

ALUMINIUM PRODUCTS

Industry overview

Aluminium is an attractive material and there is strong competition among the various aluminium producers with regard to product development, new solutions for customers and continuous cost reductions. Aluminium is used in a variety of applications in several industries. The major consumer segments are transportation, building/construction and packaging. The major consuming areas are North America, Western Europe, China and Japan. We expect continued healthy longer-term growth in aluminium consumption in both Western Europe and North America. However, China and other emerging markets are expected to be the main drivers behind a significant growth in global aluminium consumption during the next decade.

INDUSTRY STRUCTURE CHANGING

Over the last decade the downstream aluminium industry has evolved significantly, with consolidations as well as spin-offs from large integrated aluminium companies. All three major global integrated aluminium companies, Alcoa, Rio Tinto Alcan and Hydro, have made or announced significant restructuring of their downstream portfolios. In 2005, Alcan spun off a major part of its rolled products business into the new company Novelis. Aleris acquired Corus' rolling and extrusion business in 2006. In February 2007, Hindalco, India's largest non-ferrous metal company and Novelis entered into an agreement for Hindalco to acquire Novelis. Hydro divested its automotive castings business in March 2007. Alcoa and Orkla signed an agreement to merge Alcoa's soft alloy extrusion business with Sapa's extrusion business in June 2007. This merger created a joint venture with the intention of bringing forward an initial public offering of the combined entity. In February 2008 Sapa signed a letter of intent for the acquisition of the Chinese extrusion company Kam Kiu.

Industry analysts expect that the restructuring activity within the downstream aluminium industry will continue, including a shift in capacity build-up towards the emerging fast growing markets.

DEVELOPMENTS WITHIN THE FLAT ROLLED PRODUCTS INDUSTRY

In general, there has been over-capacity both in the Western European and North American flat rolled products industry. Combined with rising energy costs and high labor costs, this prevents a satisfactory margin for certain product segments. Recently, we have experienced a period of tight markets and long delivery times due to lack of capacity that results in a more balanced market with some over-capacity during weak cycles. However, further restructuring is expected as major metals and mining companies seek to reduce their exposure to downstream operations.

Due to favorable costs and substantial demand, new capacity is being developed in emerging markets, most notably in Asia.

Generally, lower labor costs provide a competitive advantage for semi-fabricated products.

The expected annual growth in global demand for flat rolled products from 2006 to 2010 is somewhat under 5 percent.

DEVELOPMENTS WITHIN THE EXTRUDED PRODUCTS INDUSTRIES

In Europe, the five largest producers of extruded products represent approximately 48 percent of the market. The remainder is very fragmented with about 220 producers representing roughly 47 percent of shipments. Only about 5 percent comes from imports.

Overall there is overcapacity in many of the European markets. However, mainly due to large differentiated product segments, extruders with excellent products and services and competitive costs are able to defend margins that lead to sustainable high returns. After a period with firmer margins in a strong market, the combination of easing of demand growth and cost pressure is expected to lead to further consolidation within the European industry. Hydro has led the way in recent years in helping restructure the extrusion market in Europe. Larger portfolio adjustments among some of the major producers may lead to further restructuring. One of the most significant changes in the market picture was the merger of the soft alloy operations of Sapa and Alcoa discussed above. This has made Sapa the largest supplier in Europe, with market share of approximately 21 percent.

New capacity is being built especially in Eastern Europe, reflecting the higher demand in this part of Europe. Shifting manufacturing from Western Europe to Eastern Europe, for instance within automotive applications, appears to be a stronger trend than the shifts between continents. This intra-European industry restructuring is one of the drivers of the high growth in demand for extrusions in the new EU members.

The North American extrusion industry is more consolidated than the European industry, with the five largest producers representing about 60 percent of the market. Another five medium sized domestic producers cover about 15 percent of the market. About 10 percent of the market is based on imports, mainly from Asia and South America. Margins are under pressure from overcapacity, cyclically weaker demand and – until China recently reduced tax incentives to export extrusions – increasing levels of imports. As a result, a further restructuring is expected within the North American extrusion industry.

China has the largest and fastest growing extrusion demand and industry in Asia. Consumption there is more than three times higher than in Japan, which ranks second in Asia in overall consumption. Globalization has reduced growth rates for extrusion demand from end-use segments like domestic appliances in some western countries, but we see a balanced

Aluminium Products sales volume

Tonnes to external market (1,000 mt)	2007	2006	2005
Rolled Products	1,030	1,003	953
Extrusion	508	526	490
Automotive ¹⁾	117	102	100

1) Excluding divested businesses Casting, Magnesium and Worcester.

picture where new, more advanced, higher-end models replace those that are lost to Asian competitors or where manufacturing is moved to China.

