

Erbslöh Aluminium GmbH



# Aluminum

## Aluminum – our passion

This modern material with its impressive properties – low weight, strength, elasticity and luster – is an inspiration to designers and engineers alike. Is there any other material that has generated more design ideas than aluminum in recent decades?

It is our aim to be best in class in our traditional market places. We respond to our customers' calls for creativity and innovative capacity, support and advise them how to implement their product ideas and are their partners, advisers and manufacturers – from alloy development through to the final product.

Especially in automobile construction the most pressing topic is currently the trend towards fuel-efficient vehicles with lower CO<sub>2</sub> emissions. With all its development potential our material is predestined to achieve weight savings but without neglecting the requirements for functionality and premium-quality visual appearance.



# ALMINOX<sup>®</sup>-Aluminum Extrusions

## — a brilliant result world-wide

### A process spreads around the world

ALMINOX<sup>®</sup> is obtained in a special process that incorporates manufacturing round bars by smelting and casting aluminum and then extruding them on hydraulic presses. Thanks to our materials and manufacturing know-how this product offers significant handling benefits when highly decorative trim components are further processed, e.g. burnished, polished or anodized.

Implementing customer requirements around the world has almost become second nature to us nowadays. Our ALMINOX<sup>®</sup> products have achieved a high degree of acceptance with almost all automobile producers and processors of decorative aluminum sections which means that supplying our customers all around the world has become a routine operation. We have established our materials and manufacturing know-how not

only in Europe but are now also in a position to supply customers in North America on a just-in-time basis. The renowned Erbsloeh Aluminum Solutions, Inc. joined our corporate group in November 2013. These extrusion specialists who are based in Michigan supply extruded aluminum products to the American market and thus also constitute an ideal bridgehead for our quality ALMINOX<sup>®</sup> products and service in the American region.





# DISPAL<sup>®</sup> - High-performance materials

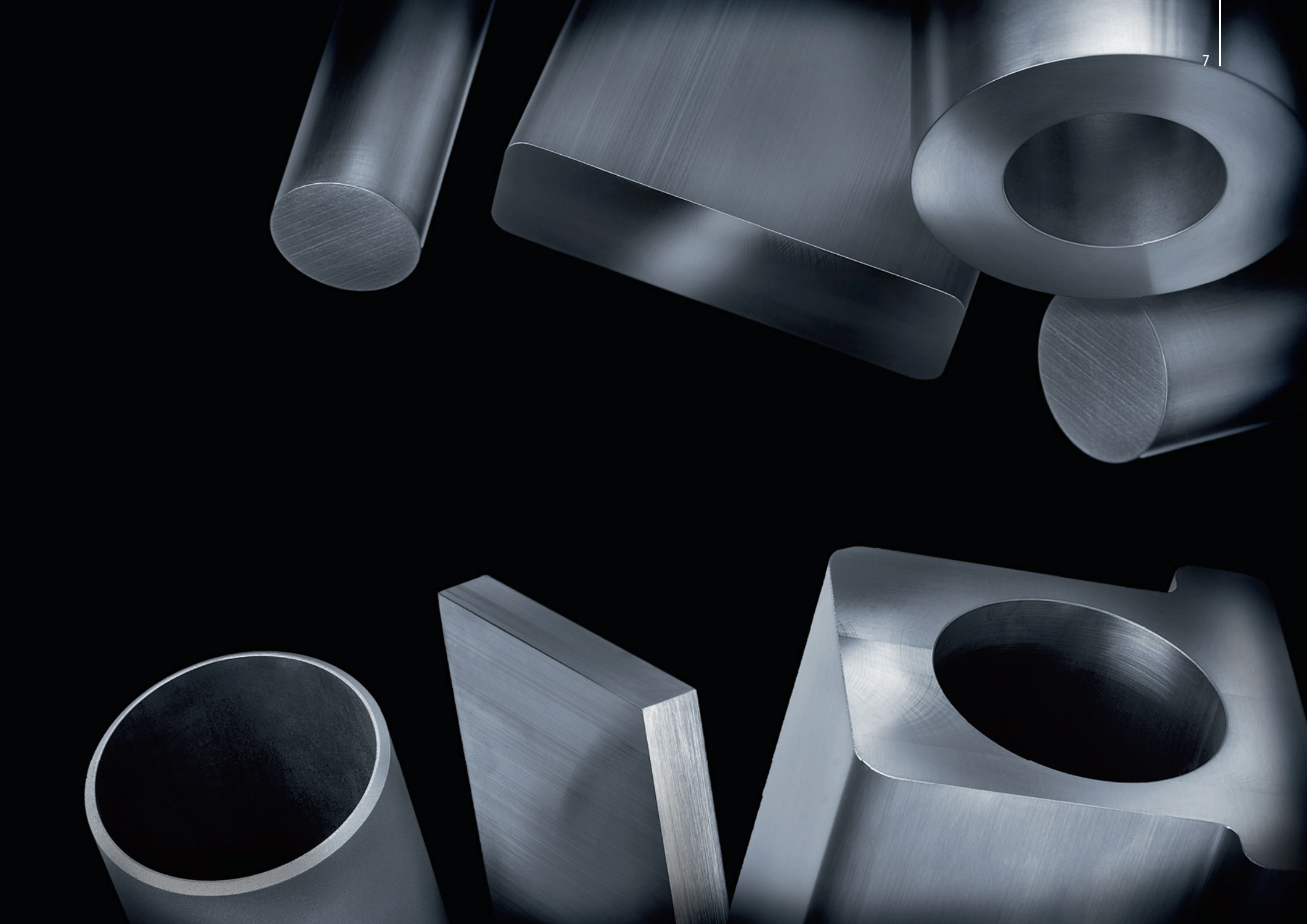
## **DISPAL<sup>®</sup> – superior properties**

