



# Steel construction industry

Your partner for innovative solutions

Josef Elmer, Key account manager

voestalpine Steel Division  
[www.voestalpine.com/steel](http://www.voestalpine.com/steel)

**voestalpine**  
ONE STEP AHEAD.



What we have to offer

## Customer-oriented partnerships and tailored solutions in the steel construction industry

Our thermomechanically rolled steel grades and weather-resistant structural steels set benchmarks with respect to their best processing properties and consistently high quality. They are the key to efficient steel structures and provide potentially high savings in welding and maintenance. Industry-specific material and manufacturing expertise, comprehensive preprocessing possibilities, reliability and relationships based on trust make us a trusted partner to the European steel construction industry.

We provide a high level of quality and problem-solving expertise:

- Comprehensive technical material and application consulting
- Customer-specific product solutions and development partnerships
- Professional project management
- Comprehensive preprocessing tailored precisely to your requirements
- Customized services
- Powerful logistics and just-in-time delivery
- Experts and sales offices near you

# Thermomechanical rolling for optimized welding properties

We specialize in thermomechanical rolling with accelerated cooling. The thermomechanical rolling process leads to a fine-grained structure that provides high strength, high toughness levels and good cold formability. The very low carbon content and the low carbon equivalent result in excellent welding properties. High toughness in the heat-affected zone (HAZ) and the low propensity toward cold cracking are critical to high-quality weld joints.

## **TM steels made by voestalpine are manufactured with**

- High-purity steel (low sulfur, phosphorous and hydrogen content)
- Very low carbon content and low carbon equivalent (CE)
- Micro-alloys
- Targeted process and quality assurance during steelmaking, rolling and accelerated cooling

## **Processing advantages resulting from the use of TM steels**

- Elimination of or low preheating during welding
  - Reduced manufacturing costs
  - Improved working conditions for the welder
- Secure weld joints
  - Lower error rates during welding
  - Elimination of stress-relief annealing after welding
- Welding with high heat input
  - Fewer welding passes
  - Less welding time
  - Lower welding costs
- Simple surface cleaning as a result of thin and homogeneous layer of scale



# Comprehensive and customized preprocessing

Our preprocessing specialists combine material and preprocessing expertise in a unique way. Our customers in the steel construction industry enjoy the benefits of high-quality slit strip, cut-to-length sheets and cut shapes as well as ready-to-install components that are customized to their individual requirements. We are known for our high quality, innovation, loyalty to deadlines, flexibility and superb service.

## Broad spectrum of preprocessing possibilities for

- Components up to 18 m in length, 4 m in width and a maximum of 30 t in weight
- Additional steps such as sand blasting and straightening
- Chamfering and weld joint preparation with the narrowest tolerances through the implementation of robot systems and the most modern plasma technologies

## Essential advantages for our customers:

- Support in steel grade selection and welding processes
  - Optimized component dimensions
- Tailored logistics and short-notice deliveries
  - Coil storage for hot-rolled steel strip from 6 to 20 mm in thickness
  - Comprehensive storage of heavy plates as raw material
  - Short lead times resulting from high manufacturing capacities
- Comprehensive assistance provided by specialists throughout the entire project
  - Provision of software such as Sharepoint
- High-level accuracy, consistency and reliability
  - Comprehensive documentation of material requirements (ultrasonic and tensile testing)
  - Material certificates issued by renowned classification societies and certification organizations



# Customized solutions and time-tested products in voestalpine quality

alform® steels are characterized by substantial weight and cost savings resulting from best formability, weldability and high strength. With our weather-resistant structural steels, you save maintenance expense as well as costs for a corrosion-resistant coating. A comprehensive spectrum of high-quality products and professional project management round off our portfolio for the steel construction industry.

## alform®

### Excellent cold formability

- Excellent cold formability in the high-strength range
- High-strength grades provide higher lifting capacities and payloads
- Comprehensive cost reduction through weight savings
- Excellent weldability based on low carbon content

## Weather-resistant structural steel

### Lower maintenance costs

- The special alloy forms a thick protective layer.
- Solid corrosion protection
- Elimination of corrosion-resistant coating and maintenance
- Available also as high-strength steel



# Customized solutions for the steel construction industry

- alform®
- Weather-resistant structural steel

You will find our entire product range and further information about our solutions for the steel construction industry on the Internet at [www.voestalpine.com/steel](http://www.voestalpine.com/steel).

