly into the ANDRITZ product portfolio and can also be combined to optimum effect with other ANDRITZ technologies, such as presses, drum dryers, or ballistic separators, for more complex plant concepts. In combination with the healthy financial foundation of the ANDRITZ GROUP, ANDRITZ Recycling offers customers and partners the security to invest in their recycling project.
RECYCLING THINK TANK
NEW ADMINISTRATION BUILDING AND TEST CENTER

In 2016, ANDRITZ MeWa moved into the modern facilities at Herdweg 4 in Gechingen, just a stone’s throw from the former company headquarters. In doing so, the company reacted to the growing demand for innovative recycling technologies and needs-oriented trials, deliberately remaining faithful to its location close to Stuttgart, the provincial capital of Baden Württemberg.

Modern, innovative, and friendly – its appearance now fits very well with ANDRITZ MeWa’s corporate philosophy. After all, the company had become one of the leading suppliers in many sectors with its innovative, modern solutions. Thanks to its modern building system engineering, such as air-conditioned rooms and automatic blinds, working here is also much more pleasant – ideas can be forged more easily, projects elaborated, and meeting held more efficiently.

The pilot plant has also moved to new accommodation and has already been used for material tests on several occasions. Protected against wind and weather, all materials can now be processed without any disruptions and the ANDRITZ MeWa machines are thoroughly tested.

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Josef Imp
ANDRITZ MeWa Managing Director

The appearance now fits very well into our corporate philosophy.

THE NEW TEST CENTER
• Very well equipped with the latest generation of machines
• Consulting with in-depth know-how
• Selection of the optimum machine, machine size, and technical features
• Meeting room in pilot plant
• All inquiries and tests treated confidentially
• Testing and development without any financial risk
The primary goal was to improve the products both technically and visually so that they set themselves apart in a positive sense from previous MeWa products and also from competitors’ goods.

In order to achieve a fresh design with high recognition value, an external designer was taken on board. The process of redesigning a machine always follows the same, tried and tested approach at ANDRITZ: When planning work starts, the actual status is analyzed in great detail: What are the advantages and disadvantages of the previous generation of machines? Is there potential for improvement? What are customers asking for? What requirements are dictated by the material? All of the findings are brought together in a specification. Then the first 3D concepts are created on a computer. The concept that comes out best in terms of costs, engineering, maintenance, and visual appearance is discussed at the first design review. The goal is to generate as many additional ideas as possible, but also to ask critical questions in order to optimize the concept further. After the changes have been incorporated, the first detailed drawings are prepared. In addition, possible product defects are analyzed in order to steer clear of them from the outset. The approval is given to manufacture the prototype in Graz at the ANDRITZ GROUP’s main manufacturing facility. Finally, the findings from the prototype phase are considered when building other machine sizes and pave the way for production in series at the various ANDRITZ manufacturing facilities.

Depending on the country where a machine is sold, the company can fall back on various different manufacturing locations, for example Humenné in the Czech Republic or Foshan in China. Each ANDRITZ manufacturing facility has the latest high-tech equipment and participates in the international transfer of know-how. This leads to the comfortable situation of being able to manufacture goods with the same high quality level everywhere.

With its own manufacturing operations at global level, ANDRITZ MeWa succeeds in responding quickly and flexibly to customer orders with its diverse product portfolio and was able to place many new machines in the national and international markets within a short time.

All of the machines in the ANDRITZ MeWa portfolio have gone through this process and seen successful further development.

The ANDRITZ MeWa machinery portfolio stands for high quality, convincing throughput, maximum flexibility, and low wear. ANDRITZ MeWa is continuing steadily on this path by completely reworking the machinery portfolio and offering fully renovated machines – both visually and functionally, with numerous improvements.

MANUFACTURING LOCATION IN GRAZ

The assembly shops at the manufacturing facility in Graz cover a total area of around 9000 square meters and house an impressive array of ultra-modern machining equipment. The main manufacturing facility has a capacity of 400,000 to 650,000 hours per annum and takes on orders from the various ANDRITZ business areas around the world.