Equipped with optimal resistance to wear and tear, higher stability and rigidity properties, excellent heat dissipation as well as significant weight reduction compared to parallel material and technology systems products made with the high-performance DISPAL<sup>®</sup> material demonstrate their advantages in the market place.

No matter whether it is used for semi-finished items in machine construction or light-weight components for engines and gears, our powder metallurgic DISPAL<sup>®</sup> products provide lower consumption rates and weight savings – combined with additional performance potential.

However, much more can be achieved with DISPAL<sup>®</sup> materials as has been demonstrated by manufacturers in the industrial handling and positioning sector, the optics industry as well as by the aerospace industry.





# Casting

## It all depends on the composition

In metallurgic terms an "alloy" is a mixture of several different chemical elements. Aluminum alloys are created by the admixture of additives such as magnesium, copper, silicon or zinc. This improves the original properties of pure aluminum in a defined manner.

As the base material ALMINOX® used for the extrusion process is

produced by Erbslöh on their own premises we are also able to determine the composition of the alloys ourselves. This is why we have almost unlimited potential with our products to transfer specified properties to the final alloy.

If there is a demand for high rigidity, bending capability bordering on what is feasible,

corrosion resistance or a brilliant surface appearance, our materials experts will come up with the right answer. We compose our material.

Spray compacting is yet another option when manufacturing extrusion billets. Depending on what the customer requires we are able to apply this powder-metallurgic process to cool down

a high-alloyed melt extremely rapidly.

The material DISPAL® offers properties comparable to those of steel and has a particularly close grained, uniform and very easily processed structure which is only reminiscent of conventional aluminum by its weight.