Demand for aluminium extrusions in Europe has been cyclical in nature, but continues to grow faster than the region's overall GDP. The expected annual growth in global demand for extrusions from 2006 to 2010 is above 5 percent.

Operational information

Rolled Products

INTRODUCTION

We are the second largest supplier in the European rolling industry with an estimated 2007 market share of approximately 17 percent in Europe. In 2007, we shipped just above 1 million mt of rolled products, of which approximately 80 percent were sold in Europe. Although our production system is based mainly in Europe, we have leading global positions within high value-added rolled products segments such as lithographic sheet and foil used in liquid packaging.

Aluminium rolled products are semi-finished products used for the manufacture of a broad range of finished goods used in the transportation, construction, packaging, foil and other industries.

Our rolled products business is organized into four business units serving different market segments in which we operate. The following table includes sales volumes to external customers for the years indicated.

Rolled Products sales volume

Tonnes to external market (1,000 mt)	2007	2006	2005
Foil	150	158	156
Lithography	167	166	167
Packaging and building	269	247	228
Automotive, heat-exchanger and general engineering	444	433	402
Total	1,030	1,003	953

Rolled Products locations



The **foil** business unit produces plain and converted foil used by various manufacturers for packaging, including food (yoghurt lids, chocolate wrapping, bottleneck wrapping), tobacco, pharma, aseptic packaging and other applications.

The **lithography** business unit produces offset plates used in the printing industry, products which are characterized by a high surface quality.

The packaging and building business unit produces plain and lacquered strip and sheet for various applications, including beverage cans and food cans, pharmaceutical and specialties packaging and building products (lacquered) such as shutters, ceiling systems, roofing systems, facades and other.

The automotive, heat-exchanger and general engineering business unit provides strips and sheets used in body, component and chassis applications by OEMs and their suppliers, products used in automotive and non-automotive heat-transfer applications and general engineering products used in building (unlacquered) and transportation applications such as truck trailers.

MARKET CHARACTERISTICS, PRODUCTS

The aluminium rolled products industry is characterized by economies of scale with significant capital investment required to achieve and maintain technological capabilities and meet demanding customer qualification standards. The service and efficiency demands of large customers have encouraged consolidation among suppliers of aluminium rolled products.

Our rolled products business provides a wide variety of products for different industries. Our customer base includes customers in the packaging, automotive, transport, building, engineering, electrical and printing industries, including key companies like Tetra Pak (aseptic foil), Kodak, FujiFilm and AGFA (Litho), Ball, Rexam and Crown (can), Behr, Valeo, Denso, Modine and Linde (heat exchanger) and BMW and Daimler (Automotive). Our customers tend to be more global, but the market also has regional characteristics partly because some rolling mills are not equipped to produce all types of aluminium rolled products.

Our foil business is a global player with a strong leadership position in the high value-added liquid packaging market sector. Other important markets we serve include converter and converted foil applications for packaging. Foil repre-

sented about 15 percent of our total rolled products business in 2007.

The lithography market is characterized by a high degree of concentration both in terms of demand and supply driving an increasingly competitive market situation. We are the largest producer in the lithographic products market with sales comprising 16 percent of total rolled products shipments in 2007. Sales to Kodak, Agfa and Fuji represent a large portion of our volume.

Our packaging and building business comprises beverage can as well as lacquered building products, representing about 26 percent of our total rolled products shipments.

Our automotive, heat exchanger and general engineering activities comprise about 43 of our total rolled products business.

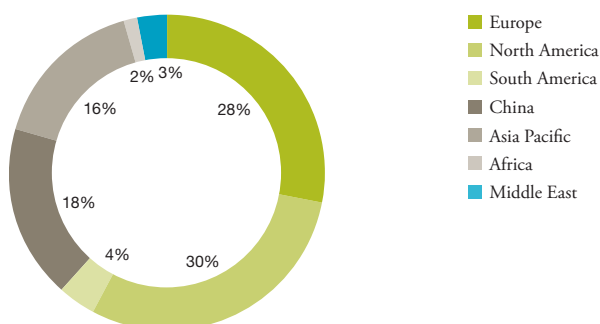
KEY VALUE DRIVERS

We focus on value-creation for our customers in order to maintain our preferred supplier position. We achieve this by a continued emphasis on product quality and cost effectiveness through research, product development and innovative solutions as well as prioritizing our service approach toward our customers. To foster a strong market orientation, our sales function is organized centrally along our business lines and is supported by regional sales offices to enable the optimization of market contact and sales potential while, at the same time, facilitating the production planning and distribution for our entire system.

