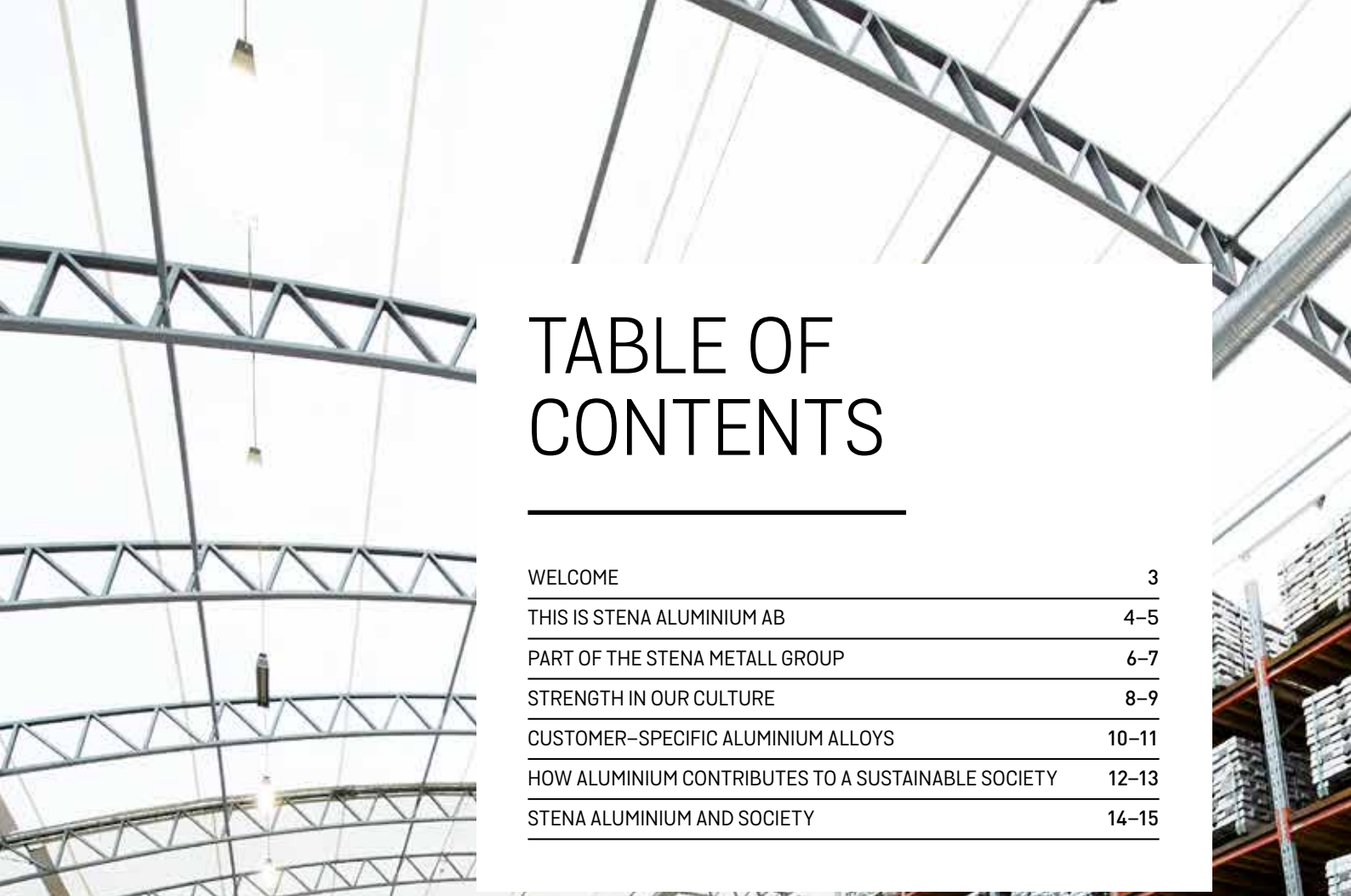

STENA ALUMINIUM
ALUMINUM PRODUCTION THROUGH RECYCLING SINCE 1949
STENA
ALUMINIUM



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Produced by the Stena Metall Group.
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WELCOME TO STENA ALUMINIUM

Aluminium is a perfect material in a circular society. It is light, sustainable and easy to form. It is ideal for use in both design objects as well as industrial components. And not least, aluminium recycling is extremely successful, time and time again.