# Extrusion

## Knowing how is crucial

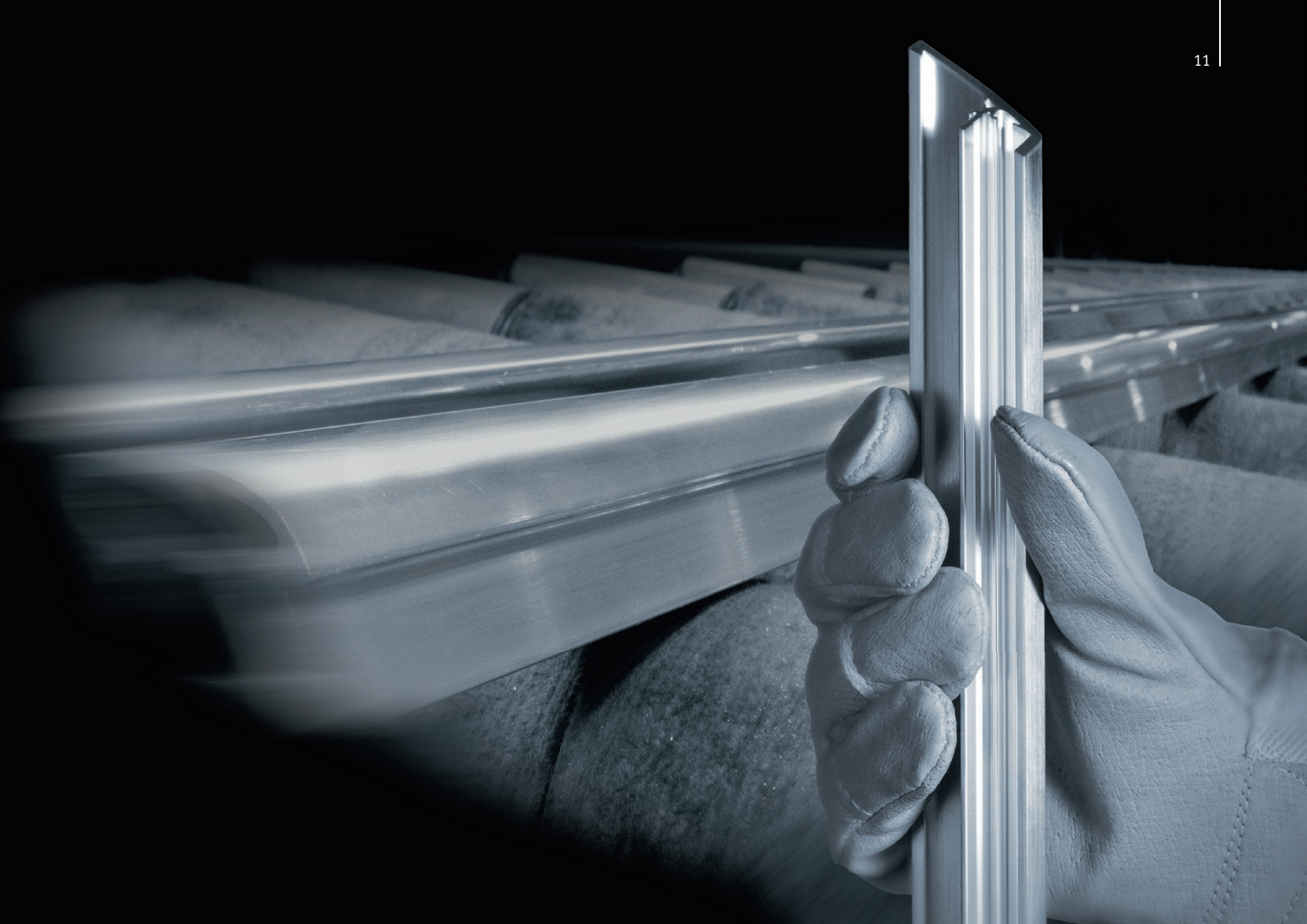
If you have developed an outstanding material its properties only fully come to the fore when it is further processed in a qualified manner. This is extrusion performed to perfection, the directive to our manufacturing facility.

And we have been doing this for more than one hundred years. As pioneers in industrializing aluminum we designed and built the first extrusion press back in 1911.

Using ten extrusion presses with dimensions ranging from 5 inches to 10 inches, we manufacture particularly resilient, exceptionally ductile or high-gloss profiles both in Europe and North America.

Anything is possible – from trim and functional sections for automobiles to roof-rails, industrial products or heat exchangers. If you know how.





# Surfaces

## **In brilliant shape**

We steal the show when it comes to surface refinements thanks to our great experience. No matter whether matt or high-gloss, anodized or electrochemically polished – we are pleased to fulfil quite special customer requirements as well.

Impeccable surfaces ranging from high-gloss to matt, from natural-colored to black are achieved by applying various different processes – depending on the material and/or alloy involved. Of course, special attention is paid to pre-treatments such as burnishing, polishing or pickling.

The basis for the highest quality surface is always the composition of the primary material.

Especially our ALMINOX® profiles are brilliant proof of our unbeatable surface quality.





