WAELZHOLZ

FOR THE CHALLENGES OF THE FUTURE

Customized steel strip solutions



In the future

Global digitization and ever shorter innovation cycles dictate the pace of economic trends. They require us to constantly reposition ourselves to meet the evolving needs of our markets. Meeting this challenge is our ambition.

We develop material and service solutions for this future that keep pace with every change. We support our customers in every stage of the value creation process to give them the decisive edge in global competition.

Contents

04 Creating value through engineering
Thinking – thinking ahead – rethinking

08 High-precision process technology
More than just decimal places

12 Industry-specific materials
Our megatrend is you

19 Nearby, across the globe
When zero plus one equals 360°

22 More than just technology
The Waelzholz DNA

26 Facts & figures
Well positioned



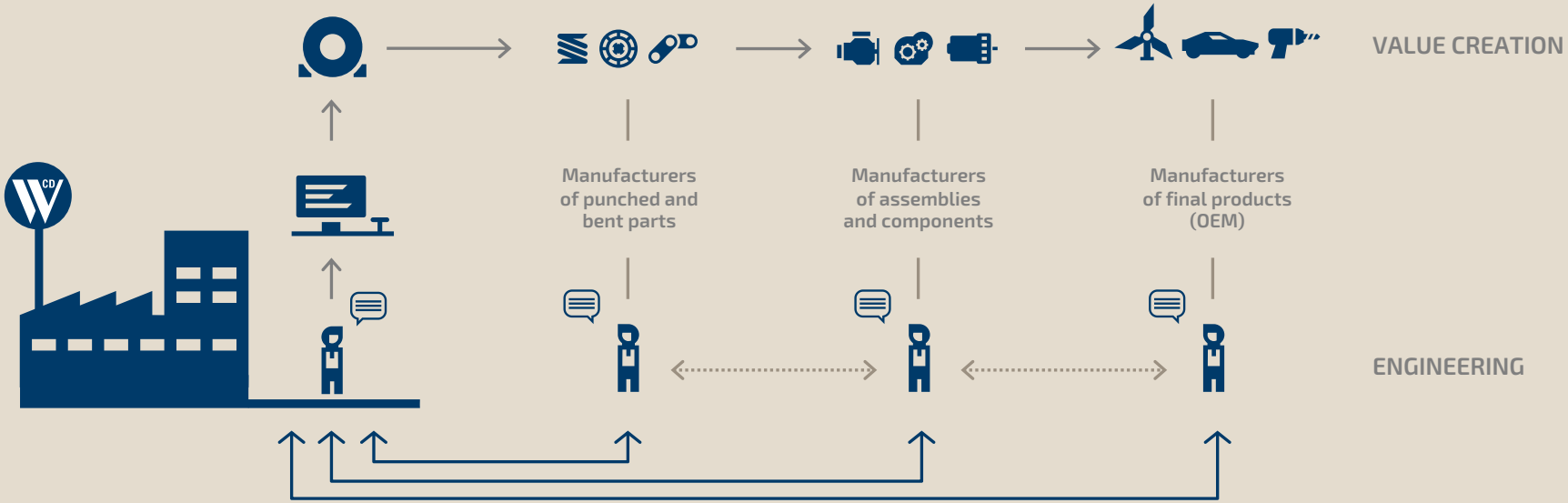
Creating value through engineering

Thinking – thinking ahead – rethinking

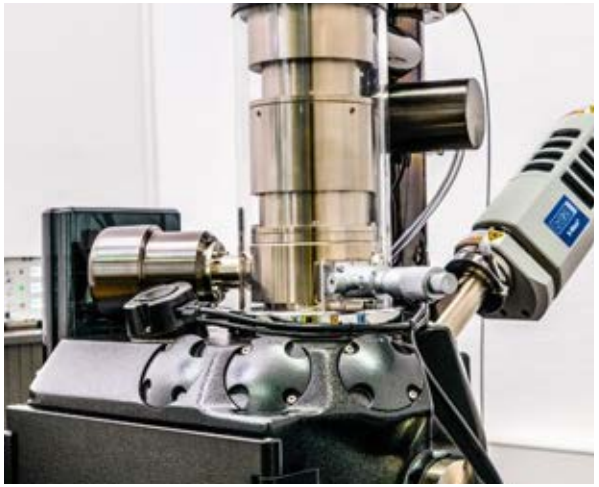
Results-driven engineering means thinking ahead to the last step of the value chain. In doing so, we think in terms of product innovations required by the market, because ultimately the requirements determine the result that needs to be achieved. It is this deep understanding of customer needs that gives us the ability to develop customized material solutions.

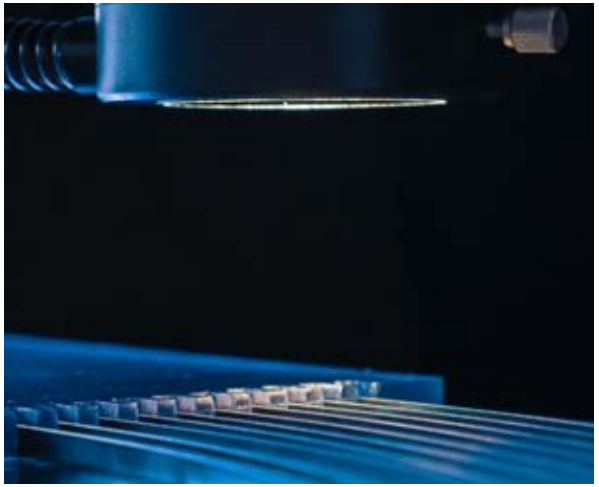
One step ahead

We provide consulting services tailored to the specific industry to support our partners right from the development phase. This is how we achieve the greatest possible degree of flexibility for the development of innovative products at all stages of the value chain.









Engineering is the key

01 Functional surfaces
02 Cutting-edge measurement and testing technology
03 Precise shape and position

Companies that operate on a global scale closely collaborate with Waelzholz during their development process and benefit from our engineering expertise right from the very beginning of the product development phase.