Stena Aluminium's key mission is to help our customers to achieve greater success. We do this through close and long-term partnerships based on quality, high delivery precision and flexibility combined with our material skills. We are genuinely interested in optimizing the properties and the value of your aluminium, for both your process and the final component. The fact that we produce all aluminium through recycling provides additional values in the form large environmental benefits which strengthen your contribution to a circular economy and a sustainable society.

As a customer of Stena Aluminium you have access to decades of experience in the field of recycling and production of aluminium. Our foundries have remained in the same location since 1949 but processes and technology are updated continuously. For a number of years we have invested SEK 300 million in production and environmental technology that enables an increased aluminium production and at the same time reduce our impact on the environment in many areas. We make use of our waste heat and deliver it as district heating in Älmhult. We have made more than 2,000 deliveries of liquid aluminium, which we were the first to offer and are still the only providers of in the Nordic countries. When you need technical competence, support in terms of product and process development or assistance with questions in metallurgy, our expertise always accessible.

In Stena Aluminium you have a committed partner to help take industry in a positive direction, both in terms of national issues and issues that are decided on the international level, such as EU legislation. You also have a partner to help to develop and market the use of aluminium as the natural materials in products, components and designs.

Through close cooperation with universities and other institutions and with customers and customers' customers we develop existing as well as new alloys for existing and new applications.

The fact that Stena Aluminium is part of the Stena Metall Group provides further value for you as a customer. In cooperation with our group company, Stena Recycling, we can help your business to recycle all types of waste, optimize resources management and strengthen your entire sustainability work. Within the Group we also have access to solid expertise in the field of Research and Innovation.

Everything to contribute to your success - both today and tomorrow.

Thank you for your trust!

Fredrik Pettersson, CEO, Stena Aluminium

THIS IS STENA ALUMINIUM AB

Our vision: We are the industry leader in Europe for sustainability and customer satisfaction. Our business idea: We are a long-term partner for aluminium foundries and their customers. Operational excellence enables us to provide recycling-based aluminium alloys and value-added services.

INNOVATIVE RECYCLING IN ÄLMHULT SINCE

1906

OPERATIONS

Stena Aluminium is the leading producer of aluminium alloys from recycled raw materials in the Nordic countries.

We produce upwards of 300 different aluminium alloys for aluminium foundries in Northern Europe. Besides aluminium alloys, we also assist with technical matters in metallurgy, materials and processes, as well as market impact and sustainable business solutions. In co-operation with our customers we create solutions to facilitate and streamline everyday life and work, which ultimately strengthens the competitiveness for our customers and customers' customers.

In order to be a long-term sustainable business partner, we continuously reinvest in our operations. We are actively working with continuous improvements to create efficient and environmentally-friendly production and value-creating management of both raw materials and slag waste. We are constantly striving to reduce the environmental impact of our operations.

There is a major focus on environment and safety throughout the business, and it is characterized by a positive, safe and stimulating working environment.

Stena Aluminium operates its production facility in Älmhult, where its roots go back to 1906 when Gotthard Nilsson established recycling activities in Älmhult. As the plant is located in the center of Älmhult, the company has made comprehensive investments in the local environment in order to be a "Good Neighbor".

The licensed volume for the plant amounts to 90,000 tonnes per year. Stena Aluminium has a turnover of SEK 1 billion and employs more than 100 people.

1906–1949

The activities in Älmhult date back to 1906 when Gotthard Nilsson started a business based on recycling waste products. Recycling of both metals and textiles was an important part of the business for a long time. Production of aluminium alloys started in 1949.