# Mechanical Processing

## **The customer makes the decision**

Depending on what the customer wants and on the properties required of the final product we have a wide range of refinement processes at our disposal for mechanically treating semi-finished extruded items.

It goes without saying that all the necessary operations involved in both metal cutting and non-cutting processes are performed on special machines designed specifically for our products.

Fulfilling the customers' wishes is our prime objective – we take care of the implementation and can thus guarantee an individual approach combined with functionality and naturally with precision.



# Automotive

## Functionality and design interact

Decorative and functional components all around a vehicle are integral constituents of vehicle design. This is why we manufacture both light-weight semi-finished items with small and delicate cross-sections for decorative applications as well as sturdy profiles for roof-rail systems.

Depending on customer requirements, we utilize our specialist

know-how when manufacturing and processing our high-gloss aluminum materials marketed under the ALMINOX® trademark which enjoys a fine reputation with our customers.

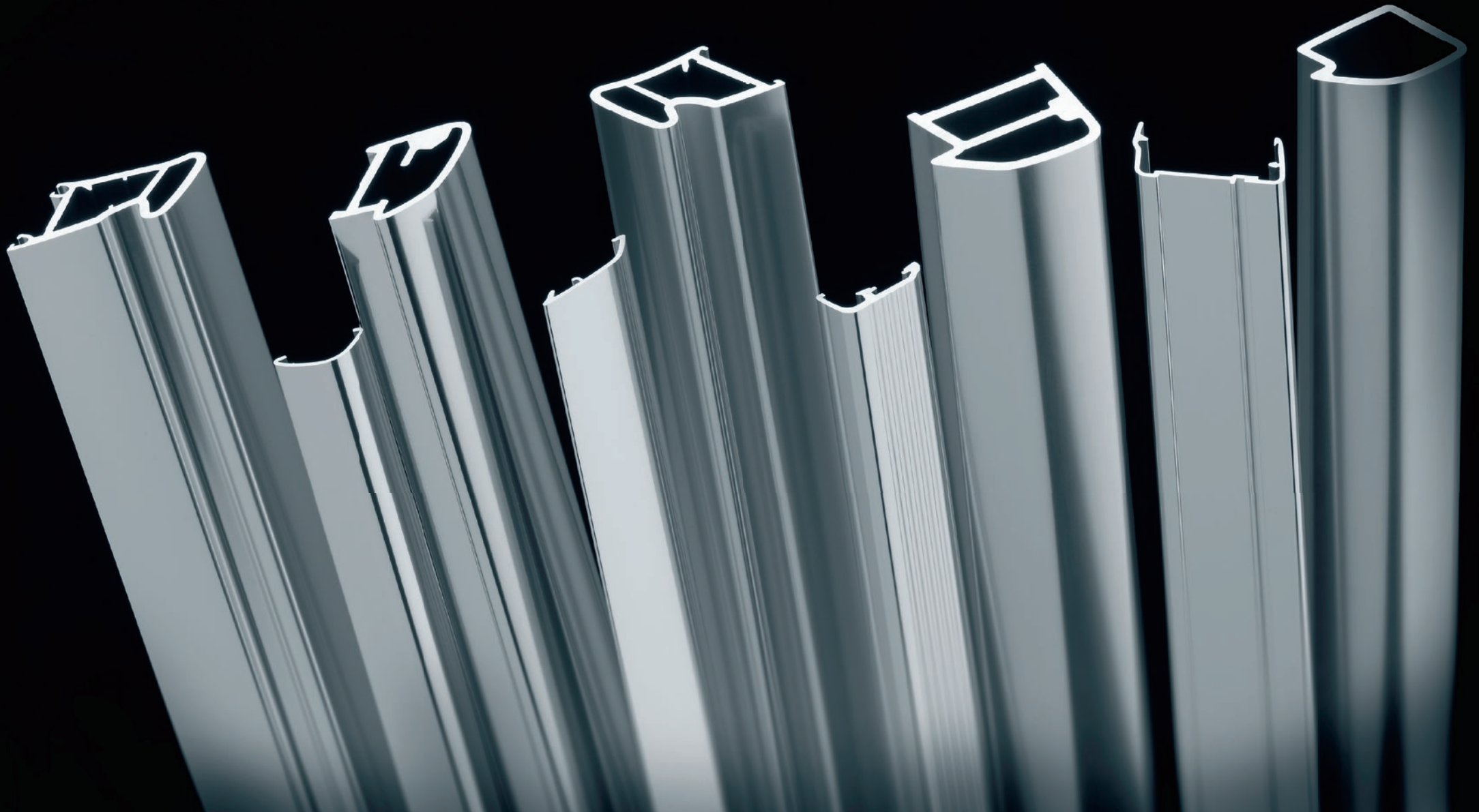
When engineering these semi-finished products we take their final applications into consideration right from the word go. This ensures that the vehicle designers' wishes are