The latest measuring technology combined with comprehensive materials testing secures the high quality of all of the products manufactured. This is an essential element in meeting the high standards requested by customers.

The manufacturing processes continue to develop just as the production results do. There are also specialists here working continuously on further development of the processes, and the individual products profit ultimately from this because certain features are improved and a higher quality is achieved overall.

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WELL PREPARED FOR THE FUTURE MANUFACTURING AT THE HIGHEST LEVEL

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E-SCRAP & REFRIGERATORS
LEADING TECHNOLOGIES WORLDWIDE

With its innovation – the Universal Cross-Flow Shredder QZ – ANDRITZ Metwa has strongly influenced the entire recycling sector and become the first address for e-scrap recycling solutions as a result. Without requiring cutting tools, the machine breaks down different composite materials quickly and gently with rotating chains so that the individual fractions, like iron, plastic, printed circuit boards, cables, and copper coils, are exposed and can be sorted easily in the process that follows. Parts containing hazardous substances, such as batteries and capacitors, are left intact and can be disposed of without any risk of fire.

INPUT
- Refrigerators (CFCs/pentane)
- Electrical household appliances
- White goods
- Consumer electronics

PROCESS ADVANTAGES IN E-SCRAP/REFRIGERATOR RECYCLING
- Process technology complies with WEEE/LABEX and GENELEC requirements
- Single-stage process
- Less wear thanks to chain technology
- Wide range of input materials
- Many possible settings
- Rapid access to exposed valuable fractions
- No hazardous substances released
- Manual and fully automatic sorting
- High recovery rates for valuable materials and CFCs/pentane
- Many references worldwide

OUTPUT
- Exposed printed circuit boards
- Transformers
- Aluminum
- Copper
- Iron
- Stainless steel
- Plastics
- Batteries
- Compressors
- Polyurethane
- CFCs/pentane

E-SCRAP & REFRIGERATORS

Electrical and electronic scrap is the fastest growing waste flow worldwide. Almost 50 million tons of electrical appliances are disposed of worldwide every year. In Europe alone, each inhabitant generates approximately 16 kg of e-scrap every year. According to a forecast by the United Nations, the volume of e-scrap will continue to rise sharply in the next few years.
**CABLES & FLEXIBLE WIRE**

**HIGH INNER VALUE**

Cable recycling not only conserves valuable resources, it also saves large quantities of energy. In fact, metal recycling only requires a fraction of the energy that has to be expended to mine and extract one.

There are many different types of cable with different cross-sections and material compounds: flexible wire cables, household cables, power cables, underground cables, copper and aluminum cables, as well as high-voltage cables with V-PE sheath. The strands contain a large amount of valuable materials due to the high metal content. As the individual fractions adhere very closely to one another, a recycling system that can produce small grain sizes is needed for optimum separation of the individual fractions.

**INPUT**
- Household cables
- Power cables
- Underground cables
- Copper/aluminum cables
- High-voltage cables

**PROCESS ADVANTAGES IN CABLE RECYCLING**
- Can be used for all types of cable waste
- High purity level and recovery rates
- Throughputs of approximately 2 – 4 t/h
- Pre-shredding aligned to the type of cables
- Output fractions according to desired grain size
- Optimum alignment of recycling steps
- Easy separation into individual fractions
- Vast experience: Many recycling plants built worldwide

**OUTPUT**
- Copper
- Aluminum
- Iron
- Lead
- Plastic

ANDRITZ METWA has been supplying complete processing lines for all types of cable waste for many years. The individual metals are recovered with almost one hundred percent purity using the units for pre-shredding, granulating, and fine granulating as well as modules for sorting and separating the raw materials.
There are hundreds of different types of waste, but many of them are very specific and thus require a special processing technology. The most attractive products for recycling are primarily those that contain metals like iron, aluminum, copper, or zinc because they can be recycled time and time again without any loss of quality and also be sold on the market for secondary raw materials at good prices.