To individually optimize materials, we combine decades of experience with high-end technologies in development, production, and quality assurance.

This is how virtual cold rolled steel strip prototypes become actual materials that specifically meet the requirements of our customers at every stage of the value chain.





Opposites in harmony

Excellent formability and bendability combined with high tensile strength without cost-intensive piece hardening – these are exactly the properties offered by Waelzholz's bainitically hardened and tempered PT-strip.

We describe it as opposites in harmony.
Or simply call it efficient.

Sample part

01 PT 120 with a thickness of 1.7 mm (0.067 in) and a tensile strength of Rm = 1,150 MPa (167 ksi)

02 Minimum bending radii of 2.5 mm (0.099 in) transversal and 3.26 mm (0.128 in) longitudinal to the rolling direction



High-precision process technology

More than just decimal places

Our state-of-the-art production lines, in combination with highly sensitive measuring technology, allow us to reliably manufacture our products to the tightest tolerances. This level of precision requires expertise and experience. This is exactly what can be found in our approximately 190-year company history – and above all, in each individual mind.

Core process: cold rolling

Powerful and extremely precise

Our production lines are among the most advanced in the industry – from individual rolling mills in various arrangements to four-high tandem rolling mills and Sendzimir mills, we have the right process for every steel material. In this context, our grinding shop ensures that the work rolls exhibit a perfect surface structure, which in turn plays a decisive role in material quality.

Thanks to intelligently connected measurement and control technology, such as the use of X-rays and isotope beams for non-contact thickness measurement, all production-related parameters can be adjusted during manufacturing within a few milliseconds. Which means our rolling processes are – above all else – extremely precise.