satisfied and equally those of the engineers with regard to window channels, covers and/or water management.

The tightest of tolerances, the most stringent requirements for elasticity combined with inimitable surface quality – all these factors are taken into consideration well in advance.

We have been able to convey unheard-of characteristics to our aluminum materials thanks to many years of research and development work. The result is DISPAL® produced in a powder-metallurgical process. This material is particularly light and is mainly used in engine component applications such as pistons, con-rods and bearing blocks because of its excellent mechanical and physical properties.





# Industrial Applications

## A liaison of function and aesthetics

If you are looking for something special the path simply leads straight to aluminum. You cannot imagine applications without our material in high-grade, design-oriented product sectors such as bathroom fixtures, furniture accessories, domestic appliances, lighting or components for consumer electronics.

Exceptional functionality and great resistance to corrosion combined with an impeccable surface quality are unbeatable arguments that speak in favor of our material.

Our aluminum profiles with complex cross-sections are used to make elegant, elaborately curved fixtures for glass shower cubicles or sophisticated cover moldings.

Handles for the white goods and furniture manufacturing industries are further features in our portfolio.

In the field of consumer electronics we focus on the housings of unusual loudspeaker combinations and futuristic flat-screen televisions.

We enable designers to let their fantasies become reality, not only in Europe but in North America, too.

Our DISPAL® material made from metallurgic powder is ideal for industrial applications demanding greater strength and heat resistance. Products made of this material are especially light and offer optimum mechanical and physical processing properties.

They are popular for applications in special machine construction and precision and positioning technology.



# Heat Exchangers

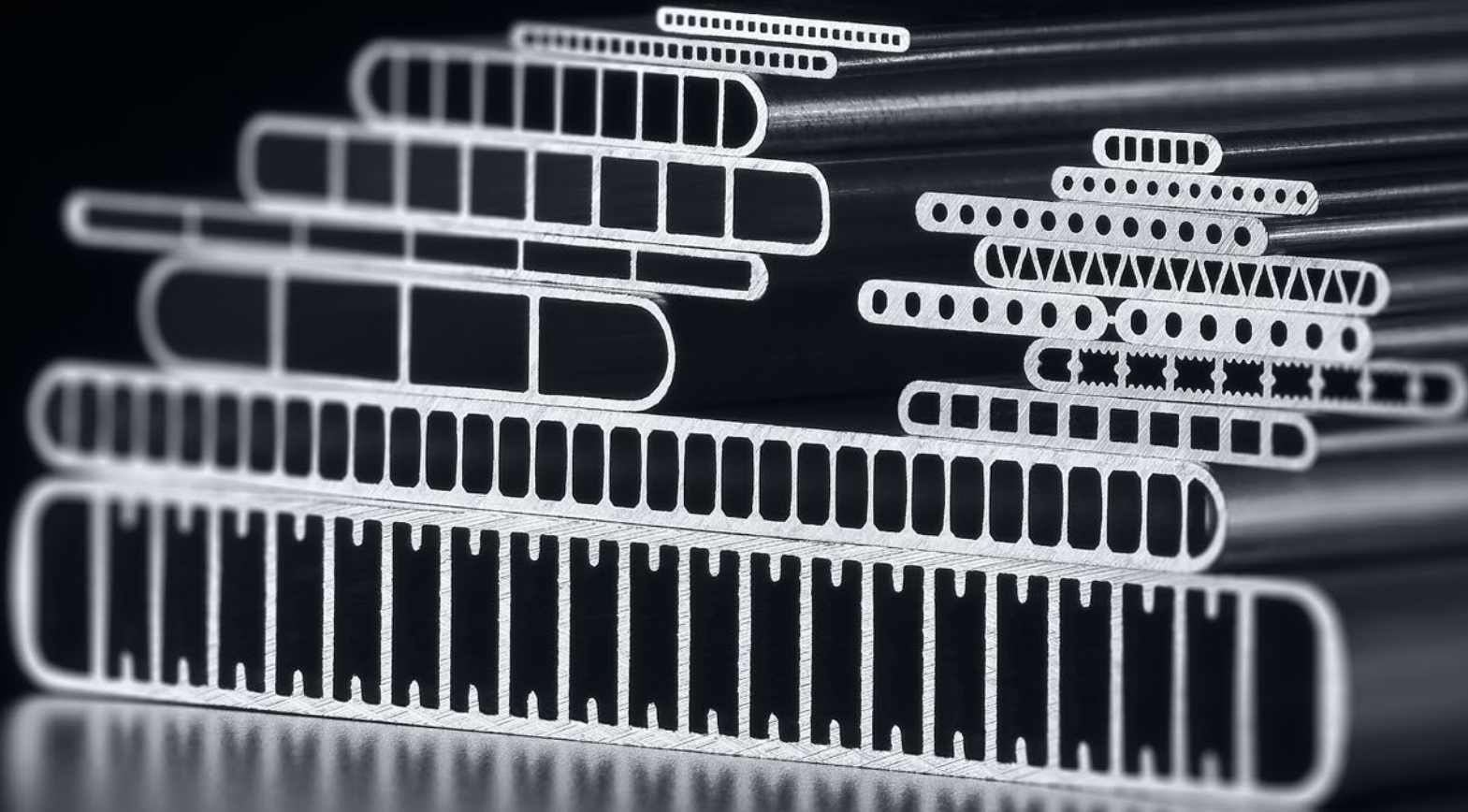
## **Highest precision in the tightest of spaces**