Whether it is batteries, computer circuit boards, solar panels, scrap cans, aerosol cans, mattresses, metal shavings, aluminum profiles, waste paper or textiles tied in bales, metal sheets, and slag – ANDRITZ MeWa has dealt successfully with many different materials over the past 30 years and made a name for itself in developing special solutions. In the company’s own pilot plant, materials for which there is little experience available can be tested with the ANDRITZ MeWa technologies without any high financial risk.
The main task in recycling tires is to break them down into their individual components – rubber, steel wire, and textiles. In this sector, ANDRITZ MeWa recycling plants recover the raw materials with highest purity in a three-stage process. Old oil filters from cars and trucks are considered hazardous waste in all parts of Europe. But as they comprise at least 60% metal, recycling is well worth while. With special tooling, the Universal Granulator UG shreds the oil filter in a single-stage process. The individual fractions – iron, aluminum, paper, rubber, and oil – can then be separated from one another easily.

**PROCESS ADVANTAGES FOR CAR PARTS**
- Flexibility of input materials
- Cutting or striking technology: optimum tailoring to the material concerned
- Optimum separation of the individual material components
- Very high purity level and recovery rates
- Environmentally friendly, integrated solutions for draining oil out of oil filters

**PROCESS ADVANTAGES FOR TIRES**
- Throughput (depending on requirements) 3 – 20 t/h
- Purity of rubber granulate > 99,9 %
- Granulating and fine grinding to < 1 mm
- Plant can be expanded thanks to modular design
With a combination of pre-shredding, post-shredding, sorting, and drying, the entire flow of waste is separated into organic and inorganic components. Valuable fractions such as metals are removed from the process at an early stage and can be recycled. Finally, the non-recyclable residual fraction with high heat value is processed to yield a highly calorific substitute fuel that is used in the cement and steel industry or in power plants.

The metal fraction, often with plastics or textiles still adhering to it, can be cleaned further with the Universal Cross-Flow Shredder QZ.

Around 3.5 million tons of waste are produced globally every day. The main sources are the industrialized nations in Europe and North America. However, the amount of waste produced is also increasing particularly strongly in countries experiencing very high economic growth – for example China or India. ANDRITZ MeWa has developed an ecologically and economically viable process to cope with this deluge of waste.
Due to the rather high proportion of steel wire in the content, the rags are also a valuable source of raw material. In order to process the pulper rags, ANDRITZ MeWa has developed a two-stage process: the Universal Rotary Shear UC used to pre-shred the stringy material. The Universal Granulator UG deals with post-shredding. If a replaceable screen is used underneath the rotor with variable screen slot diameters, this can have a decisive influence on the throughput and the shredding result.

In Europe, waste paper is the most important raw material available regionally for the paper industry. It is supplied to the paper mills as compressed bales held in shape with tying wire. Any plastic films, textile scraps, tying wires, and similar components are contaminants in the paper preparation stage. They occur in the form of pulper rags and rejects.
Organic waste & renewable raw materials

The Bio-QZ comes into its own particularly with wrapped foodstuffs or kitchen and restaurant waste. By crushing and stirring the material at the same time, the Bio-QZ separates the organic from the packaging material. After the material mix has left the Bio-QZ, packaging and other inorganic components can be filtered out easily by means of separation technology.

Fast formation of gas

- High throughputs
- Wide range of different materials
- Higher gas yield due to faster gas formation
- Packaging removed from organic material
- Stable processes
- Homogeneous substrate suitable for pumping
- Scum layers dissolve quickly
- Easy to install in existing plants

INPUT
- Organic waste
- Restaurant/kitchen waste
- Packaged food
- Corn and whole crop silage
- Cow, horse and poultry manure
- Grass clippings

PROCESS ADVANTAGES OF THE BIO-QZ

OUTPUT
- Removed packaging
- Unwrapped organic waste
- Material suitable for pumping

ANDRITZ MeWa has developed its own technology for optimum preparation of packaged food, organic waste, and energy crops for the fermentation process in biogas plants. The Bio-QZ breaks down the cell structure of the input substrates, such as organic waste, corn silage, grass silage, and manure from cows, poultry, and horses, thus providing much more contact surface for the bacteria. In this way, gas formation starts measurably faster and more intensively. This can reduce the duration of the overall process substantially and increase the cost-effectiveness of the biogas plants up to 30%.