The rolling industry is capital intensive and capacity utilization is an important factor. However, the balance between capacity utilization and optimizing high margin products is a key success factor for improving profitability. We focus on technological leadership and operational excellence as well as margin management in order to drive the performance of this business. For 2007, given the strong market, we have

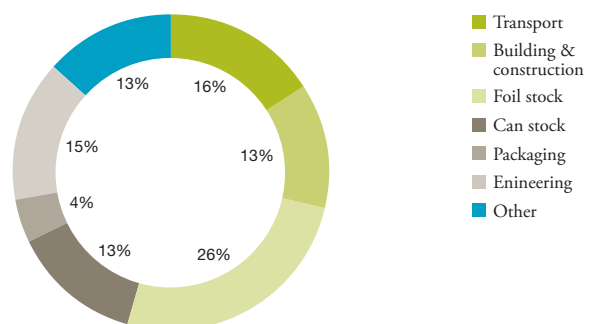
Flat rolled products consumption global 2007

Total market 17,000 mt



Flat rolled products consumption Europe 2007

Total market 3,900 mt





Most of the metal we process is sourced internally based on an arm's-length prices with reference to the LME price.

generally operated at full capacity for all of the plants in our system. We continually focus on reducing operating costs through continuous improvements and sharing best practice across our system.

PRODUCTION

The rolling process consists of heating sheet ingot of 600 millimeters (mm) up to around 500 degrees Celsius and gradually rolling it into thicknesses of between 3 to 13 mm for further processing. Once cool, the thinner metal is further processed in cold rolling mills producing various types of rolled products including foil, lithographic sheet, sheet and strip. An alternative process, continuous casting, converts molten metal directly into coiled strip, typically 4-8 mm thick.

Our rolled products production system is European based, with seven plants in Europe, and one in Malaysia. Our system mainly consists of so-called "wall-to-wall" processing plants including an integrated cast-house combined with both hot and cold rolling mills. Around 10 percent of our production is based on a continuous casting process (Inasa, AISB, Karmøy).

Most of the metal we process is sourced internally based on arm's length prices with reference to the LME price. External supplies of rolling ingot amounted to approximately 12 percent of our total requirements in 2007. In addition, we recycle process scrap from customers and scrap collected from the market, together with our own process scrap.

The table below includes the ownership interest and sales volumes per main site in our rolled products production system for 2007, 2006 and 2005.

Grevenbroich/Alunorf (Germany)

Grevenbroich is the center of our foil and lithographic sheet operations and also produces substantial volumes of strip products. The plant is supplied with products for cold-rolling from the near-by AluNorf hot rolling mill. Founded in 1922, Grevenbroich had 1,800 employees at the end of 2007. The plant produces a wide-range of products for the automotive strip, building products, can, foil, heat exchanger, food/speciality products and lithographic strip markets.

Aluminium Norf GmbH (AluNorf) was founded in 1965 and has continuously been modernized and expanded. It is currently the world's largest hot rolling mill. AluNorf is located in Neuss, Germany and had 2,100 employees at the end of 2007. The company is organized as a joint venture between Hydro and Novelis, each holding a 50 percent ownership interest. Alunorf is partly supplied with sheet ingot from our primary metal plant located nearby in Neuss.

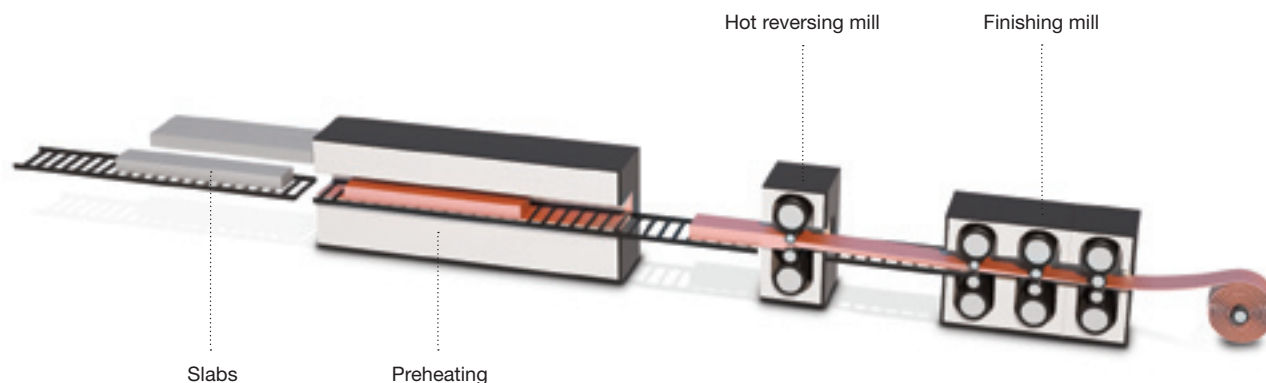
Hamburg (Germany)

Founded in 1972, our plant in Hamburg employed 650 people at the end of 2007. The plant consists of an integrated cast-house and rolling mill producing products mainly for general engineering applications as well as for automotive and heat exchanger applications. A major upgrade of both the hot and cold rolling mills and the logistic system of the plant took place in 2000-2001.