## Heavy plates

- Comprehensive portfolio of high-quality grades
- Wide spectrum of dimensions with plate thicknesses up to 200 mm

## Hot-rolled steel strip

- Highest product quality and best workability
- Broad spectrum of application-specific and optimized grades

## Cold-rolled steel strip

- Universal use, even in applications with high surface demands
- Highly uniform mechanical properties

## corrender

- Excellent cathodic corrosion protection
- Increased process reliability and excellent processing properties

## Hot-dip galvanized steel strip

- Wide range of applications, even in visible parts
- Best workability and suitable for the most demanding forming requirements



alform®

## alform®

Excellent cold formability

alform® steels are thermomechanically or normalized hot-rolled fine grained steels with minimum yield strengths of 180–700 MPa and excellent cold workability.

We offer alform® steels as hot-rolled steel strip in coils, slit strip, cut sheets or as heavy plates. alform® steels find their applications wherever high workability and weldability coupled with high strength and weight savings are in demand. These steels are primarily used in applications such as steel structures, bridges, pressure conduits, vehicle manufacturing and crane construction.

### Cost reduction through weight savings

Utilization of the higher yield strength of high-strength fine-grained steels as opposed to conventional structural steels results in lower cross-sections. This leads on the one hand to cost savings in lower component weights as well as reduced expenditures for transports, assembly, foundations, component manufacturing, especially in welding as a result of minimized seam cross-sections.





#### Excellent weldability

High-strength alform® steels as opposed to standard steels are characterized by comparatively high strength, very good cold forming properties and small edge radii. They also offer high toughness, excellent weldability, pre-heating either reduced or completely eliminated and clean surfaces resulting from fine and homogeneous secondary scale. The low degree of cold cracking and high degree of toughness in the welding seam result in the highest safety standards in welded structures.

#### Comprehensive advantages

High-strength alform® steels provide comprehensive advantages:

- Higher lifting capacities and payloads
- Optimized workability
- Comprehensive cost reduction
- Improved environmental compatibility

voestalpine offers a wide range of dimensions in thermomechanically rolled fine-grained steels: Depending on the steel grade, hot-rolled strips are supplied in thicknesses of 15 mm and widths up to 1600 mm or heavy plates in thicknesses of 100 mm, widths up to 3800 mm and lengths up to 18.7 m.





## Weather-resistant structural steel

### Lower maintenance costs

Weather-resistant structural steels provide excellent corrosion protection.

Steel structures are usually protected by a corrosion-resistant coating. This is associated with substantial initial painting and re-coating costs.

### High-density oxide layer delays corrosion

The alloying of small amounts of phosphorus, copper, nickel, chromium or molybdenum leads to the formation of a protective layer on weather-resistant steel outdoors. This layer protects the steel from further corrosion. Weather-resistant structural steels thus provide cost advantages in two different ways:

### Elimination of paint coating and maintenance

#### ■ No anti-corrosion coating

Weather-resistant structural steel does not require a corrosion-resistant coating to protect it or the steel structure from rust.

#### ■ No maintenance required

Recoating (normally required in other applications for corrosion protection) is not necessary.

Weather-resistant structural steels are used primarily in steel frame superstructures, bridges and vehicle construction. The following basic rules must be followed in structural steel applications:

- Avoid retained humidity through structural solutions
- Do not use in applications close to the ocean (chloride atmosphere)
- Provide higher thicknesses in chemically aggressive atmospheres



### High strength and resistance to weather

voestalpine supplies weather-resistant structural steels according to EN 10025-5 as hot-rolled steel strips and as heavy plates in thicknesses of 90 mm and widths up to 3950 mm. We have also developed weather-resistant structural steel with a minimum yield strength of 420 MPa in thermomechanically rolled and annealed condition. The higher strength leads to additional cost savings through weight reduction.





## Heavy plates

### Comprehensive range of grades

Our wide range of high-quality heavy plates includes high-strength, ultra-high-strength and wear-resistant grades, including thermomechanically rolled fine-grained structural steels, general structural steels as well as shipbuilding, case-hardening and heat-treatable steels. Our heavy plates feature a wide spectrum of thicknesses ranging up to 200 mm and plate widths up to 3950 mm. The plates are characterized by high steel quality, narrow analysis limits and low degrees of scatter in mechanical-technological parameters and best processing properties during welding, chamfering and cutting.

## Hot-rolled steel strip

### Wide range of products

Hot-rolled steel strip made by voestalpine is designed to meet every customer requirement. Tailored to the specific requirements of our customers, the product portfolio ranges from mild steels to ultra-high-strength steels for highest-strength applications. Hot-rolled steel strip is supplied in either pickled or non-pickled condition upon request. A number of alloying and rolling strategies make it possible for us to supply optimized steels customized to individual specifications. A wide range of case-hardening and heat-treatable steels round off our portfolio.

## Cold-rolled steel strip

### Best surface appearance

Excellent surface quality, best deep-drawing properties and perfect welding results make cold-rolled steel strip an all-round product and allow complex designs practically without limitations. The steel construction industry particularly depends on the good processing properties and excellent product quality of cold-rolled steel strip, which guarantees excellent forming, coating and welding properties. Enameling steels can be produced upon request.

# corrender

## corrender

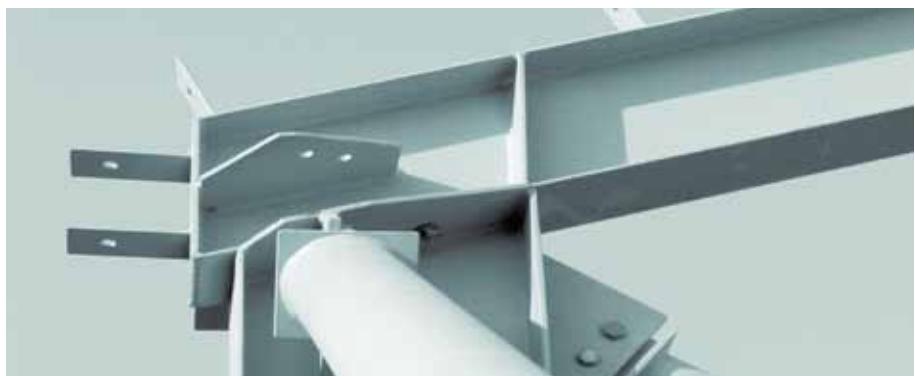
### A new perspective

corrender is the next evolutionary step in hot-dip metal-coated products. A powerful protective layer with numerous advantages is created through alloying small amounts of magnesium and aluminum in the zinc bath. The coating has numerous advantages in processing and corrosion protection. The corrosion protection of corrender is significantly higher than that of conventionally galvanized steel strip. Because of the substantially improved protective properties of corrender, the metallic coating layer (zinc) thickness can be significantly reduced while maintaining the same level of corrosion protection. corrender opens new potential for higher efficiency and thus reduces production costs. The low level of zinc abrasion, excellent deep-drawing properties and very good formability results in special processing properties that lead to considerable increases in production and processing efficiency.

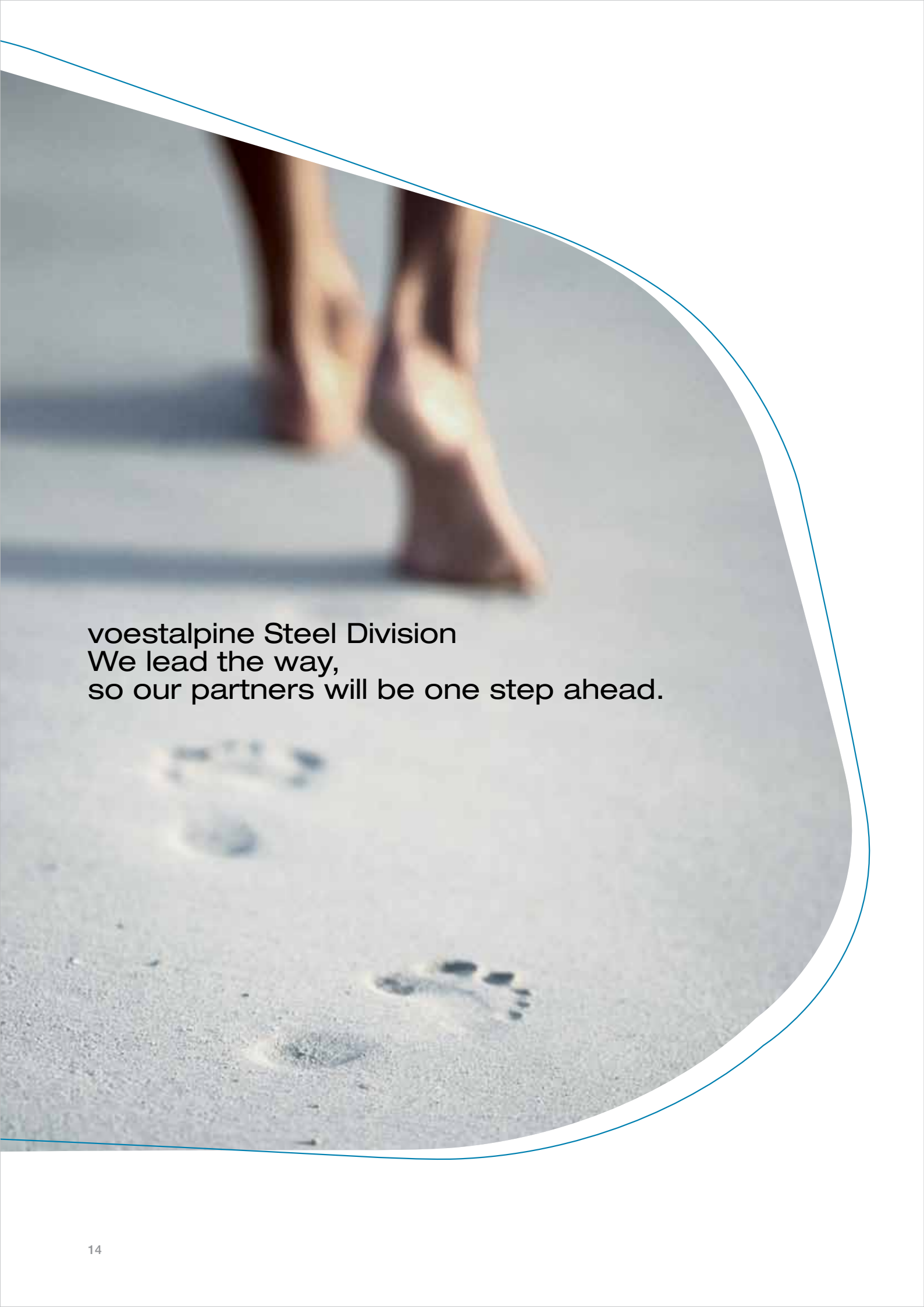
## Hot-dip galvanized steel strip

### As flexible as our customers

Hot-dip galvanized steel made by voestalpine is characterized by high corrosion resistance, excellent working properties and a wide spectrum of applications. Our comprehensive material portfolio and surface qualities place us in a position to optimally meet requirements such as good forming properties and excellent component quality.



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voestalpine Steel Division  
We lead the way,  
so our partners will be one step ahead.

# We talk solutions

That is why we will never be satisfied with excellent product quality alone.

Comprehensive services and unlimited dedication to the challenges of our customers are at the core of our philosophy.

Highly specialized and closely linked, the companies of the voestalpine Steel Division have one common goal, which is providing our customers with optimized and individualized packages of benefits in the steel construction industry.

## Development advantages

- Comprehensive material and technology expertise
- Technical consulting and support, including application issues
- In-house research and development center
- Networking with international research institutions and universities

## Precisely tailored to your needs

- Precision cutting for the production of high-quality slit strips and cut shapes
- Short manufacturing times and individualized production planning
- Comprehensive Product Selection
- Loyalty to delivery deadlines and online order tracking

## Individualized and punctual

- Tailored logistics strategies
- Just-in-time delivery

## Always close to you

- Competent contacts directly on site: Sales organizations and offices in more than 20 countries

## A strong partnership

- Close collaboration with our Group companies in order to create unique expertise and the technological leadership of our products in the steel construction industry
- You will find more detailed information about additional products made by voestalpine for the steel construction industry at
  - Böhler Welding Group ([www.boehlerweldinggroup.com](http://www.boehlerweldinggroup.com))
  - voestalpine Krems GmbH ([www.voestalpine.com/krems](http://www.voestalpine.com/krems))

## Technically more advanced. Successful together. voestalpine Steel Division – the partner you can trust.

High-quality materials are the basis for our products. We strive to be the best partner for our customers and want to provide them with the best-possible solutions. We focus our expertise on two aspects:

The personal aspect, with dedicated and highly competent employees

The technical aspect, with high-quality methods, products and services

The companies in the voestalpine Steel Division and their employees understand partnership to be the following:

- Understanding for their customers' business
- Expertise and reliability
- Responsibility for satisfactory project completion
- Partnerships based on trust

Many years of successful partnerships with our customers prove our point.

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