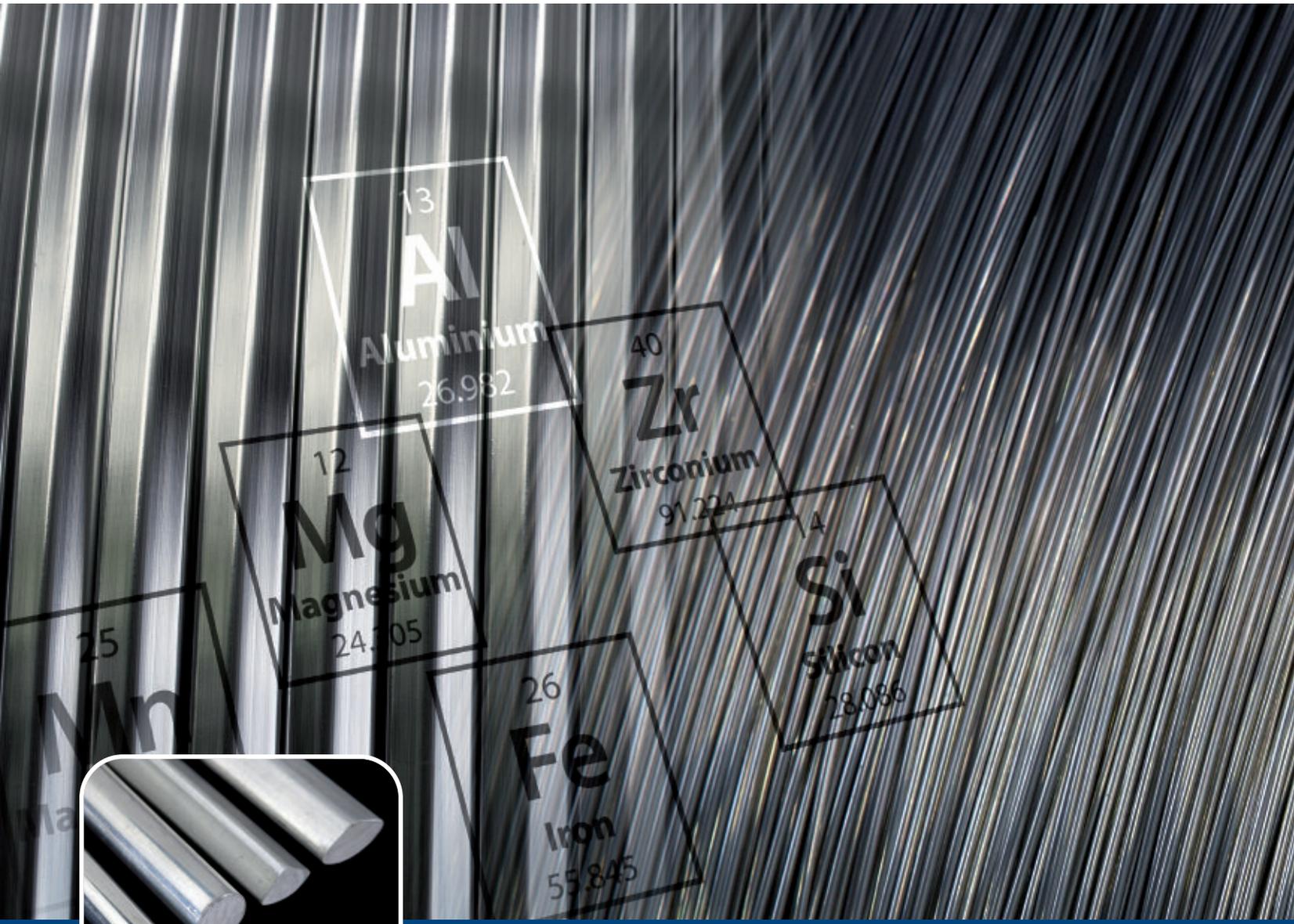


LAMIFIL



Aluminium wires

History

2



1929

Lamifil is founded as “Société Franco-Belge des Laminoirs et Tréfileries d’Anvers s.a.” with production sites in Hemiksem in Belgium and Chauny in France. In the 20th century Lamifil will become an internationally known manufacturer of copper rod and a wide range of copper wires for various applications.