Rolled Products production sites

Production volume (1,000 mt)	Location	2007	2006	2005
AluNorf/Grevenbroich (50/100% share)	Germany	594	575	540
Hamburg	Germany	152	150	142
Slim	Italy	86	80	78
Inasa	Spain	24	25	25
AISB (81% share)	Malaysia	17	15	22
Karmøy	Norway	70	70	63
Holmestrand	Norway	89	85	83
Total, excluding internal sales		1,030	1,003	953

The rolling process



The slabs are preheated before entering the hot reversing mill. The sheets are rolled to the desired thickness in the finishing mill.

Slim (Italy)

Slim, located near Rome, was founded in 1964 and employed 480 people at the end of 2007. In 2005-2006 a new state-of-the-art cold rolling mill was installed and a major upgrade of the hot rolling mill was undertaken. The plant has an integrated casthouse. A new cold rolling mill was installed in 2001. The plant produces products used for a variety of applications, including general engineering, heat exchangers and packaging.

Holmestrand (Norway)

Our Holmestrand rolling mill is located on the inner Oslo fjord and commenced operations in 1917. At the end of 2007 the plant employed around 400 people. Holmestrand also has a laquering plant and an integrated casthouse. The plant produces building, heat-exchanger, general engineering and special products.

Inasa (Spain)

Inasa is one of the smaller operations in our system, founded in 1957 with a workforce of 250 employees at the end of 2007. Production is partly based on continuous casting, and partly on reroll mainly supplied by Alunorf. Inasa produces several applications, including foil, heat exchangers and packaging.

AISB (Malaysia)

AISB is located in Johor, Malaysia. The plant was founded in 1985 and employed 250 people at the end of 2007. The plant consists of a continuous casting and cold rolling mill. AISB produces several applications, including foil, general engineering and packaging mainly dedicated to the regional market.

Karmøy (Norway)

Our rolling operation in Karmøy is located together with our primary metal plant. Operations commenced in 1968 and the plant employed 220 people at the end of 2007. The plant consists of a continuous casting operation producing general engineering as well as internal paintstock for our operations in Holmestrand.

Extrusion

INTRODUCTION

Our extrusion business consists of general extrusion activities organized into two geographic business sectors – extrusion Eurasia and extrusion Americas – and our building systems activities organized as a separate business sector. We have major operations throughout Europe and North and South America in addition to minor operations in Asia and Africa. In Europe, we are among the leading players with an estimated market

Extrusion sales volume

Tonnes to external market (1,000 mt)	2007	2006	2005
Extrusion Eurasia	308	301	270
Building Systems	82	80	75
Extrusion Americas	118	145	145
Total	508	526	490

Extrusion locations



share at 16 percent for 2007. We are one of the larger operators in North America with an estimated market share of around 7 percent. We have a solid foothold in South America with plants in Brazil and Argentina that provide a basis for future development in the region.

Hydro supplies custom-made extrusions of soft alloy aluminium to a broad range of market segments. We also operate a range of value-added activities such as surface treatment, anodizing, liquid painting and powder coating, general fabrication and contract manufacturing activities. Our building systems operations design and fabricate components and finished products based on extrusions from our system for a wide range of building applications and solutions. Surface treatment and fabrication activities represent an increasingly important part of our extrusion-related activities and are key elements in the further strategic and financial development in our markets.

We are a major global supplier of building systems based on aluminium extrusions. We have a wide product range and are active in all parts of the industry, offering everything from single home residential solutions to large international tender projects.

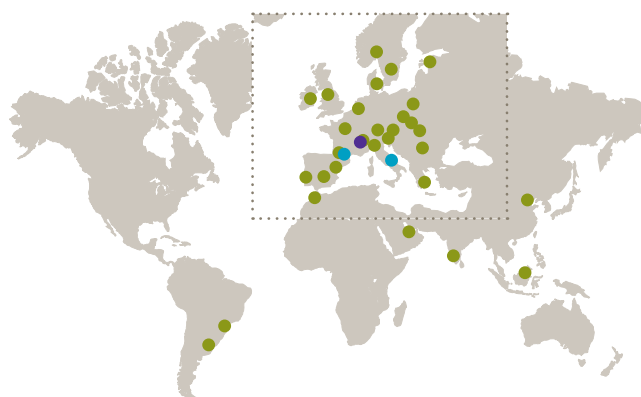
MARKET CHARACTERISTICS, PRODUCTS

General extrusions

The use of aluminium extrusions is increasing rapidly throughout the world. As a construction material, extrusions provide the opportunity to think along entirely new lines due to significant advantages in terms of weight, strength and durability compared to competing materials, as well as superior design, production and fabrication characteristics. Aluminium extrusions are used in practically all businesses, products, and environments, including transportation (cars, buses, trucks, trains, aircraft, etc.) electronics (computers, printers, TV's, etc.) appliances (refrigerators, freezers, ovens, dishwashers, etc.), building (windows, doors, facades, etc.) and domestic and office equipment, furniture and fittings.