Core process: annealing

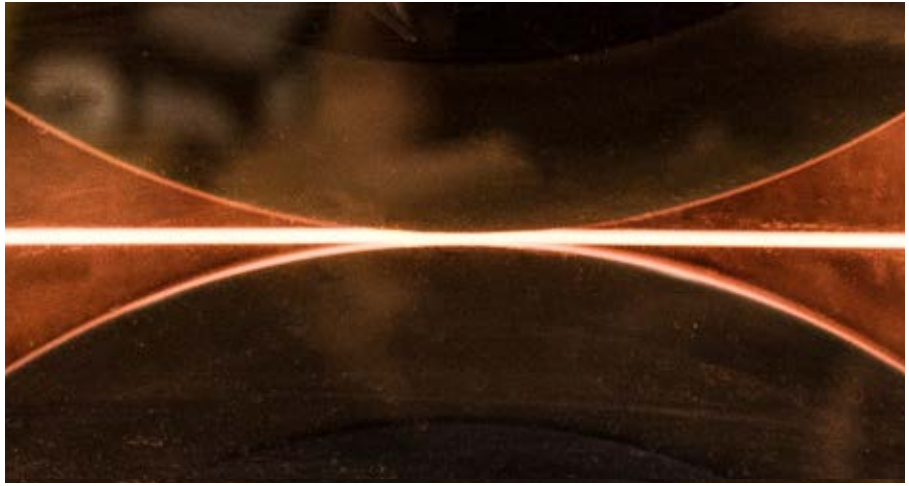
Quality can be controlled

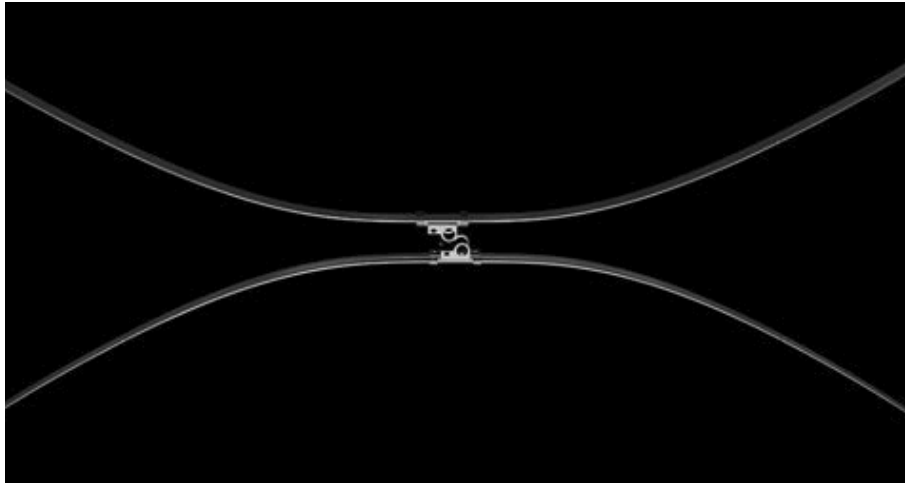
Homogeneous microstructures are the basis for achieving outstanding – and nearly all – material properties. That is why we have established annealing as one of our key areas of expertise.

Our state-of-the-art heat treatment lines allow us to conduct annealing processes with unparalleled variety and precision within the narrowest temperature tolerances. With more than 200 different defined annealing specifications, we meet all of our customers' individual requirements with respect to the functionality of our cold rolled steel strip. Furthermore, we achieve an extremely uniform temperature distribution over many annealing cycles with our high convection annealing furnaces – in order to create the perfect microstructure. In this process, we use hydrogen as an inert gas to guarantee exceptional surface quality.

We use this expertise specifically to match the heat treatment to customized rolling processes and thereby achieve what we want to offer our customers – outstanding quality.







Core process: hardening and tempering

Top performance at top speed

When we harden and temper cold rolled steel strip, speed can also be a decisive factor. With Waelzholz's patented conductive high-speed hardening and tempering process, we heat the strip to over 800 °C (1472 °F) within seconds and then cool it down again abruptly. The result is a homogeneous, fine-grained microstructure that clearly surpasses the results of conventional methods.