1959

Lamifil expands its business activities. Aluminium wire rod, drawn wire and conductors become a core activity. The advantages of aluminium over copper for use in electrical grids are the higher conductivity to weight ratio and the lower overall cost.

1997

Koramic Investment Group, an industrial investor, takes control of Lamitref Industries, the former holding company of Lamifil. Today Koramic Investment Group is the majority shareholder of Lamifil and is giving the company the freedom to further expand its business activities.

1998

The production site in Hemiksem is given a new name: Lamitref becomes Lamifil. Production of copper wire moves to a sister company. A continuous casting system is commissioned and production of copper alloys is started.

2001

Lamifil redefines its mission and focuses on two core activities. One is the production of aluminium and aluminium alloy wires and conductors for electrical or mechanical applications. The other is the production of copper and copper alloy wires for railway electrification and special applications.

2005

A continuous investment programme is initiated to allow Lamifil to continue its growth. Among the investments are an additional vertical upcaster for the production of copper alloys, increased annealing capacity and stranding machines for both aluminium and copper wires, as well as a continuous rotary extrusion machine for the production of solid aluminium conductors used in power cables.



Today Lamifil's core business is the production of wire rod, wire and conductors in aluminium, aluminium alloys, copper and copper alloys.

Lamifil has an annual production capacity of 44 000 tonnes of aluminium and 5 000 tonnes of copper.

Lamifil designs, manufactures and supplies quality products for a wide range of global markets. Aluminium and copper is transformed into a wide variety of semi-finished or finished products:

- Solid and stranded aluminium conductors used as core for power cables
- Overhead conductors ranging from conventional designs up to Ultra High Conductivity AAAC or High Temperature Low Sag ACCC™ and Gap conductors as well as other advanced designs for transmission and distribution of electricity
- Aluminium alloy wires for mechanical applications such as fencings, nails, needles, rivets and clips and staples for the food industry
- Aluminium wire rod used for steel deoxidation
- Aluminium alloy wires for optical ground and phase wire
- Copper alloy wire to produce special cables for automotive, electronics and aviation
- Copper and copper alloy wires and conductors for railway electrification.

Lamifil is located between Brussels, the capital of the European Union, and Antwerp, one of the largest ports in the world and an important logistical centre. This central location allows Lamifil to easily ship products to customers all over Europe and around the world.

The powerful combination of innovative technology, abundant experience and advanced know-how made Lamifil one of Europe's largest, independent producers in this field.



Semi-finished products

4



As a fully integrated and independent producer, Lamifil acquired in-depth metal knowledge, which has resulted in several technological developments and improved products for its customers.



Wire rod

Lamifil operates a Properzi continuous casting & rolling line equipped with twin melting and holding furnaces and a state of the art Alpur degassing unit. Wire rod with diameters ranging from 9.5 to 23 mm diameter in coils of up to 2.2 ton can be manufactured, according to all international standards, with a capacity of up to 44.000 ton per year.



Wire

Drawing

Lamifil produces aluminium and aluminium alloy wires between 1 and 20 mm diameter according to different specifications or standards. Different wire drawing lines and its own die workshop give Lamifil the possibility to adjust the processing of round and sector shaped wires. Lamifil also designs and manufactures special profiles on request.

Shaving

For certain applications the surface finish of the wire is a critical parameter. For this purpose, Lamifil has developed a special shaving process that removes a thin layer of metal from the wire. This operation results in an improved surface quality.

Extrusion

Lamifil is operating a powerful continuous rotary extrusion line which today processes round and sector shaped solid aluminium conductors for low, medium and high voltage cables up to 1600mm². Lamifil is permanently exploring new possibilities such as the processing of aluminium alloys on this production line.

Stranded conductor

Lamifil can manufacture round and sector shaped stranded conductors. When required Lamifil can compact the conductors or fit it with water blocking tape. On its range of stranders Lamifil produces different types of conductors with 7 up to 91 strands and sections up to 1400mm². If required, Lamifil can apply special finishes for improved emissivity.



Heat treatment

Lamifil uses various heat treatments to achieve the desired electrical or mechanical properties of its wire.