The European extrusion industry provides European customers within all end use market sectors with aluminium profiles of generally high quality at very competitive prices. Competition among producers has increased significantly over time, and markets have evolved from being regional within a country to areas covering several countries. This has limited the growth of imports from outside of Europe although there is a small increase in low cost imports.

Building Systems locations



- Systems company / sales office
- Dedicated extrusion plant
- Sector head office

Extrusion Eurasia

Our European extruders serve the general soft alloy extrusion market with a wide range of shapes and alloys. We sell quality extrusion profiles, delivered according to specifications, on time to customer in most industries. We do not focus on standard profiles because of the strong competition and low margins within that market segment. Our local extruders work closely together with their customers, and tailor make aluminium profiles and services to each customer's need. We do not offer finished goods to the market, but create value by enabling our customers to develop excellent products, and to manufacture and ship their products efficiently to their customers.

Extrusion Americas

Extrusion Americas supplies custom extrusions and extrusion-based components in the US, Brazil and Argentina. In the US, we are a major supplier of drawn tubing as well. Approximately 80 percent of our total Extrusion Americas sales volume for 2007 was delivered to the US market.

In the US we serve highly diverse markets, and provide a wide range of end use products. Our US customer base ranges from global manufacturing enterprises to local entrepreneurs. We focus on serving those customers and segments where close integration and special service create value for the customers, and have particular competence in complex fabrication and assembly services.

In Brazil, we have a strong position in the construction market, offering façade systems for major projects as well as door and window systems for the residential market. We also have a growing industrial market, fabricating extrusion based enclosures for the telecom market, and supplying bus components, among others. Our position in Argentina is similar, with a growing industrial focus supplying several manufactures.

While operating in three distinctly different markets, our approach is the same – a focus on providing value-added solutions through close collaboration with customers and prospects. However, the market challenges are distinctly different in these markets. The US market is suffering through a major downturn in the extrusion market. As a result, our focus has been on downsizing, restructuring and driving new business. In South America, the challenge has been one of coping with strong market growth, and enhancing service in the face of rapid growth.

Building systems

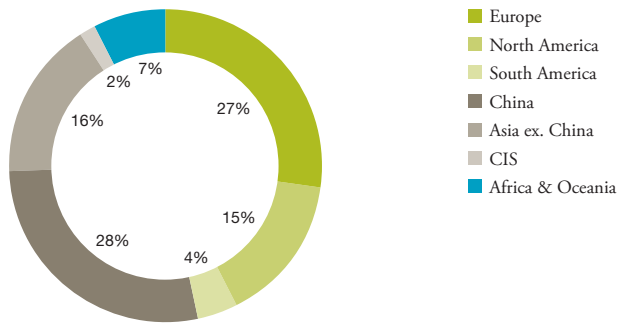
Our building systems operations design, supply and deliver solutions for products such as aluminium windows, doors, facades, and other building applications. Each of our three brands, Technal™, Wicona™ and Domal™, represent a distinct system enabling our customers to tailor-make their offerings to the market meeting a wide range of demand from single window replacements to the erection of façades on major structures such as new airports or high rise buildings. Our technologies enable architects and builders to develop visibly attractive design solutions, while providing a variety of functional characteristics in terms of thermal requirements, sound- and wind insulation, earthquake safety, fire resistance and theft resistance.

Extrusion sales volume per market segment (external sales)

Tonnes to external market (1,000 mt)	Extrusion Eurasia	Extrusion Americas	Building Systems
Domestic & office equipment	28	17	
Building & construction	138	42	82
General engineering	36	10	
Electrical	26	11	
Transport	50	25	
Other	30	13	
Total	308	118	82

Extrusion consumption global

Total market 10,800 mt



A fragmented European market favoring solutions linked to regional building habits and local culture underlies our network of brands and geographic locations that enable us to compete by differentiating our product range while providing a strong level of service. We operate out of 75 locations in Europe including sales, technical support, service and distribution operations.

We are increasingly expanding our building system activities outside Europe. In 2007, sales of building systems outside Europe reached close to 10 percent including growth in India and the Middle East, some success in China and a new start-up in South America. We believe that our ability to succeed in the demanding European market, influenced by stringent government regulations, represents an important competitive strength that we can benefit from on a global basis. We operate out of three locations in Asia and two in the Americas.

