



# ALCOA SAMARA



## About Alcoa

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**ALCOA** IS THE WORLD LEADER IN THE PRODUCTION AND MANAGEMENT OF PRIMARY ALUMINUM, FABRICATED ALUMINUM AND ALUMINA COMBINED.

THE COMPANY HAS 63,000 EMPLOYEES IN 31 COUNTRIES.

**ALCOA REVENUE** IN 2008: **\$26.9 BILLION.**

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Alcoa's Russian fabricating facilities **Alcoa SMZ** and **Alcoa Metallurg Rus** produce a wide range of flat-rolled, extruded and forged products.

The total investments of Alcoa in Russia from 2005 to - 2008 exceeded **\$750 million**. The investments were aimed at aligning the Russian facilities with the highest international production requirements, technological developments and the implementation of Alcoa EHS standards.

**Alcoa** serves the **aerospace, automotive, packaging, building and construction, commercial transportation and industrial markets**, bringing design, engineering, production and other capabilities of Alcoa's businesses to customers.

## Plant history

The prospects of aluminum and its alloys in all industries after the war period determined the necessity to increase the country's capacity to produce aluminum rolled products. In 1950, the Russian government decided to design and build a new aluminum plant in Kuibyshev (Soviet name of Samara). The plant was designed to be the biggest in Europe. The construction of the plant then ensured the rapid development of other industries equally important for the country – aerospace engineering, automotive, shipbuilding and nuclear energy.

Construction work started in 1951. Equipment installation and commissioning commenced in 1955.

The Cast House was the first of the major operation centers at SMZ to be put into operation. The Cast House was equipped with the latest and most technically advanced equipment available at that time including DC (direct chilled) casting units, electric heated homogenization pits with air circulation for automatic uniform temperature control, and continuous ingot machining production lines. The first ingot was cast November 4, 1955 and full scale production started in December 1955.

**The Rod & profile** processing shop was the first one to be constructed. It was equipped with unique horizontal hydraulic presses, vertical quenching furnaces, powerful stretchers to unbend extruded profiles and panels, disk saws for their cutting and other brand new equipment.

On 2 February, 1958 the first billet was extruded on a 3500-ton press in the tubing shop. In March of the same year the first tube was rolled. In 1969, the drill pipe and welded tube shop was commissioned. The first lot for exploration drilling, deep exploration and well operations (oil, gas, and geological survey) was produced in April, 1971. And in April, 1978 the first lot for coated can stock was produced in the same shop.

Construction of the biggest shop of the plant – **the rolling shop** – was started in 1954. The Metallurgical Engineering Research Institute under the guidance of A.I.Tselikov, member of the Academy of Sciences, was the first in the industry to develop the process of single time preheat semi continuous rolling of slab. It, designed the 2800 hot rolling mill which constituted two reversing stands and five continuous rolling stands. The "Tandem-2800" two-stand mill was designed and constructed for the cold



rolling of the sheets. The special taper mill for tapered sheet rolling, the first in the branch conveyor-type sheet quenching furnaces was installed as well as sheet cutting and dressing production lines and other advanced sheet processing equipment.

The first plate was hot rolled in December, 1958.

The Forging-and Dies shop was established in November 1959. In April 1960, a Forging and Extrusions Business Unit was established, and in May 1960 a Forging-and-Extrusions Work Shop was launched. It was equipped with high-capacity vertical and horizontal presses and other unique equipment (created for the first time in the world) for the manufacturing of large closed-die forgings; rods; tubes; profiles and panels; used in the military and aerospace complexes of the country, as well as shipbuilding and the automotive industry. There were widely used semi-products and finished goods manufactured at the plant for creation of the entire family of "Vostok" and "Soyuz" spacecrafts; the transportation system "Energia"; the orbital "Progress" spaceship; as well as orbital space stations "Salyut" and "Mir".

At the same time the plant opened auxiliary shops: in 1955 – railway and construction; in 1958 – transportation, and in 1960 - maintenance and new equipment.

A living area for workers of the plant was constructed parallel to the production shops. In 1953, the plant built 12,000 square meters of housing. The plant then built a hospital, kindergartens and a stadium.

**On July 1, 1960** the plant was commissioned. This date is the plant's official birthday.

## ALCOA SMZ (Samara)

**ALCOA SMZ's share of the Russian mill products market is about 40%.**

- 1,380,000 square meters of land
- 680,000 square meters of building space

**4 business units:**

- Casthouse
- Extrusions
  - the largest extrusion press in Russia
- Mill products
- Forgings
  - the largest forging press in Russia

**ALCOA SMZ produces a wide range of flat-rolled, extruded and forged products:**

- Coils, including beverage can stock (body, end and tab), food can stock, lacquered strip,
- Profiles, panels, pipes, forgings, including large-scale ones

The plant's production and quality control systems have been ISO 9001/9002 certified and its Ecological Management System has been ISO 14001:1996 certified.

## ALCOA SMZ today

Alcoa SMZ is Russia's largest producer of fabricated aluminum. It manufactures a wide range of flat rolled products, extrusions, and forgings of all aluminum alloys in compliance with international and Russian standards.

The plant traditionally serves customers in many markets, including aerospace, shipbuilding, oil and gas, packaging, and transportation. Alcoa SMZ is the sole Russian producer of can sheet for beverage cans production.

After Alcoa acquired the Samara Metallurgical plant (renamed to Alcoa SMZ in July, 2009) in February, 2005 a new complex modernization program was started in all of the plant's business units: Casthouse, Flat-rolled products and Forgings & Extrusions. From 2005 to - 2008, Alcoa invested over \$350 million in the upgrade of the full technological capacity of Alcoa SMZ.