We produce the three microstructure types martensite, sorbite, and bainite, each on our own highly specialized heat treatment lines.

01 Conductive high-speed hardening and tempering

02 Wiper blades



Industry-specific materials

Our megatrend is you

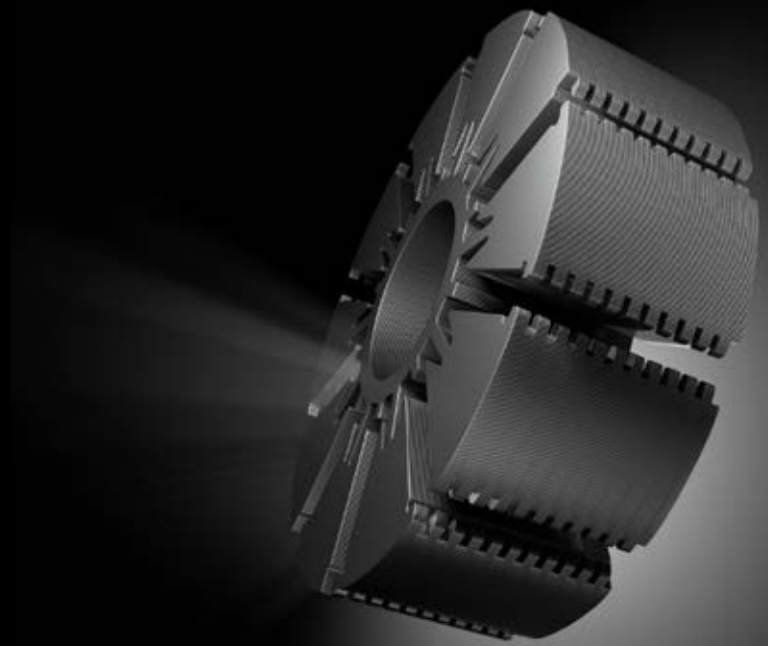
Modern materials are the key to product innovation in your industries. That's why we combine our materials expertise with in-depth industry knowledge – so that the unique material properties give your product a decisive advantage in your target markets.

For the key industries of the future

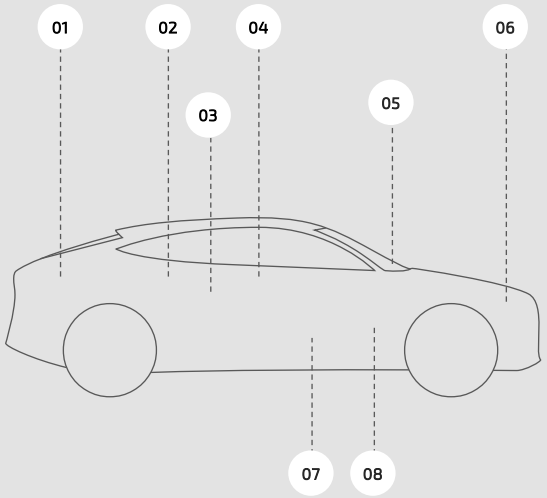
Megatrends are shaping the changes in our world. In a globalized society, they pose long-term challenges.

Mobility, energy, and a wide range of industrial applications are the key industries
of the future, and these are precisely our customers' fields of business.

We support them with comprehensive industry knowledge and individual steel strip solutions that offer new ideas and freedom to innovate within their own product and process development.