Energy cost, and the dramatically increasing focus on CO₂ emissions are expected to drive demand for new, more sustainable building solutions. Some 30-40 percent of all energy consumption and CO₂ emissions globally are linked to buildings and occupancy comfort. Substantial efforts are underway within the building industry to find solutions for low energy, self-supporting, and energy generating buildings. We are playing a leading role in activities and initiatives sponsored by European Aluminium Association's and the UN's Initiative for Sustainable Building and Construction. To stay in the forefront we are also expanding our development centres based in Milano, Toulouse, Ulm and Bangalore and establishing a separate project center in Barcelona for solar energy related solutions.

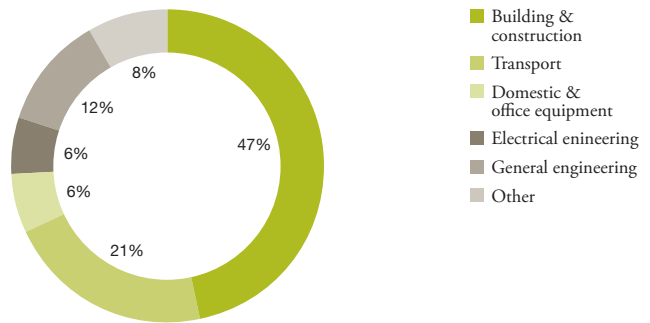
PRODUCTION

Extrusion production process

The extrusion process starts by preheating extrusion ingots which range between 150 and 300 mm in diameter and up to 7 meters in length. Extrusion involves pressing the preheated

Extrusion consumption Europe and North America

Total market 4,600 mt



metal (450-500 degrees centigrade) under high pressure (1,600 -6,500 tons) through a die which forms the metal into the desired shape. The process speed depends on the alloy and the complexity of die and can take from 5-80 meters per minute. The extrusion is then cooled and stretched in order to eliminate stress and straighten the metal.

Dies are made of high temperature resistant steel and come in thousands of shapes, sizes and levels of complexity. They are relatively low cost making the extrusion process suitable for the production of trials and prototypes.

Surface treatments such as anodizing, powder coating, lacquering and various mechanical treatments, such as grinding and polishing, are employed to reduce corrosion and mechanical wear or provide decorative appearance.

To make fitting and assembly more efficient, extrusions often go through some form of fabrication, including machining (cutting, drilling, tapping, etc.), joining (welding, gluing, bolting, riveting) and other types of value-added activities.



Our building systems operations design, supply and deliver solutions for products such as aluminium windows, doors, facades, and other building applications.

Extrusion plants and related operations

In 2007, our total production of extruded products from our extrusion sectors in Europe and the Americas including extrusion activities in Building Systems was approximately 540,000 mt.

A key to the success of our European extrusion business is our network of smaller, relatively independently operated extrusion plants where decentralized organizations are intended to ensure good market alignment and close contact with customers and where plants actively use internal benchmarking and apply best practices to ensure continuous improvements in the flexibility and efficiency of operations.

Many of the plants in our system are characterized by modern equipment and facilities and advanced technology enabling high efficiency, reliable deliveries and consistent quality. We possess considerable experience and skill in fabrication and surface treatment offering an important resource to our customers and contributing to the production of finished components and the supply of system solutions.

With our special skills in material and production technology we function as a development partner assisting with the optimization of an applications characteristics and design as well as with production start-up.