1998

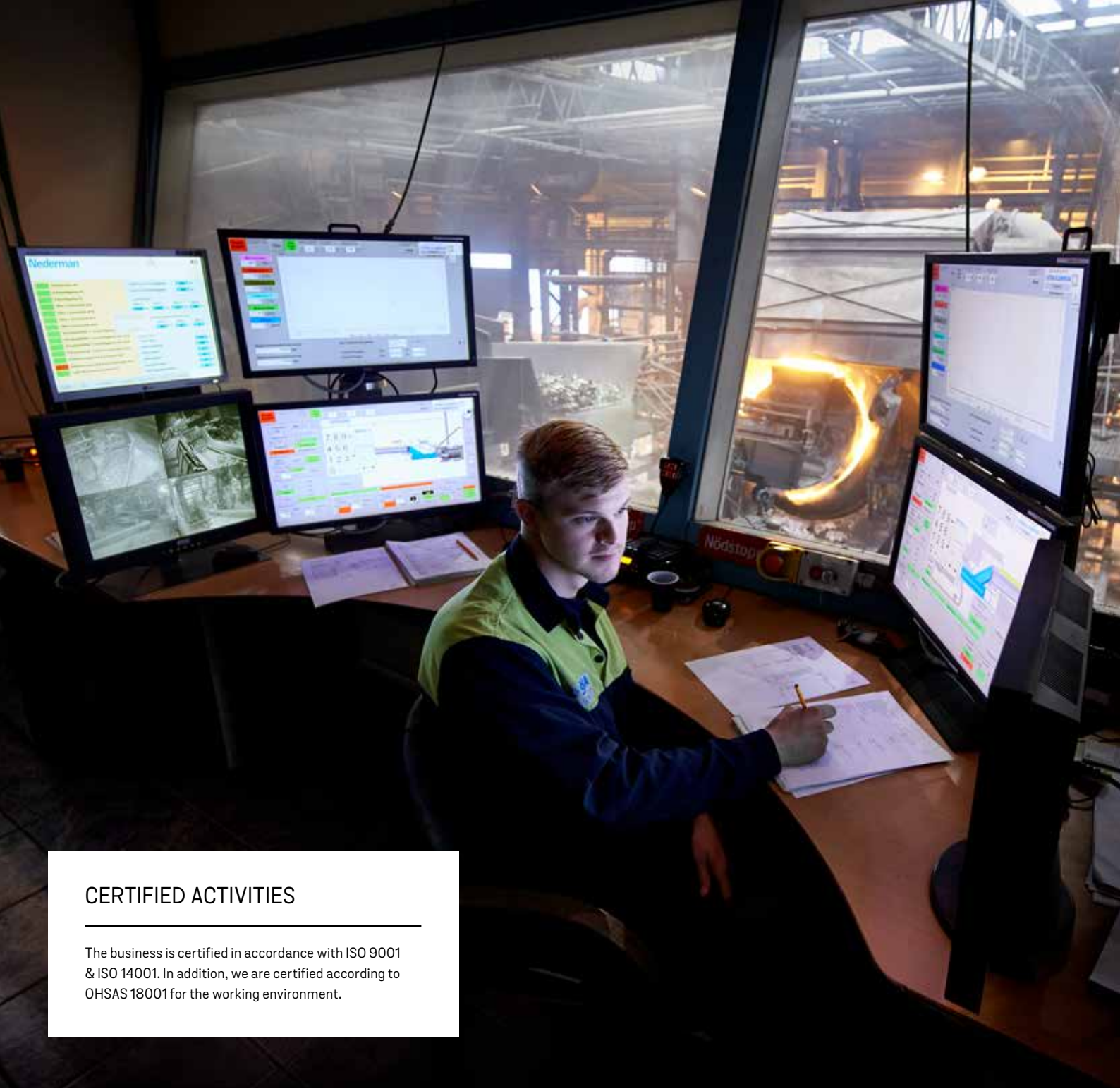
In 1998, the Stena Metall Group acquired Gotthard Nilsson, which had activities of large parts of the country. The aluminium business in Älmhult later changes its name to Stena Aluminium.

2001

New smelting furnaces were installed with globally unique technology. The new furnaces provided increased capacity, improved capabilities for refining aluminium scrap, a better working environment and a reduction of energy consumption.

2008

Delivery of liquid aluminium starts using specially built large crucibles. Customer energy consumption is reduced, because the aluminium does not need to be melted before it is used in production. Each delivery of liquid aluminium saves up to two tonnes of carbon dioxide emissions through energy savings.



CERTIFIED ACTIVITIES

The business is certified in accordance with ISO 9001 & ISO 14001. In addition, we are certified according to OHSAS 18001 for the working environment.

2011

A specific laboratory for materials testing is inaugurated. This contributes to new and increased value for customers and increased use of recycled aluminium.

2012

The largest environmental investments in the company's history are made. New state of the art flue gas purification system is installed to reduce the impact on the environment compared to earlier, despite the increased production. Later in the year, the facility for supplying waste heat to the district heating grid in Älmhult is commissioned in cooperation with E.ON.

2016

During 2016, a new facility for recycling aluminium from salt slag is commissioned. Salt slag is the byproduct of aluminium production. Aluminium is extracted from the slag by cooling the salt slag, and the salt slag that is left over can be recycled.

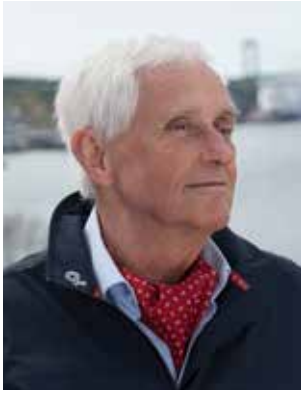
2017

Part 1 of the new material halls is opened, which means that large parts of the material handling is moved beneath roof. More operations in roofed areas provide several benefits when it comes to quality, safety and the environment.

PART OF THE STENA METALL GROUP

Stena Aluminium is included in the Stena Metall Group, which carries out activities within eight business areas in approximately 200 locations in ten countries. The Group's more than 3,000 employees work together every day with thousands of customers to create new value of benefit to all - the companies, the environment and society as a whole. Stena Metall Group's recycling company recycles five million tonnes of waste every year. The various companies provide society with the necessary raw materials, steel products and marine fuels. The Group works with research and development to meet the challenges of the future.

The Stena Metall Group is part of the Stena Sphere, one of Sweden's largest family-owned corporate groups with operations throughout the world.



"Working in harmony means taking care of each other and of the environment. We solve problems together. It is the driving force."

Dan Sten Olsson, CEO, Stena AB (publ.)
and Chairman of the board of directors of the Stena Metall Group


STENA
ALUMINIUM

STRENGTH IN OUR CULTURE

At Stena Aluminium we believe in the strength of working together. With customers, with each other, with other stakeholders that we come into contact with. We want to create value every day and this has been the case since the start.

Positive cooperation contributes to the development of our customers' and our own business.

OUR THREE CORE VALUES PERMEATE OUR ACTIONS.

1 SIMPLICITY

We operate in close cooperation with our customers. We provide customer-specific support without unnecessary bureaucracy.

2 RELIABILITY

We endeavor to create long-term, viable relationships built on our ability and expertise.

3 DEVELOPMENT

We create new values by being proactive and adapting to new demands from customers and society.

CUSTOMER-SPECIFIC ALUMINIUM ALLOYS

Our products are customer-specific aluminium alloys produced through recycling.

Our processes are continually being developed and are subject to thorough analysis and extensive quality control checks: from the moment we receive the raw material, during the entire processing and production stage and up to the time of delivery. All of these elements form the basis for high ratings from our customers for accurate and consistent quality and high delivery precision.

All aluminium alloys should be adapted based on the requirements of the customer on the properties of the products.

Our alloys are mainly used in the automotive, electronics, engineering and furniture industries. We produce a couple of hundred different alloys with varying properties in terms of the conductivity, heat conductivity, resistance to corrosion, strength, polishability, breaking strength, yield strength, machinability, weldability and much, much more.

We can supply all alloys in the form of aluminium ingots or liquid aluminium. The ingots are stacked in bundles that are strapped together for more efficient handling.

Stena Aluminium is the only supplier in the Nordic countries that supplies liquid aluminium to industry. The deliveries are made in specially built industrial crucibles, each containing eight tonnes of aluminium, with three crucibles per truck. The temperature of the aluminium in the crucible is adapted to customer requirements and can therefore be used immediately in the customer's production. Large amounts of energy are saved by customers not needing to melt the aluminium ingots. This entails that each delivery of liquid aluminium means two tonnes less of carbon dioxide emissions.

2 tonnes

EACH DELIVERY OF LIQUID ALUMINIUM MEANS TWO TONNES LESS OF CARBON DIOXIDE EMISSIONS.

LOADING LIQUID ALUMINIUM

Stena Aluminium is the only supplier in the Nordic countries that supplies liquid aluminium to industry.
Large amounts of energy are saved by customers not needing to melt the aluminium ingots.

HOW ALUMINIUM CONTRIBUTES TO A SUSTAINABLE SOCIETY

Aluminium produced by Stena Aluminium in Älmhult is an important part of a sustainable eco-cycle. Aluminium can be recycled an unlimited number of times without the metal losing its qualities.

Aluminium is the third most plentiful element and the most common metal in the Earth's crust.

New aluminium is obtained from bauxite, which contains aluminium oxide. Bauxite is mined from the Earth's crust and the aluminium oxide is then extracted through an advanced and energy-intensive process. Pure, molten aluminium is separated from the aluminium oxide during the process and is refined into primary aluminium.