Our minute hollow-chamber frame profiles made of aluminum – also known as micro multi-ports – have made a considerable impact. They are made using sophisticated extruding and refining techniques which permit practically zero tolerances. These semi-finished products are used mainly for manufacturing heat exchangers in car air-conditioning units.

Our materials withstand loading under great pressure and high application temperatures. We also offer various concepts aimed at combatting corrosion. Our zinc, flux or solder coatings – both with and without binders – meet all the demands on modern, high-performance heat-exchangers. We open up new opportunities.

The somewhat larger sized aluminum heat exchangers comprising of multi-port profiles are highly economical and provide substantial cost savings in terms of product weight. Extruded profiles ranging in width from 25 to 120 mm are used mainly for charge air cooling, water and oil cooling and heating equipment.





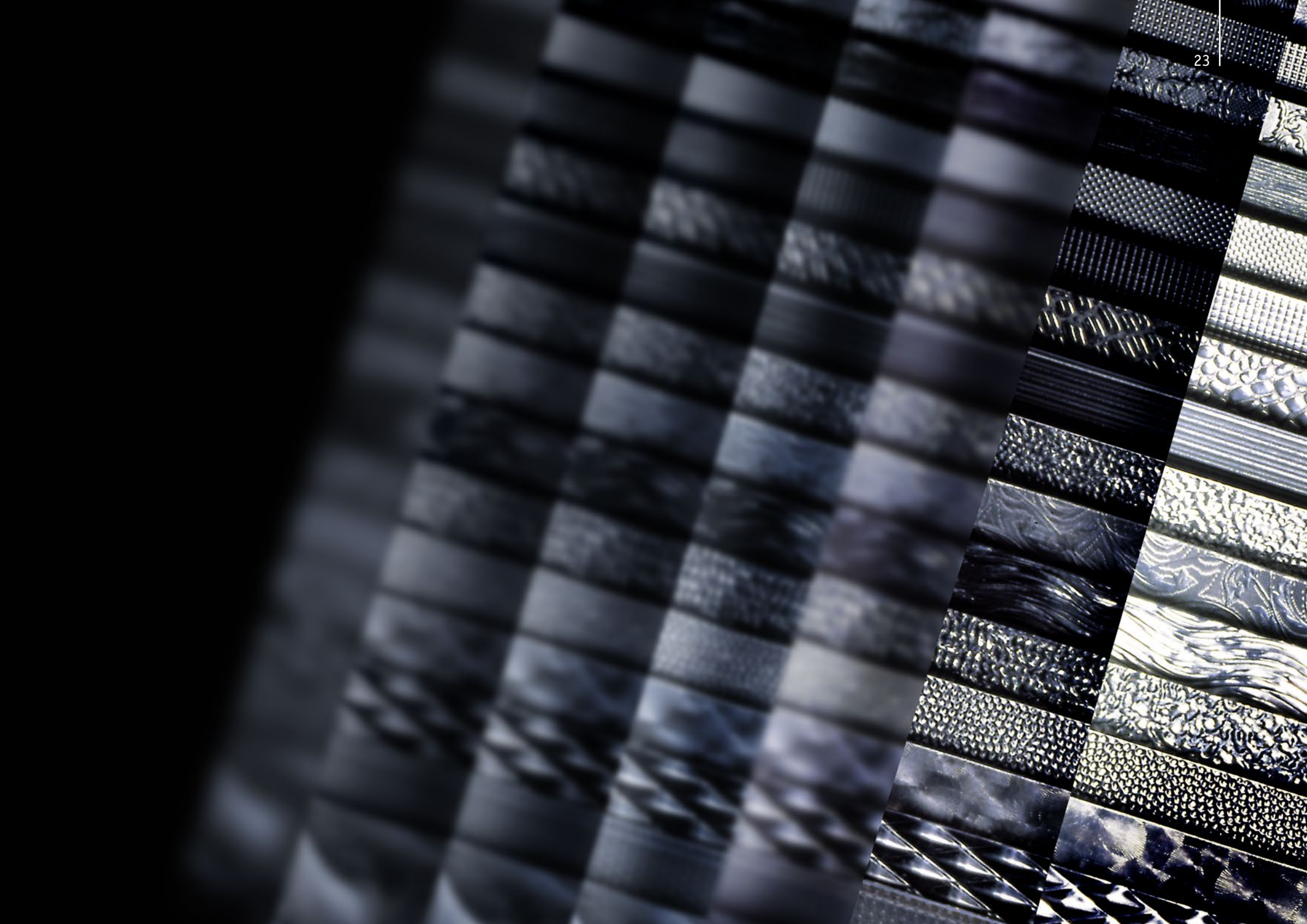
# Aluminum Design

## **Formative impressions, creative design**

Creating surface designs on metal strips and sheets by means of embossing rollers – frequently called texturing for short – has been part and parcel of the original technologies that laid the foundation for the business success of our present-day corporate group.

More than 300 attractive designs have developed over the years and new ones are created on an almost daily basis. Whether classical or romantic, whether geometrical patterns or flowing lines – the range is considerable. And if for a change the design a customer is looking for is not readily available we will come up with a "tailor-made" solution to satisfy his needs.

There is absolutely no lack of solutions for the lighting industry in particular, for internal and external architectural applications and especially for high-class passenger car interiors.