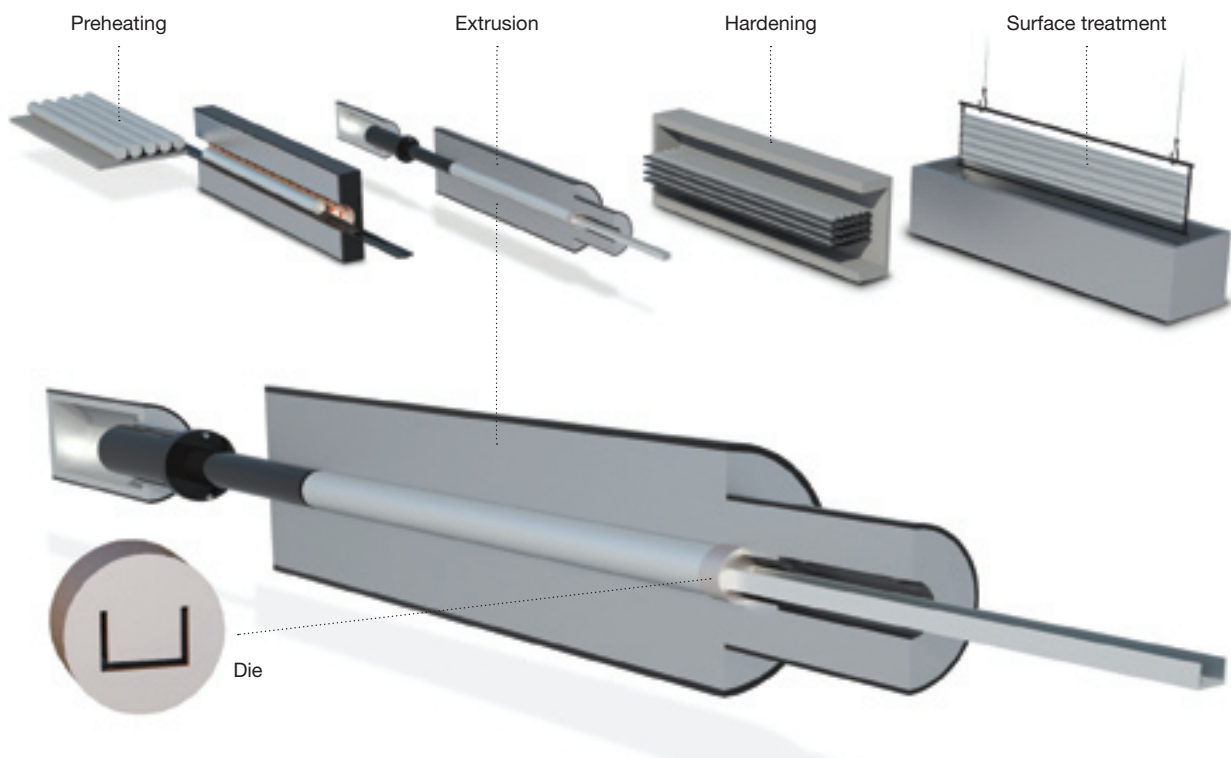
Extrusion Eurasia

Our Extrusion Eurasia business sector is headquartered in Lausanne, Switzerland and operates out of 33 locations in Europe including sales offices throughout the continent. We have extrusion plants in 11 countries including in Austria, Belgium, Denmark, France (3), Germany (3), Italy, Norway (3), Portugal, Poland, Spain and the UK (2). In addition to the extrusion plants we have 10 smaller die production and fabrication sites in Europe. At the end of 2007 we employed a around 3,800 people in our extrusion Eurasia operations.

Extrusion Americas

Our Extrusion Americas business sector operates 12 extrusion/fabrication plants in the Americas and is headquartered in Baltimore, US. Our production facilities in Americas are located mainly in the midwest with four plants, in the south east with two plants and one plant in the western part of the country. We employed approximately 1,900 people in our Extrusion North Americas business at the end of 2007 following significant reductions in manning as part of our efforts to reduce costs and improve the performance of this business. We also operate plants in Argentina and Brazil employing about 300 people at the end of 2007.

The extrusion process

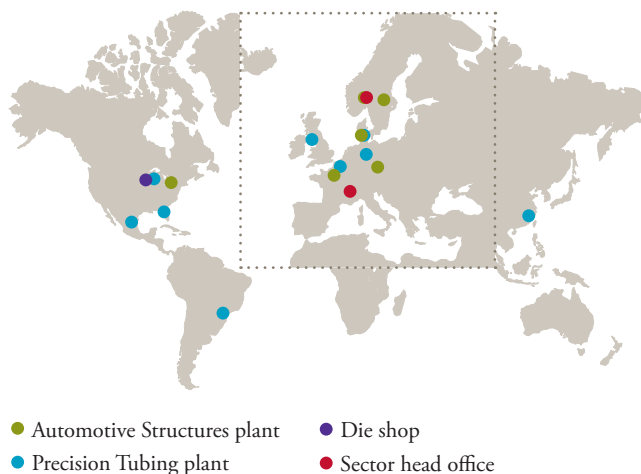


The ingots are preheated, extruded through a die and hardened before surface treatment.

Automotive

Hydro's automotive business is comprised of our precision tubing and automotive structures business sectors. During the first quarter of 2007, we completed the divestment of our automotive castings business and finalized the closure of the

Automotive locations



magnesium plant in Becancour, Canada. An agreement for the sale of our magnesium remelters in Germany and China was concluded in July 2007 and minor operations were disposed of during the remainder of the year. A decision was taken to terminate efforts to divest our automotive structures business and initiatives are underway to turn this business around.

Automotive Structures is one of the leading suppliers of extrusion-based crash management applications such as bumper beams, crash boxes and structural components to the automotive original equipment manufacturers (OEM) in Europe and North America. Hydro is a global leader of aluminium crash management systems, and has built up a world-class technology and customer base in aluminium automotive structures.

Precision Tubing makes products used primarily within radiators, evaporators, fuel coolers and liquid lines. We have a sig-

nificant market presence in Europe, North and South America as well as Asia.