**Among the biggest investment projects were:**

- World's largest hydraulic presses: a vertical press with the capacity of 75,000 tons and a horizontal press with the capacity of 20,000 tons;
- A casting machine for can sheet production;
- A five-stand hot-rolling mill;
- Vertical quenching furnaces and ageing ovens;
- A stretcher for extruded products.

**The following new equipment was commissioned:**

- Two casting machines
- A can stock slitter
- A pusher furnace for ingot heating and homogenizing
- A horizontal quenching furnace
- A coating line for the production of coated aluminum sheet (in 2009)

These investments enabled the plant to reduce production costs, increase the quality and competitiveness of its products, and insure a safe and comfortable work place for its employees.



## Casthouse

### PRODUCT RANGE:

billets and sheet ingots of various sizes:

- **solid billets**  
diameter - min.-120mm, max-1100mm, length up to 6000mm
- **hollow billets**  
diameter - min.-145mm, max-1100mm, length up to 6000mm
- **sheet ingots**  
cross section - 300-600x1150-2150mm, length up to 6000mm



## Mill Products

### PRODUCT RANGE:

Sheets, coils, painted coils, coated coils (including body can stock, end and tab stock), embossed and tread sheets and coils.

Unique equipment running at Alcoa SMZ Mill Products:

- Russia's sole five stand hot rolling mill;
- Russia's unique continuous heat treatment line allowing annealing as well as the quenching of strips up to 2000mm wide.



## Extrusions

### PRODUCT RANGE:

- Small- and large-sized extruded products (rods, profiles, panels) and tubes of different sizes.

One of the two biggest in the world, its 20,000 ton horizontal press is considered to be unique extrusions equipment. Alcoa gave new life to this extraordinary equipment. Hydraulic and electrical control systems were upgraded. This presse allows Alcoa SMZ to produce specific products, namely: rods diameters up to 600 mm, tube diameters from 300 up to 700 mm, panels with widths up to 2 meters, and helicopter blades.



## Forging

### PRODUCT RANGE:

Large aluminum closed-die forgings (mass up to 3.5t.) and open-die forgings (mass up to 14.5t.), used in aviation, aerospace, electro-technical and other industries.

Unique for the entire aluminum industry, the largest Vertical Hydraulic Press in the world, with maximum tonnage of 75,000t runs in Alcoa the SMZ Forging.



## Alcoa Business System

One of Alcoa's major principles is continuous improvement in all we do. The Alcoa Business System, or ABS, is an integrated set of principles and tools used to manage Alcoa businesses.

Alcoa SMZ opened Alcoa Russia's Center of Excellence to train employees in the Alcoa Business System (ABS). The Center also provides consultative services to other organizations on ABS methodology.

**Please address your questions on the Center to:**

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## Our Communities

Alcoa has always demonstrated a high-level of commitment in achieving its business and community success by supporting the health and environment of Alcoa employees and Alcoa communities worldwide.

Alcoa's community efforts in the Samara Region focus on the development of volunteer programs involving Alcoa employees and on strengthening meaningful partnerships with the community.

From 2005 through 2008, Alcoa SMZ has invested into the development of Kirovskiy district of the city of Samara by carrying out community activities aimed at beautification and landscaping of the district area as well as supporting the middle school students and children with disabilities.

The Miloserdije I Zdorovje (Mercy and Health) Charitable Foundation was established by Alcoa SMZ which now covers about 7,000 of the plant's veterans. The Foundation supports veterans who are in need.

A trade union organization works at Alcoa SMZ. A collective bargaining agreement of the Samara Metallurgical Plant is highly appreciated by the Samara Region Federation of Trade Unions as one of the best collective bargain agreements within industrial enterprises of the Samara Region.

From 2005 through 2008, Alcoa invested over \$1.2 million in to the development of the Samara community.

**The following long-term community programs were implemented by Alcoa Foundation and Samara Metallurgical Plant in the Samara Region:**

- Alcoa Foundation Technical Education Support Program partnered with the Samara State Aerospace University (SGAU) provides Alcoa Foundation scholarships and development stipends for students and young faculty, as well as donations of equipment to modernize lecture rooms and laboratories.
- Alcoa Foundation Conservation and Sustainability Program "We are in charge of the future" promotes education on conservation for middle school students of the Kirovskiy district of the city of Samara.
- Alcoa Foundation support the Heart-to-Heart International Children's Medical Alliance to provide open-heart surgery and cardiac help to small children.
- Samara local community programs: Alcoa English Language Summer Camps; support of the to Samara Regional Special Training Center for children with disabilities; beautification of the Metallurg sub-district area; support to veterans, etc.





## Our values

AT WE LIVE OUR VALUES AND MEASURE OUR SUCCESS BY THE SUCCESS OF OUR CUSTOMERS, SHAREHOLDERS, COMMUNITIES AND PEOPLE.

### INTEGRITY

Alcoa's foundation is our integrity. We are open, honest and trustworthy in dealing with customers, suppliers, coworkers, shareholders and the communities where we have an impact.

### ENVIRONMENT, HEALTH AND SAFETY

We work safely in a manner that protects and promotes the health and well-being of the individual and the environment.

### CUSTOMER

We support our customers' success by creating exceptional value through innovative product and service solutions.

### EXCELLENCE

We relentlessly pursue excellence in everything we do, every day.

### PEOPLE

We work in an inclusive environment that embraces change, new ideas, respect for the individual and equal opportunity to succeed.

### PROFITABILITY

We earn sustainable financial results that enable profitable growth and superior shareholder value.

### ACCOUNTABILITY

We are accountable – individually and in teams – for our behaviors, actions and results.



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