# Our Company

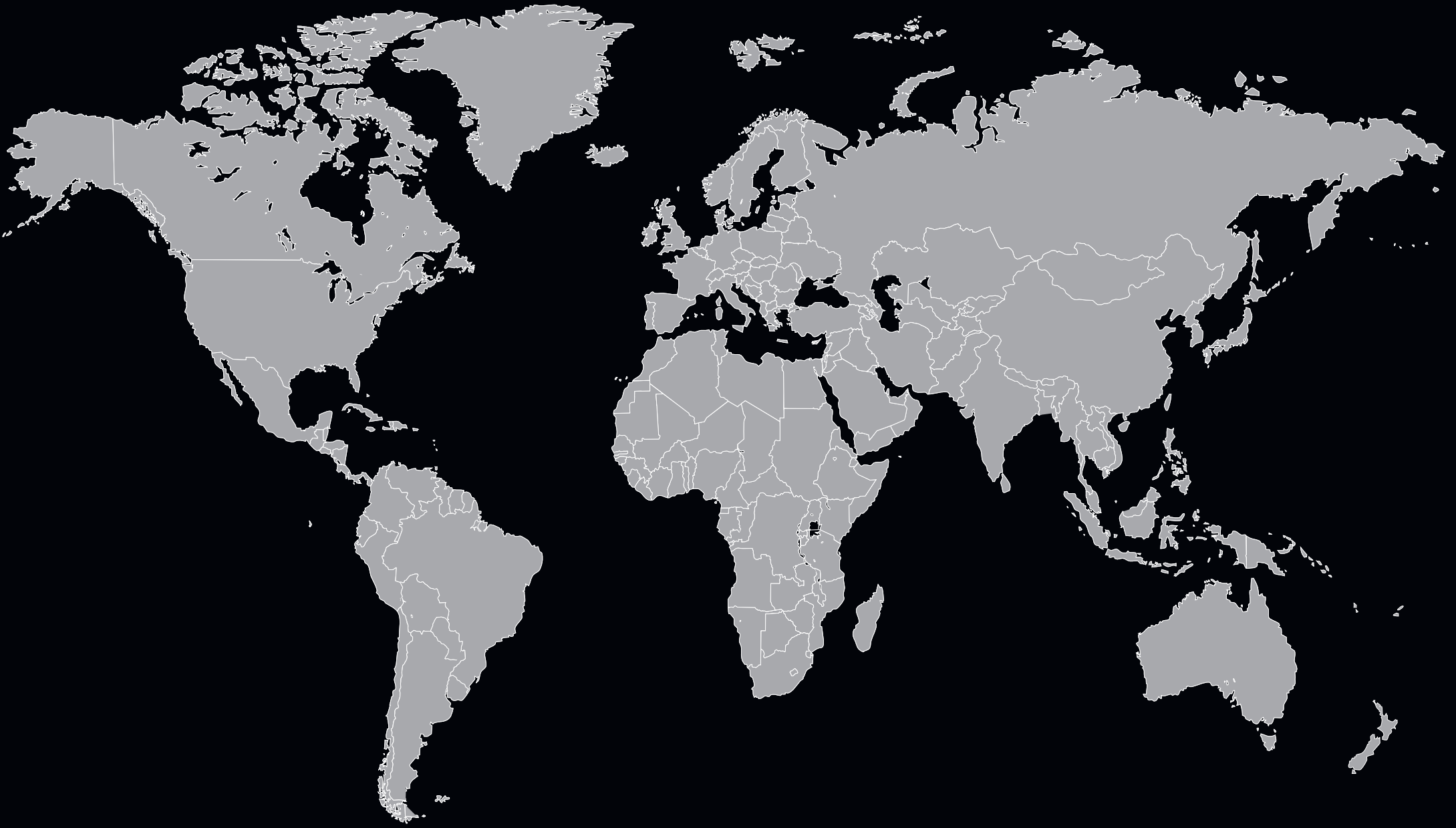
Fulfilling our customers' wishes starts by procuring the necessary raw materials, compounding them, then casting pure and ultrapure alloys as well as extruding them on seven large-scale presses located at the German parent company's factory in Velbert-Nevinges and a further three in Portage, Michigan.

Another facility based at Hemer in Germany and the Michigan location are at our disposal for mechanically processing our industrial products and subjecting them to surface refinement operations.

As your partner we excel with our best-in-class products and processes. To us, reliability, fairness and loyalty are core values that define our daily routines.

We achieve this by interacting with our customers, suppliers and the entire team in a respectful and frank manner.





# Our Mission Statement

We have been working towards the success of our customers ever since our parent company was founded back in 1842. This ambition is based on our mission which is to develop, manufacture and market aluminum materials and best-in-class extrusions with high quality requirements. Our core competence in this respect lies in the great degree of

differentiation in smelting and alloying special working materials as well as in the field of extruding and refining profiles with tight tolerances and sensitive surfaces.

Development potential and creative space for pioneering spirits evolve wherever tradition has formed a solid basis.

Every single person in our company contributes towards a successful future with his or her know-how, experience and ambition.

Our target is never to rest and always to march on with a concrete goal in clear view ahead of us.

Together with the Erbsloeh Aluminum Solutions, Inc. we endeavor to grow successfully on the European and North American markets for trim moldings, roof-rail and industrial profiles, naturally with a special focus on our ALMINOX® alloys.





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