- *Continuous heat treated aluminium ("CHTA")*
- *Solution treatment of individual coils*
- *Batch annealing, artificial ageing and homogenising*
- *Protective atmosphere treatments*



Cold forming

Lamifil is one of the leading suppliers of aluminium alloys in the mechanical industry. Applications range from wires for OHC fittings over bolts, rivets, nails and fencing to industrial detonators for the mining industry.

Lamifil is constantly working on extending its product portfolio.



Continuous rotary extrusion

Continuous rotary extrusion lines are fed with aluminium or aluminium alloy wire rod to extrude solid and hollow products. Extruded sections, tubes or multivoid tubes are often processed in end applications such as household appliances, industrial cooling systems and coolers used in the automotive sector.

In collaboration with various manufacturers Lamifil has fine-tuned its wire rod to meet the specific requirements related to the use on these extrusion lines.



Steel industry

Aluminium wire rod is used for the deoxidation of steel. Lamifil's flexibility and customized packing services are critical for this continuous process. JIT deliveries made renowned steel companies to choose Lamifil for their deoxidation process.

**A full and innovative range of quality products
developed to meet the challenges of today
in a host of applications.**



Lamifil offers flexible production capabilities to meet customer specific requirements or provides tailor-made solutions.



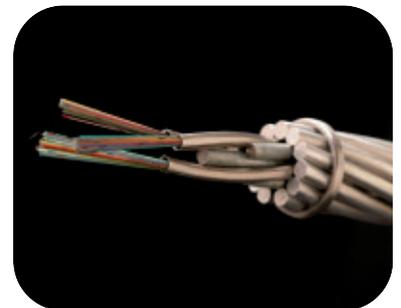
Low, medium and high voltage power cables

Lamifil's solid round and sector shaped aluminium conductors are processed by its customers for low, medium or high voltage power cables.

Lamifil manufactures stranded aluminium conductors, optionally compacted and fit with water blocking tape.

OPGW

Optical Ground Wire operates both as ground wire as well as telecommunication cable. The electrical and mechanical properties of OPGW are accommodated through the use of AlMgSi alloy wire. Lamifil's advanced know-how and experience in manufacturing AlMgSi wire make it the preferred supplier for major European OPGW manufacturers.



Overhead conductors

Lamifil is renowned for its innovative high end solutions in overhead conductors. Expertise and capabilities in high conductivity and high temperature alloys can be made available to partners in the industry through stranding services, wire drawing or deliveries of wire rod. Lamifil can provide all high temperature aluminium zirconium alloys (AT1-TAL, AT2-KTAL, AT3-ZTAL, AT4-XTAL) as wire rod or drawn wire.



Quality

8



Lamifil is committed to one overriding goal: providing total customer satisfaction. To achieve this, Lamifil has implemented a quality management system based on the ISO 9001:2008 standard. Wherever possible Lamifil aims to develop close partnerships with its customers. Through data analysis and permanent dialogue, Lamifil puts “continuous improvement” into practice.

The whole manufacturing process is subjected to stringent quality controls, which involve checks on the state of the machinery, the manufacturing parameters and the product features. Highly developed control technology and test equipment for all the relevant features are available for this work.



Lamifil's reputation is that of a high-end supplier, continuously improving its products by applying a consistent and all-encompassing quality policy creating added value to the supply chain.

Lamifil pursues a policy of continuous environmental improvement and has appointed an environmental coordinator who reports to the Managing Director. Lamifil is convinced that the quality of our environment determines the quality of our future.





Lamifil's aluminium and copper wire is used by its customers in railway, steel, energy, automotive, aviation, construction, food and even mining applications. Lamifil has manufactured over 1.000.000 MT of aluminium and aluminium alloy wire rod used in these very diverse markets.