Automotive





01

Profiles

Retainer profiles:

Customized profile geometries



02

Fine blanking grades

Pawls:

Fine-blankable for comfort locks with defined acoustics



03

Sorbite

Retractor springs:

Constant spring force, long service life



04

Bainite

Locking springs:

Formability at high tensile strength, substitute for piece hardening



05

Flat wire products

Wiper blades:

Uniform bendability in hardened and tempered condition



06

Stainless precision steel strip

Hose clamps:

High strength and long life thanks to corrosion resistance



07

High-strength steel strip / RAWAEL®

Seat tracks:

High safety with reduced weight



08

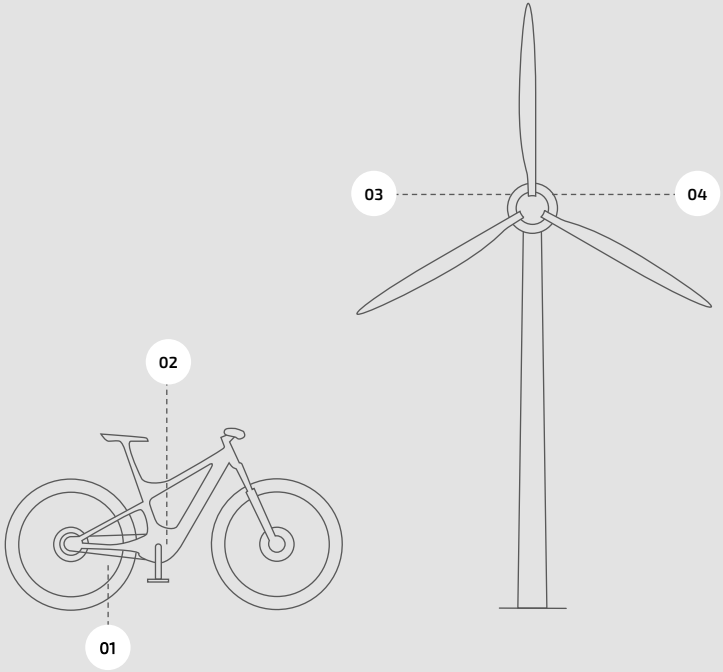
NO grades

Stators :

Excellent permeability, low core loss for high frequencies

Find out more at waelzholz.com/automotive

Energy





01

Steel for hardening and tempering

Bicycle chains:

High resistance to wear



02

Electrical steel strip

Stators :

Excellent permeability, low core losses



03

Martensite

Clutch plates:

High resistance to wear, substitute for piece hardening



04

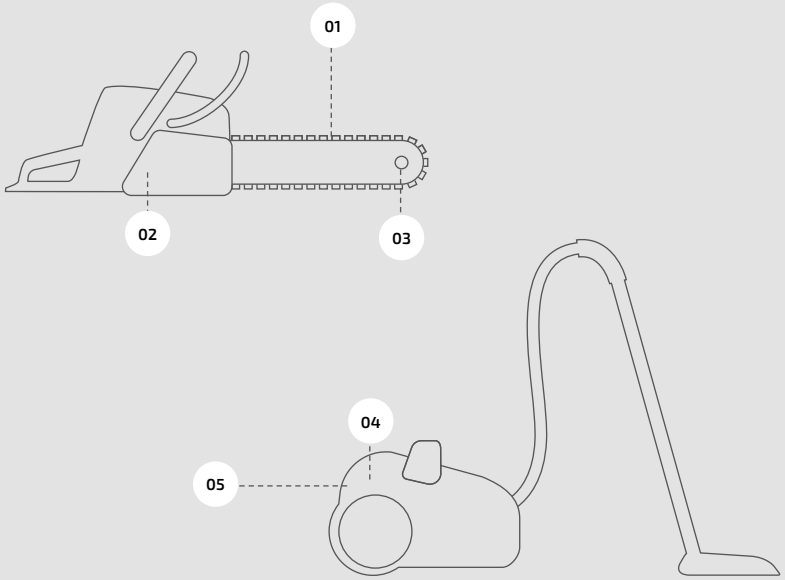
Electrical steel strip

Stator laminations:

Low core losses with excellent permeability

Find out more at waelzholz.com/energy

Industrial applications





01

Steel for hardening and tempering

Chain links:

High resistance to wear



02

Steel for hardening and tempering

Centrifugal clutch housings:

Highly uniform wall thickness



03

Steel for hardening and tempering

Nose sprockets:

