ERDWICH

... SHREDDING UNLIMITED ...

ALUMINIUM RECYCLING

EFFICIENT PROCESSES

SAFE. FLEXIBLE. RELIABLE.

www.erdwich.com

Made in Bavaria

EFFICIENCY MEETS SUSTAINABILITY

Field-proven and high-performance aluminum recycling

Aluminum is a versatile light metal that is used in numerous industries - from the automotive and packaging sectors to the electronics industry. With the increasing demand for resource-saving production methods, the importance of efficient recycling is also growing. Our innovative recycling process ensures that aluminum scrap is returned to the cycle safely and economically. Even challenging input materials with impurities or alloys can be processed effectively with our technology.

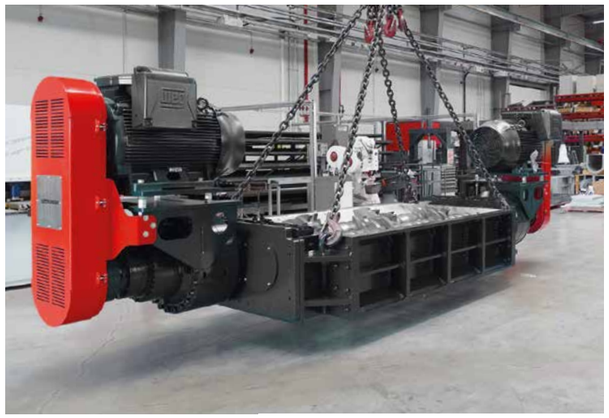
Highest grade purity despite difficult raw materials

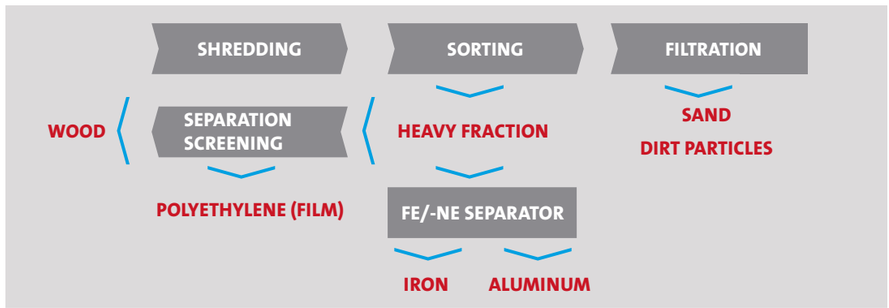
Pure aluminum can be recycled almost indefinitely - with only 5% of the energy required for primary production. However, in order to meet the high quality requirements of the processing industry, precise separation and sorting is essential. Our advanced recycling plant enables virtually unmixed separation through mechanical shredding, air separation, magnetic separation and specialized sorting processes such as X-ray detection. This enables us to recover valuable aluminum fractions that can be further processed without delay.

Innovative recycling technology for maximum resource conservation

Our multi-stage recycling process ensures low-loss recovery of aluminium while minimizing the risk of fire and explosion. Thanks to a sophisticated system concept with various programmable operating modes, different material fractions can be processed flexibly.

PROVEN TECHNOLOGY COUNTS!





left:
Hammer mill HA 800

right:
Pre-Shredder (Ripper) RM1350

Gentle shredding: Instead of simply cutting the material, it is pulled apart in a controlled manner using special shredding technology. This prevents blockages and ensures that the material is exposed evenly.

Effective separation processes: Various separation techniques such as magnetic drums, eddy current separators and air classifiers enable the removal of impurities and precise sorting by alloy.

Explosion protection through controlled conditions: As aluminum dusts are highly flammable, our technology relies on temperature-reduced processing and sensor technology to monitor the dust concentration.

Flexible operating modes for different input materials: Our system technology enables the processing of a wide variety of aluminum scrap thanks to individually adjustable operating modes. Depending on the material composition, the optimum processing strategy can be selected to ensure maximum purity and efficiency.

With our innovative recycling solution, we are setting new standards in sustainable aluminum recycling - efficient, safe and forward-looking. In this way, we are making an important contribution to conserving natural resources and ensuring high-quality raw material cycles.

RECYCLING PROCESS
DESCRIPTION FOR
ALUMINUM SCRAP

A NEW APPROACH TO SUSTAINABILITY

EFFICIENT. SAFE.
FORWARD-LOOKING.

Our aluminum recycling takes place in three coordinated process steps to ensure maximum efficiency and material purity.

First, the material is coarsely crushed to prepare it optimally for the subsequent sorting processes. This is followed by separation and screening, in which unwanted components are removed and valuable metal fractions are separated. In the final step, the aluminum is precisely divided into unmixed fractions so that it can flow directly into the recycling process.

Step 1
Shredding

Here, the material is broken up using a powerful shredder before being passed on to the hammer mill. This combination ensures effective shredding without overheating the material or risking explosions. The controlled pulling apart of the material enables uniform material exposure and optimizes the subsequent separation.

- **Effective shredding:**
  The ripper ensures uniform, blockage-free pre-shredding and minimizes blockages.
- **Hammer mill for secondary shredding:**
  After the initial break-up, the hammer mill further reduces the material to an optimum grain size.
- **Minimization of dust formation and fire hazard:**
  Temperature-reduced processing, in combination with sensor-monitored dedusting during processing, prevents ignitable dust concentrations.

Step 2
Screening and separation

After pre- and post-shredding, the material is separated and screened in order to remove unwanted components and free valuable metal fractions. Sorting is carried out using a combination of different mechanical processes.