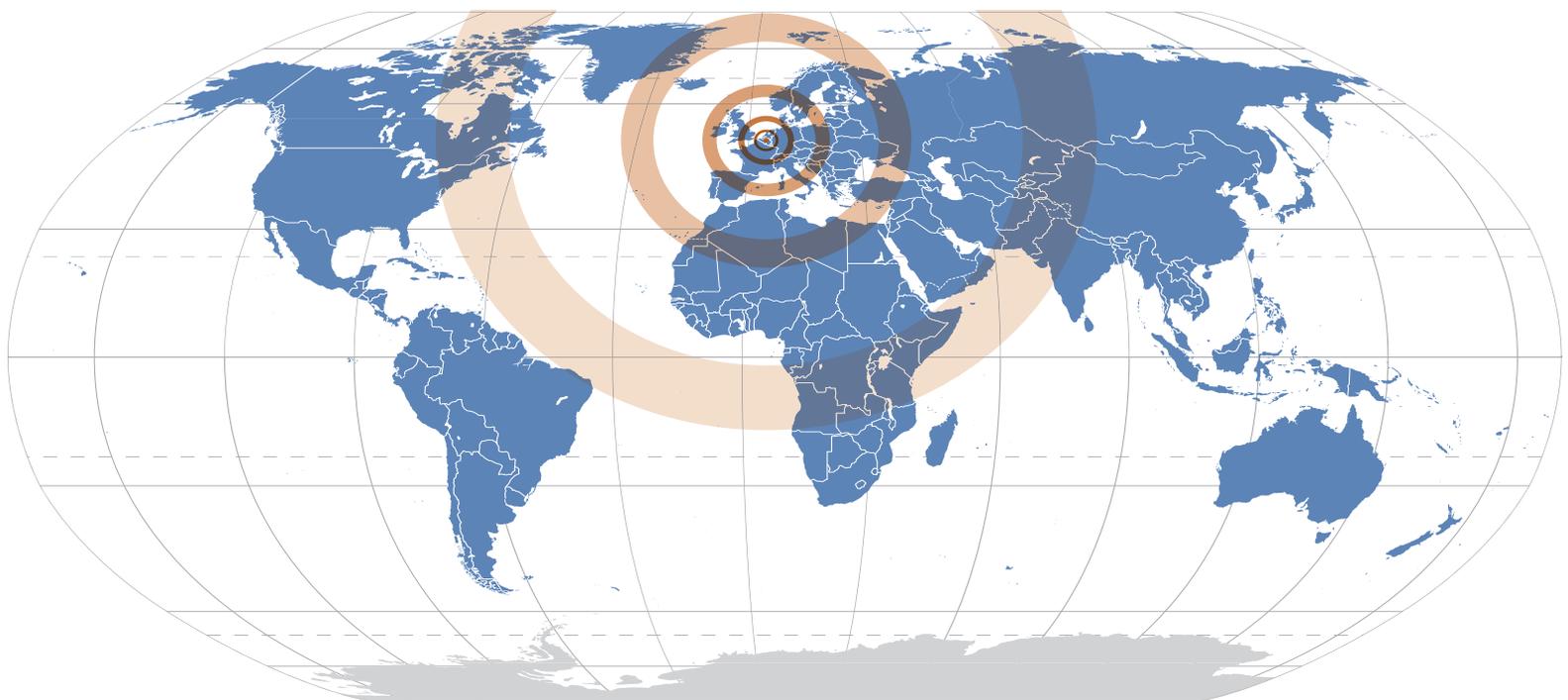


Lamifil is convinced that developing customer partnerships creates benefits for both parties. This is illustrated by a number of clients who are already more than 30 years loyal to Lamifil. In many ways Lamifil's know-how contributed to new developments and better products for these customers.

With more than 350.000 km of solid aluminium conductors delivered over the past ten years, Lamifil can proudly state to be an established and reputed supplier for cable manufacturers.

Lamifil's quality and reliability has also initiated long standing relationships with customers in mechanical markets. Lamifil's aluminium alloy wire rod can therefore be found in cooling systems used in the automotive industry worldwide.

Lamifil, a name synonymous with high-quality products and sustainability.





The powerful combination of cutting edge technology, state of the art manufacturing equipment and extensive metallurgical experience makes Lamifil a truly unique manufacturer.



Lamifil nv

Frederic Sheidlaan
2620 Hemiksem
Belgium

phone: +32 3 870 06 11
fax: +32 3 870 06 74
email: lamifil@lamifil.be

www.lamifil.be

Lamifil nv

Frederic Sheidlaan
2620 Hemiksem
Belgium

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fax : +32 3 870 06 74
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