MARKET CHARACTERISTICS, PRODUCTS

Automotive Structures

The market for supplying structural automotive components is highly fragmented. We are among the global market leaders with a market share of about 6 percent. OEMs are increasingly outsourcing engineering and assembly to outside suppliers resulting in a shift of costs, responsibilities and R&D expenditures from OEMs to the supplier industry. Suppliers are increasingly evaluated not only on the basis of near-term price and long-term cost reduction programs, but also for their stability, reliability, product design knowledge and production engineering capabilities.

Aluminium offers a high potential for weight savings combined with superior safety characteristics due to very high energy absorption levels. Furthermore, aluminium is easily recycled and helps reduce carbon dioxide emissions due to weight reductions. Increased pressure on fuel economy and emissions reductions, including potential new environmental legislation, is therefore expected to increase the use of aluminium in automotive structural systems and solutions.

Our automotive structures operations supply the leading global OEMs, such as BMW, VW, Ford, Daimler, Renault, PSA and GM, and the Japanese car manufacturers Toyota and Honda. Contracts are typically awarded three year in advance of the start of production with a duration that usually lasts for the entire life cycle of the relevant car model (5 to 6 years or longer). Costs to the manufacturers associated with changing suppliers are normally prohibitive.

Our automotive structures operations are divided into three main product groups:

Crash management systems include front and rear bumper beams, crash boxes and connection parts for small and medium size passenger cars. Manufacturers are increasingly demanding more sophisticated crash management solutions, in particular for the front of the car with features such as welded crash box systems and pedestrian protection, rather than traditional constructions such as simple bumper beams.

Automotive sales volumes ¹⁾

Tonnes to external market (1,000 mt)	2007	2006	2005
Precision Tubing	73	66	59
Structures	44	36	41
Total	117	102	100

1) Automotive sale is excluding divested business Magnesium, Castings and Worcester.

Rear bumpers solutions are less complex and cost is the important driver.

Structural components include sub-frame parts, complete sub-frames, roof headers, longitudinal reinforcements and wind-shield frames. There are a large number of structural steel components which could be designed in aluminium, creating attractive growth opportunities within this product area. Reducing vehicle weight is expected to be a key factor in meeting new legislation for compulsory reductions in auto emissions within the Euro zone.

Roll-over protection systems for convertibles is a fast growing segment within the automotive market. We have been developing and manufacturing roll-over protection systems since the early 1990's and aim to take a leading position within the segment in Europe.

Precision tubing

The automotive market represents about 90 percent of the precision tubing business. The most important customer base is dominated by a limited number of very large players with heavily industrialised processes. The non-automotive segment is characterised by large numbers of manufacturers in all regions of the globe with very little standardisation in their products.

Our Precision Tubing business sector manufactures products used in heat transfer applications, both for automotive and non-automotive market segments, and tube lines for carrying liquids or gases. We offer a complete package of products on a global basis.

Heat transfer applications depending on our products include air-conditioning and cooling systems, radiators, heat pumps, charge air coolers, transmission oil coolers and evaporators. We have a strong presence in this market supplying global automotive customers such as VW, Denso, BMW, Delphi, TI, Valeo, Hutchinson, Visteon, Parker and Behr. We also serve customers worldwide in promising non-automotive market segments.

Focus on the environment has accelerated development and decision making regarding refrigerants. CO₂ (R744) will be introduced in the European automotive market and on a global basis for other heat transfer applications. Hydro is a leader in developing aluminium solutions for CO₂ systems.



Our automotive structures operations supply the leading global original equipment manufacturers, such as BMW. Aluminium offers high potential for weight savings.

PRODUCTION

With a diversified production network, our automotive structures business serves customers locally with a global product offering. We believe this gives us a competitive advantage, in particular in the automotive sector, allowing us to take advantage of market opportunities which vary significantly by region. Our five automotive structures manufacturing plants in Europe and one in the US are designed to meet the needs of a high quality and diversified OEMs customer base. Our production system includes plants in Norway, Sweden, Denmark, Germany, France and the US. Each of our plants specializes in specific products and processes, and we control the entire manufacturing process from alloying and casting billets to extrusion, forming, machining, welding and assembly.

We have four precision tubing manufacturing operations in Europe, located in Denmark, Belgium, the UK and Germany, and three plants in the US: one in Florida and two in Michigan. In addition, we have one precision tubing operation in Brazil and, in August 2006, we commenced production in our new precision tubing plant in Reynosa in northern Mexico. We also have a precision tubing plant in China that started production in May 2005. During 2007, we continued the rationalization program started in 2006 to improve the operational and financial performance of our precision tubing business, in particular our North American operations, through cost-reduction programs at the plant level. In addition, a plan for ramp-up of the recently installed production capacity in Mexico is underway.