High resistance to wear for high-precision chain guidance



04

Sorbite

Retractor springs:

Constant spring force, long service life



05

Electrical steel strip

Rotors:

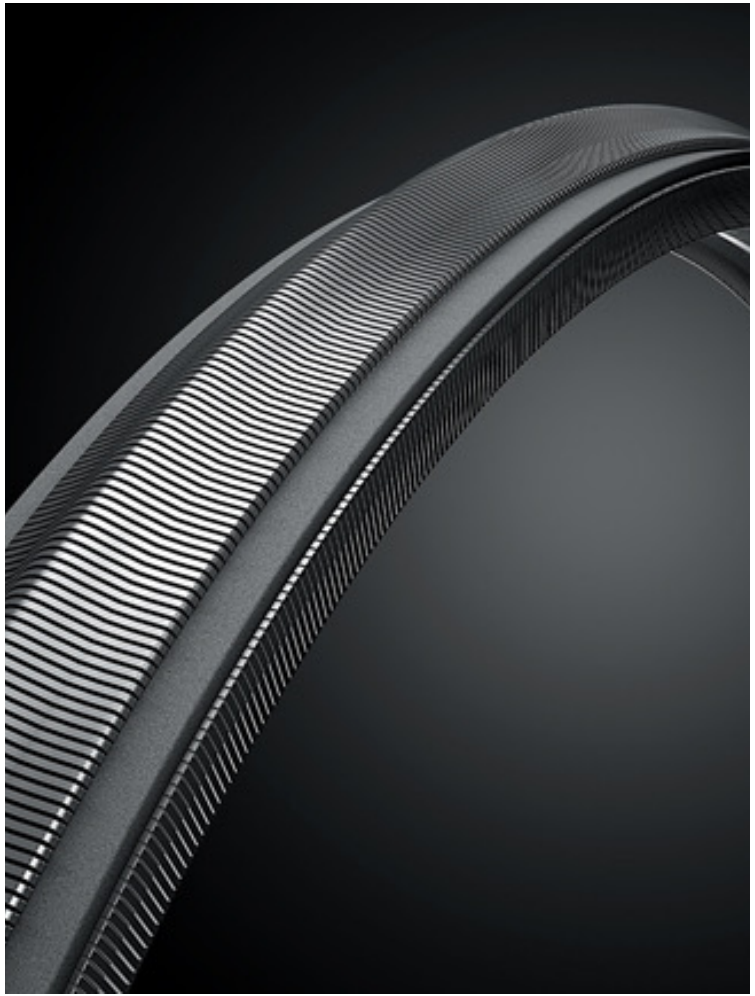
High performance, low core losses

Find out more at waelzholz.com/industrial-applications

Materials

PRODUCT GROUP	VARIATIONS	CUSTOMER BENEFIT
Cold rolled steel strip	DC-grade steel, micro-alloyed steel, case-hardening steel, steel for hardening and tempering, spring steel or fine blanking grades: alloyed or as standard grades	Unparalleled dimensional accuracy, good formability, suitable for heat treatment, high elasticity, optimal combination of tensile strength and formability
Hardened and tempered steel strip	Martensite, bainite, sorbite	Hardness, homogeneity, spring properties, high resistance to wear, substitution of piece hardening
High-strength steel strip	High-strength, micro-alloyed fine grained steel	High resistance to wear and good formability at the same time
Surface-coated steel strip	With a phosphate layer refined case-hardening or DC-grade steel	Implementation of complex, multi-stage forming operations, prolonged service life of the forming tool
Profiles	Over 250 different profile shapes made of steel strip or wire	Tailored geometries, cross-sections tailored to customer products and processes
Electrical steel strip	NO grades, HS grades, HP-/CDW-PERM® grades, EN 10106, bonding varnish, fast-bonding varnish or insulating varnish	Thermal conductivity, low core losses, high magnetic polarization, high mechanical durability at high speeds, undisturbed magnetic flux due to elimination of imperfections, improved insulation resistance
Flat wire products	Wide range of materials from spring steel to hardened and tempered steel strip	Prolonged service life thanks to a mill edge, high tensile strength and even bending properties
Stainless precision steel strip	Corrosion-resistant steel, upon request with special alloys	Resistance to corrosion, acids, or heat