ORGANIC WASTE & RENEWABLE RAW MATERIALS

OPTIMUM TREATMENT FOR SUBSTRATES


Top: Packaged food. Bottom: Corn silage.

3D drawing of bio-waste processing plant
OUR MACHINERY PORTFOLIO

PRE-SHREDDING, GRANULATING, BREAKING DOWN THE MATERIAL

UNIVERSAL ROTARY SHEAR UC	
TWO-SHAFT PRE-SHREDDER

APPLICATIONS
Household/Industrial waste
Pulper rags
Tires
Sheet metal
Underground cables
Aluminum profiles
PVC waste
Mattresses

UNIVERSAL GRANULATOR UG	
POST-SHREDDING

APPLICATIONS
E-scrap
Plastics
Rejects
Tires
Cables
Metal profiles
Oil filters

UNIVERSAL CUTTING MILL USM	
FINE GRANULATING

APPLICATIONS
Aluminum cables
Copper cables
Tire granulate
PVC waste
Plastics

UNIVERSAL CABLECUTTER CC	
PRE-SHREDDER

APPLICATIONS
Underground cables
Telecommunication cables
Flexible wire cables

UNIVERSAL SHREDDER FRX/FRP
SINGLE-SHAFT PRE- & POST-SHREDDER

APPLICATIONS
Household/Industrial waste
Bulk waste
Pulper rags, rejects
Plastics
Textiles
Wood
Paper

UNIVERSAL CROSS-FLOW SHREDDER QZ
BREAKING DOWN MATERIAL

APPLICATIONS
Electrical and electronic scrap
Refrigerators
Printed circuit boards and LCD monitors
Composite materials: metal/plastic, iron/nonferrous metal, aluminum/plastic, wood/glass
Scrap cans made of tinplate and aluminum
Automotive parts (fittings, engine blocks, catalytic converters)
Metal separator fraction from MBT plants
Hazardous waste: paint tins, aerosol cans, batteries, toner cartridges
Production waste, e.g. steel/aluminum turnings
Fiber-reinforced plastics (FRP)
Packaged food
Organic waste

Output: Cut metal

Output: Aluminum granulate

Output: Fine copper granulate

Output: Cut metal

Output: Cable lengths

Output: Substitute fuels

Output: Iron parts

Output: Aluminum and copper parts

Output: Exposed printed circuit boards

Output: Fine copper granulate

Output: Cable lengths

Output: Substitute fuels

Output: Iron parts

Output: Aluminum and copper parts

Output: Exposed printed circuit boards
All empirical values gathered worldwide help get the maximum performance and reliability out of any recycling plant or machine on site. In addition, we provide ideas for other fields of application that pay off. And if instant action is needed, we will be there: Repairs, rebuilds, and upgrades are performed quickly in order to minimize downtimes. Our maxim: Maintain good contact to customers after successful installation of our machines and plant technologies as well – at best with a custom-tailored service agreement.

As a part of international technology Group ANDRITZ, ANDRITZ MeWa can fall back on an extensive network of service locations all over the world. Regardless of where our plant is, ANDRITZ MeWa customers appreciate the close cooperation with our local service experts.

ADDITIONS TO ANDRITZ-RECYCLING-SERVICE
+ More than 30 years’ experience with recycling machines and plants
+ Available worldwide, but at the same time close to the customer
+ Service team with excellent technical competence and customer orientation
+ Site visits
+ Repairs, rebuilds, upgrades
+ Individual, hands-on training
+ High-quality spare and wear parts
+ Individual service agreements

Contact our service team:

Service card to cut out and keep

Contact our service team: