



HYDRO

Aluminium

– about Hydro
and packaging



*We protect
consumer
products*



Our solutions



Beverage Cans, Grevenbroich, Germany

- Supplying plain and coated material for can bodies, ends and tabs;
- Most-recycled packaging format worldwide;
- Saving transport space and weight, enabling swift cooling.



Compound cartons Grevenbroich, Germany

- World's largest production site for ultra-thin foil;
- Pioneer in starting this application 50 years ago;
- Protecting food and saving energy.



Tea lights Holmestrand, Norway

- Producing aluminium sheet used for tea light cups;
- Not packaging but recycled among packaging returns;
- More than 9 tons of aluminium recycled through collection by school children in Norway.

Life-long aluminium solutions for packaging

Aluminium – HOW?

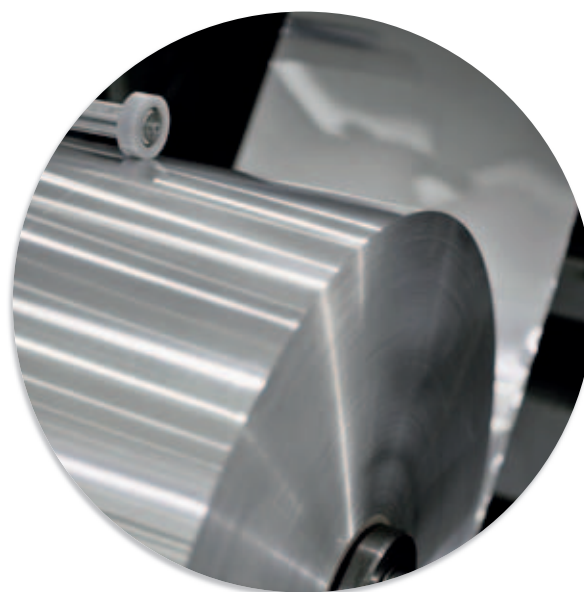
How aluminium protects products

Aluminium packaging has become part of our everyday life: soft drinks, take-away meals, kitchen foil, cosmetics, medicines, aerosols, etc. Via its unique combination of properties, aluminium packaging contributes to the efficient fabrication, storage, distribution, retailing and use of many products.

Before its transformation into packaging applications, the aluminium is in the form of sheets, usually between 0.7 and 1.5 mm thick. In Hydro we can roll aluminium as thin as 0.006 mm, one eighth of a human hair. We achieve the final thickness of our foil by rolling it in a special way: two layers of foil wound into one coil are rolled together or “doubled”. The different thicknesses allow for a variety of applications, from rigid to flexible packaging.

Aluminium is unrivalled as a barrier layer, totally protecting the packed content against light, moisture, oxygen and contamination - even when the aluminium layer is very thin. In a beverage carton, the 0.006 mm layer of aluminium foil represents only 5 percent of the packaging but it gives 80 percent of the protection. The content is preserved from losing nutritional value, vitamins or aroma and packed products can be safely kept on shops’ shelves for many months - even years – without the need for refrigeration.

Light, yet strong, aluminium foil can be wrapped and re-wrapped without losing its barrier integrity. Hydro sponsors the “SAVE FOOD!” campaign, an initiative of the Food and Agriculture Organization of the United Nations (FAO), which helps developing solutions along the food value chain to fight global food loss.



How aluminium can fit any packaging application

Aluminium can be coated to be even stronger and more corrosion-resistant. Hydro has developed processes providing impressive results with major benefits for environmental protection. We have reduced the use of solvents in the coating process and we avoid using toxic heavy metals, such as chromium.

Aluminium is safe for use in contact with all foodstuffs. It is non-toxic and non-hazardous to health and does not harbour or promote bacteria.

Aluminium is temperature resistant, thermally stable and an extremely good conductor of heat. It survives from freezing to the extremes of baking and grilling. Its heat conductivity helps minimize processing, chilling and reheating times.

Less energy, less emissions, less costs

During the last decades, the weight of a can body has been halved. Hydro's efforts to continuously improve the material properties made this reduction possible. This 50 percent weight saving has maintained food durability while achieving reduced CO₂ costs in transportation and decreasing the cost of the can by using the material more efficiently. Because aluminium packaging provides optimum protection, food can be preserved for a long time – even without cooling, thereby reducing energy use. The lightness of aluminium packaging saves weight, reducing transport costs, fuel use and associated greenhouse gas emissions. At the end of the product's life, recycling of aluminium packaging contribute to further savings in terms of CO₂ emissions.

Closing the loop

Together with producers of beverage cans, drinks and food, and other interest groups and industries, Hydro supports initiatives throughout Europe aimed at promoting aluminium packaging and raising public awareness about the importance of recycling (Every Can Counts, Metals Packaging Europe, Green Dot, etc.). It is estimated that at least 55 percent of all used aluminium packaging in Europe is being recycled today, and further growth, due to additional collection activities, is expected. The recycling rate for used aluminium cans is even higher and now stands at 67 percent for the whole of Europe. To increase it even more, make sure that your aluminium packaging is placed in the right bin!



Aluminium – WHAT?

Hydro is a major global supplier of high-quality aluminium for packaging application. Based on almost 90 years of experience, our European rolling mills supply various market segments, utilising aluminium's unique properties to fulfil the specific hygiene, transport and convenience requirements of the industry and the consumer. Our packaging solutions are produced in Norway, Italy and Germany.



● Bauxite

Bauxite is, together with energy, the main raw material for aluminium. This reddish coloured mineral is mostly found in Australia, China, Africa and South America. Bauxite is refined into alumina – a white powder which looks a bit like table salt. In Brazil, Hydro operates one of the world's largest bauxite mines in Paragominas and the world's largest alumina refinery, Alunorte.

● Processing

The performance of our packaging applications is linked to the high quality of the metal they are made from. Our advanced technological expertise allows the production of unwrought aluminium in a wide range of shapes and alloys to fit any use. Aluminium is produced by electrolysis at high amperage. Hydro has reduced its direct emissions of greenhouse gases per tonne of primary aluminium produced by almost 70 percent since 1990.

● Rolling

Our packaging solutions are based on rolled aluminium. Rolling is a flexible process to form aluminium ingots into various shapes, providing virtually unlimited opportunities for adapting product shapes to the customers' needs. Additional treatments to coat and bind aluminium with other materials like paper or plastic further increase the possibilities. With six rolling mills, Hydro is ideally placed to supply the European packaging market.

● Recycling

Recyclability is one of aluminium's greatest benefits. Aluminium can be recycled over and over again without losing its initial properties. Moreover, remelting used metal requires up to 95 percent less energy than for the primary production. Our ambition is to grow faster than the market in recycling and to take a strong position in this part of the value chain. By 2020, we aim to recover 1 million metric tons (mt) of contaminated and post-consumer scrap annually.

Hydro is a global supplier of aluminium with activities throughout the value chain, from bauxite extraction to the production of rolled and extruded aluminium products and building systems. Based in Norway, the company employs 22,000 people in more than 40 countries. Rooted in a century of experience in renewable energy production, technology development and progressive partnerships, Hydro is committed to strengthening the viability of the customers and communities we serve.

Hydro

Drammensveien 260
NO-0240 Oslo
Norway

www.hydro.com

For further information please contact:

Hydro EU Affairs Office
17 rue Archimède
B-1000 Brussels
Tel. +32 2 286 48 80

Production: Artbox 12.2012
Photos: Hydro
Printed with vegetable ink on recycled paper.

© Hydro 2012



HYDRO

Infinite aluminium