Find out more at waelzholz.com/steel-materials



Exactly repeatable – every time

We deliver products of outstanding quality, even in the case of complex requirements. The repeatability of our processes ensures that our materials offer our customers a consistently high degree of reliability, which makes innovative products successful over the long term.

For example, the automotive supplier industry relies on profiles from Waelzholz when high demands are placed on the surface quality of the steel material used for the production of steel push belts for continuously variable transmissions.

The eddy current measuring technology integrated into our steel strip manufacturing process detects even the slightest deviations at an early stage and thereby guarantees a high and always reproducible level of quality.

That's how we do it. Over and over again.

01 Push belts for continuously variable transmissions (CVT)



Nearby, across the globe

When zero plus one equals 360°

Our activities and decisions are shaped by a global mindset. As a result, we supply materials of consistent quality from a variety of production facilities to all of our customers' locations worldwide. The close personal relationships of all those responsible across continents – and our digital connection – play a key role in this regard.



Progress begins in the mind

We offer our customers at each of our worldwide locations the unlimited engineering expertise and quality level of the entire group.

Digital workflows systematically interconnected with the systems of our customers create an extraordinary degree of data immediacy and completely new methods of value creation.

This ranges from the fully automated generation of customs documents to regional sourcing management and customized logistics concepts.

This creates customer benefits far beyond the final product.

Your local partner

We offer the expertise of the entire group at each of our locations. This makes it possible to develop materials locally and then make them available in identical quality in all regions worldwide.



Find out more about our locations at
waelzholz.com/locations



More than just technology

The Waelzholz DNA

Many of our employees are closely connected to our company for decades. As a result, the people at Waelzholz not only developed extensive technical expertise, but also a shared set of values that includes reliability, consistency, and a commitment to maximum quality. This DNA continues to attract innovative experts and allows our network to grow worldwide.







Four continents
One strategy

Asia, Europe, North America, and South America – you'll find our highly specialized teams on four continents. We systematically transfer knowledge and promote in-depth personal interactions between the people at our international locations.

This creates a wonderful mix of different cultures and a dynamic spirit that allows our culture of innovation to flourish across all levels and also brings forth surprising ideas.

As a result, personal skills and different ways of thinking connect to form our strategy – meeting our customers' highest standards all over the world.

The power of continuity

Waelzholz is a medium-sized, family-owned company.

Dr.-Ing. Heino Buddenberg runs the company as CEO. Two other executives manage the company's affairs: Holger Bierstedt, MBA, is responsible for Finance and Controlling. Henrik Caspar Junius, M. Sc., is the 7th generation descendant of company founder Caspar Dietrich Wälzholz and manages the company's Supply Chain Management.

We think in the long term and align our actions toward a sustainable strategy aimed at passing on a financially healthy and viable company to future generations. Our customers also value this continuity – and have done so for over 190 years.



Management of Waelzholz

Holger Bierstedt, Henrik Caspar Junius, Dr.-Ing. Heino Buddenberg (from left).

A long-term approach

A financially stable position based on the independence of our family-owned company is our highest priority, as it gives us the greatest ability to achieve our objectives. We support social and cultural institutions as well as educational initiatives and handle the resources necessary for our production processes carefully.

As an innovation driver for modern, environmentally friendly technology, our material solutions play an important role, especially in many future-oriented industries. Lightweight engineering using our high-strength materials, for example, contributes to weight reduction and therefore to a reduction in fuel consumption in automobiles.

In this way, we are already actively thinking about tomorrow, today.