Aluminium is a light metal that is easy to shape, strong and resistant to corrosion. It has a low density, which enables it to be used in many different constructions and applications. The range of uses extends from small household utensils, such as pots and pans, to large constructions subjected to heavy loads, such as components for the automotive industry. In the automotive industry, aluminium contributes to lower vehicle weights, which leads to lower fuel consumption and consequently less environmental impact. Aluminium's good resistance to corrosion is especially advantageous in the construction industry in that it provides longer service life and low maintenance costs for roofs, facade plates and window frames, for example.

Aluminium is a sustainable materials that can be recycled an infinite number of times without the metal losing its properties. More than 75% of all aluminium ever produced is currently still in use. Recycling of aluminium creates environmental benefits in several ways. Thanks to its recycling properties, a smaller portion of society's waste products goes unused, which reduces incineration and landfill costs. Moreover through recycling, the aluminium production process consumes just five percent of the total amount of energy required to extract aluminium from bauxite.

With a sustainable product based on recycling, Stena Aluminium contributes to strengthening our customers' and their customers' sustainability. Stena Aluminium also conducts its own sustainability management, where not just obvious aspects such as energy and waste are in focus, but also the social questions that are based on a sustainable company.

75%

ALUMINIUM IS A SUSTAINABLE MATERIAL,
OF ALL PRODUCED ALUMINIUM GLOBALLY
75 PERCENT IS STILL IN USE.

STENA ALUMINIUM AND SOCIETY

Aluminium has been rapidly growing in popularity for several decades. Here you can read more about how it is used, its environmental benefits and some of the various steps in Stena Aluminium's production process.

1 

CONSUMPTION

The use of aluminium is constantly increasing. Aluminium is a sustainable material with many good properties and is used for everything from kitchen utensils and windows to automobiles and airplanes.

2 

RECYCLING

Aluminium can be recycled over and over again. Recycling aluminium results in a saving of 95 percent of the energy that is used in the production of aluminium from bauxite. A large portion of the aluminium collected in Sweden is recycled by us in Älmhult.

3 

RECEIVING INCOMING MATERIALS

The first step is to assess the quality of the received material. We also ensure that the material is free from radioactivity. The raw materials used in production consist of aluminium scrap in the form of factory waste and worn-out aluminium products such as car wheel rims.

4 

PREPARATION

The raw materials are first processed and prepared for optimal handling in the recycling process. This means that they are pressed or briquetted, for example, to optimize smelting. Nonaluminium scrap is sorted out and sent to the appropriate recycling facility, while emulsions of oil and water from the ingots are sent to be destroyed.

5 

QUALITY CONTROL

During the entire process, samples are taken to ensure correct analysis and to guarantee fulfillment of customer requirements. We carry out material analyses in our laboratory. Together with our technical expertise, we increase the benefit to ourselves and our customers by using recycled aluminium.

6 

SMELTING

The processed raw material is melted in rotating, tiltable, smelting furnaces with oxy-fuel burners. Salt (sodium and potassium chlorides) is added to purify and protect the metal against oxidation. The melt is then transferred to the alloying furnaces for finishing. Salt slag is sent for disposal. Flue-gases from the smelting furnaces are led to the flue-gas purification unit.

7 ALLOYING/REFINING

In the alloying furnaces, the molten aluminium is given its specific and final composition for attaining the finished product's properties according to our customers' requirements. This is done by the addition of alloying elements, primarily silicon and copper. The melt is purified using nitrogen and chlorine gases. Contaminants and slag are raked out and recycled in the process. The generated flue gas is led to the flue gas purification unit.

8 CASTING, PACKAGING AND DELIVERY

The finished aluminium product is mainly supplied in the form of ingots, but also in liquid form. All our products are delivered to the customer specific requirements.

9 NEW PRODUCTS

The recycled aluminium is ultimately transformed into new quality products. Over and over again. A discarded wok can become a component in an eco-car or anything else that requires lightweight construction.

10 WASTE HEAT

The waste heat from our production is distributed to Älmhult's district heating network and can heat up to 1,200 homes all year round.

11 SALT SLAG AND SALT

The salt slag, which is waste material, is cooled rapidly using an innovative process to then be able to recycle the aluminium contained in the salt slag from the smelting furnaces. The residual salt slag is processed by an external supplier, where the salt is recycled to be returned to our production again and the remaining aluminium oxide goes on to be used in the cement industry. In this way, none of our salt slag goes to landfill.

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