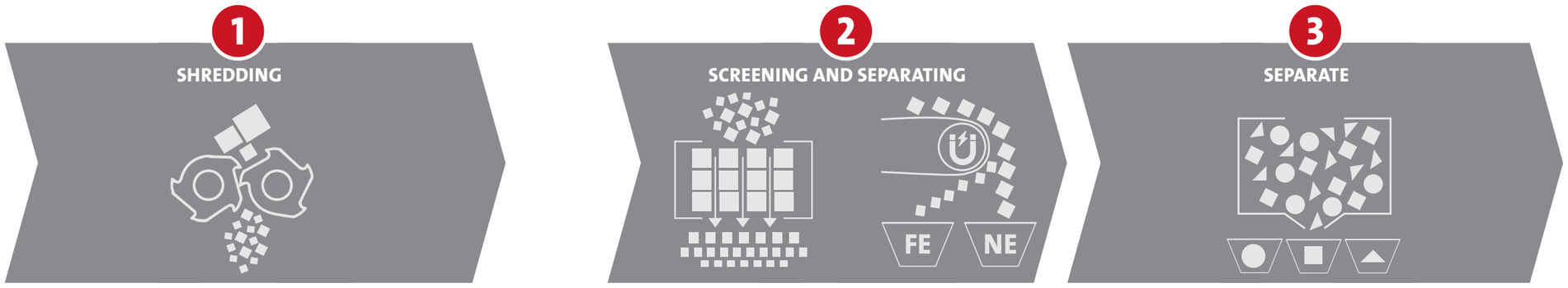
- **Wind sifting:**
  Removes unwanted light material, e.g. wooden parts and foils.
- **Magnetic separation:**
  Separates VA and FE materials.
- **Screening:**
  Various screening processes separate material fractions according to size and prepare the material for final separation in order to efficiently sort out impurities and expose valuable metal fractions. Various mechanical processes are used here to separate the aluminum based on size, weight and magnetic properties.

Step 3
Separation

In the final step, the separated aluminum fractions are freed from any remaining foreign matter and separated into pure alloys. State-of-the-art separation processes are used here to ensure the highest quality.

- **Eddy current separator:**
  Separates aluminum and other conductive non-ferrous alloys from non-ferrous metals and other impurities.
- **X-ray detection:**
  Detects and separates all aluminum alloys from other alloys, such as zinc die casting.
- **Laser induction separation:**
  Analyzes and separates according to different aluminum alloys.

Discharge fractions:



FLEXIBLE COMPLETE SYSTEM
FOR ALUMINUM RECYCLING

EFFICIENT SHREDDING AND SEPARATION TECHNOLOGY FOR MAXIMUM PURITY.

Maximum efficiency through flexible recycling processes

Leading international recycling companies have opted for ERDWICH to meet the increasing demands for purity and cost-effectiveness. ERDWICH has developed state-of-the-art plant technology that combines maximum efficiency with maximum safety.

The operator's existing recycling plant could no longer meet the increasing demands of the industry. The aim was to create a solution that would reliably process aluminum from mixed scrap fractions and efficiently remove interfering components such as FE and INOX material, foils or wood splinters. In addition, fire and explosion risks had to be minimized and the material throughput optimized.

The special feature of this system lies in its three flexible operating modes, which enable customized processing of different aluminium scrap fractions. By individually adapting the processing parameters to the respective input material, maximum purity and efficiency is achieved.

Example of possible operating modes for maximum flexibility:

Mode A:
Standard process for mixed aluminum scrap

- The aluminum scrap is fed directly into the RM1350 pre-shredder and then re-shredded in the HA800 hammer mill.
- Separation takes place via a combination of magnetic drum separator, air classifier and eddy current separator.
- This mode is suitable for heterogeneous material streams with varying impurities.

Mode B:
Processing of pure aluminium fractions

- Specially designed for pure aluminum scrap, this mode enables particularly fast and efficient material separation.
- After shredding by the RM1350 shredder, the material is sorted directly into FE and V2A material using a two-stage magnetic separation process.

Technical features:

ERDWICH plant technology combines high-performance shredding technology with high-precision separation processes to ensure maximum sorting purity. The recycling process includes:

Efficient material feeding & shredding:

- Pre-shredding by the RM1350 shredder for uniform material exposure.
- Post-shredding using the HA800 hammer mill for optimum fraction size.

Precise separation & sorting:

- Magnetic drum separator for FE and V2A separation.
- Air separation to remove foil and wood splinters.
- X-ray sorting for separate collection of aluminum alloys.
- Eddy current separator for clean non-ferrous metal separation.
- Laser induction separation for separating different aluminum alloys.

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... SHREDDING UNLIMITED ...

Further areas of application:

- **E-scrap- cooling appliances**
- **substitute fuels**
- **cardboard**
- **hazardous waste**
- **Aluminum processing**
- **and much more.**

Innovation is our standard!

As a highly specialized engineering and production company with over 30 years of experience, ERDWICH offers exceptional services in recycling and shredder technology. Shredding machines, special solutions, complete recycling plants and worldwide service are our core competencies, to which our team is enthusiastically committed every day.

Owner-managed, with personal, intensive support, short response times and comprehensive service, we provide you with first-class quality made in Bavaria. Get to know us.

A warm welcome to you!

Core competencies:

- **Hammer mills**
- **Shredding machines**
- **Plant construction service**

Take your chance and test your material without obligation at the ERDWICH test center.

We look forward to hearing from you.

ERDWICH ZERKLEINERUNGS-SYSTEME GMBH

Gewerbestraße 6
D-86859 Igling

Tel.: +49 (0)8191 - 96 52 - 0
Fax: +49 (0)8191 - 96 52 - 16
E-Mail: infoline@erdwich.de

www.erdwich.com