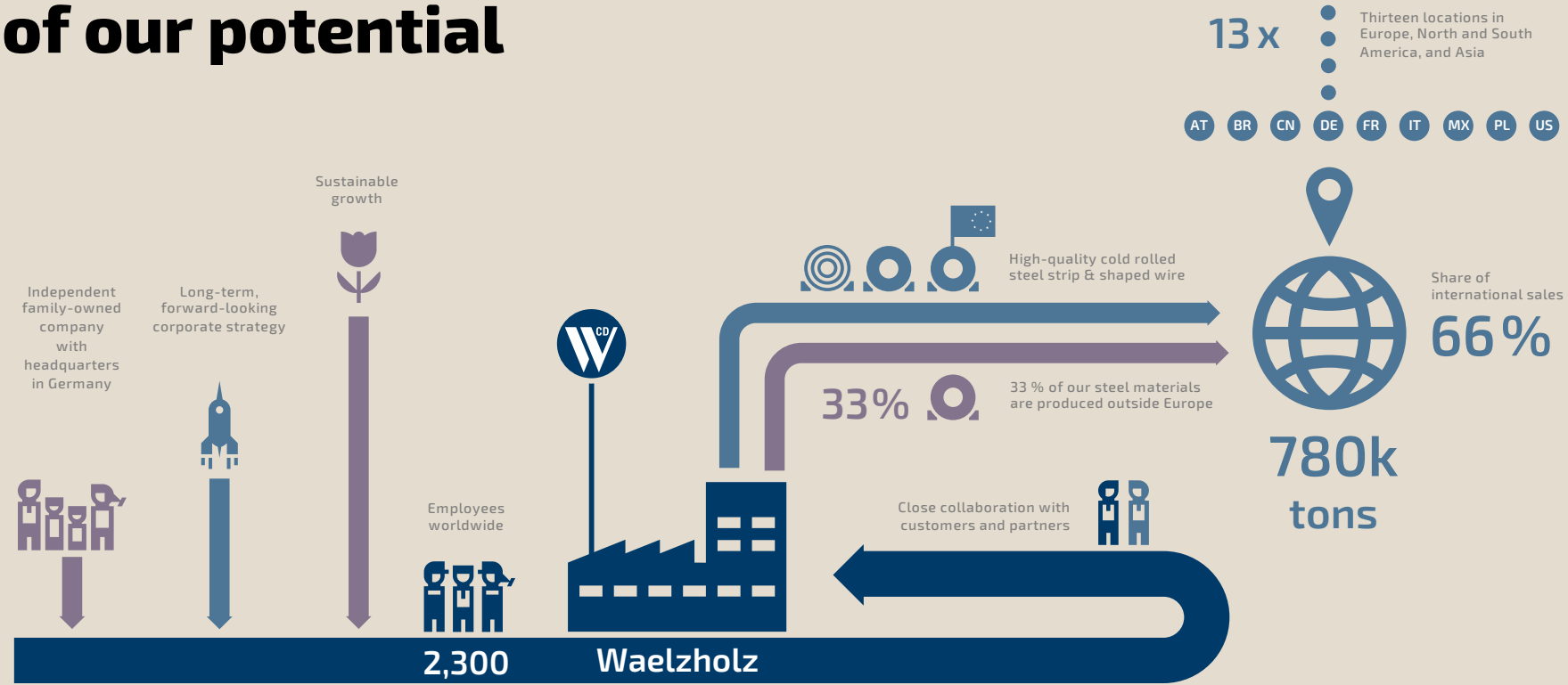


Data & facts

Well-positioned

Today, 2,300 employees at thirteen locations worldwide produce more than 780,000 tons of high-quality cold rolled steel strip and profiles. Together, these factors add up to our most important corporate value: independence.

The structure of our potential



Ready for your future

Waelzholz develops and manufactures top-quality materials and enhances them by offering customized services worldwide. In this process, our goal is always to provide customers with innovative ideas for their products and processes. This is how we can specifically support them in their future projects.

We're ready.

