



COLD-ROLLED STEEL STRIP

Technical terms of delivery
1 September 2019



PREMIUM QUALITY
WITH REDUCED
CARBON FOOTPRINT

These general terms apply to all cold-rolled steel strip supplied by companies in the voestalpine Steel Division. Please use the following link to find a list of the companies affiliated with the Steel Division:

www.voestalpine.com/stahl/en/Companies

The names of companies in the voestalpine Steel Division are referred to simply as **voestalpine** in this document.

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INTRODUCTION

voestalpine operates one of Europe's most modern steelmaking facilities in Linz. Each of the modern lines required for the production of high-quality steel strip is located next to related facilities and is highly integrated into the works.

Our goal is to innovate and go beyond standard steels, to continually offer high-quality products. The most modern manufacturing technologies, continuous quality control systems as well as intense research and development guarantee optimum product quality.

These technical terms of delivery provide information on the ordering and processing of **cold-rolled steel strip**. Please direct any of your questions to your responsible sales personnel or technical specialist at voestalpine.

QUALITY MANAGEMENT

voestalpine is a quality leader in a challenging market environment, and it has become the company philosophy to meet the justified expectations and requirements of both the market and the customer with respect to every possible aspect of quality. Comprehensive quality management is a central component of the company strategy. In addition to this comprehensive quality management system, production monitoring using the most modern testing systems is also a necessity. These systems are inspected on a regular basis by external and independent agencies.

COMPREHENSIVE QUALITY MANAGEMENT

The voestalpine companies meet the highest standards of quality management and are certified pursuant to **Lloyd's Register QA Ltd.** in the United Kingdom as well as **ISO 9001** and **IATF 16949**.

This has been confirmed by numerous customer awards presented for best quality performance. Focus has been continually on this pursued path as well as on consistent implementation of all quality standards.

STATE-OF-THE-ART TESTING TECHNIQUES

voestalpine uses the most modern testing techniques and methods, laboratory information and management systems equipped with state-of-the-art technologies. The technical expertise of our testing and inspection laboratories is certified in accordance with international standards, e.g. **ISO/IEC 17025** and **ISO/IEC 17020**, and is accredited by Austrian national standards.

STEEL GRADE OVERVIEW

All steel grades named in **EN 10130**, **EN 10209**, **DIN 1623**, **EN 10132-2**, **EN 10132-3**, **EN 10132-4**, **EN 10268**, **EN 10338** or **VDA 239-100** are available. Customer specifications or special orders are subject to special agreement between the customer and voestalpine and must be included in written form in the order. Please ask for more detailed information from your voestalpine sales contact or technical customer service representative. Please use the following link to find further information on cold-rolled steel strips and dimensions: www.voestalpine.com/stahl/en

STRUCTURAL STEELS

The structural steel product family is defined by minimum yield strength, tensile strength and total elongation requirements. The alloy is based on a low-carbon strategy, whereas the strength can be adjusted by adding solid-solution-strengthening alloys. Structural steels are suitable for simple forming operations such as folding, edging and profiling.

MILD STEELS

Differentiation is made between LC and ULC/IF steels in the mild steel product family. Their field of application ranges from simple structural members to complex pressed parts that meet the highest forming requirements. The alloy design is based on a low-carbon strategy for moderate demands on forming properties. An interstitial-free (IF) alloy design is used to meet the highest forming requirements. Interstitially dissolved elements such as carbon and nitrogen are stabilized by added niobium and/or titanium. ULC/IF steels provide the best forming properties with respect to deep drawing because of their low yield strength, high total elongation and high *r* values. This property profile makes ULC/IF steels suitable for applications with high deep drawing demands and for creating visible parts with an attractive surface appearance.

ENAMELING STEELS

Enameling steels belong to the family of mild steels. Differentiation is made here as well between LC and ULC/IF steels. Their field of application ranges from simple structural members to complex pressed parts that meet the highest forming requirements. The alloy design is based on a low-carbon strategy for moderate demands on forming properties. An interstitial-free (IF) alloy design is used to meet the highest forming requirements. Interstitially dissolved elements such as carbon and nitrogen are bound by added niobium and/or titanium. ULC/IF steels provide the best forming properties with respect to deep drawing because of their low yield strength, high total elongation and high *r* values.

Processing parameters must be continuously monitored and kept within narrow tolerances in order to achieve the special characteristics of these steels as required by the enameling process. Enameling steels must feature sufficient hydrogen absorption and a special chemical composition that differs from that of conventional mild steels.

HIGH-STRENGTH LC STEELS

High-strength steels are characterized by minimum yield strength, tensile strength and total elongation requirements. The alloy is based on a low-carbon strategy, whereas the strength can be adjusted by adding solid-solution-strengthening alloys. These steels exhibit an especially high degree of regularity in their mechanical properties and are preferred for bending and profiling processes in the fitting, radiator, barrel, household appliance and furniture industries.

CARBON STEELS

Carbon steels as cold-rolled strip for direct processing or repeated cold rolling are typically intended for heat treatment in order to achieve the desired processing and component properties. They are used in applications in which it is important to strike an optimum balance between hardness and toughness.

MICROALLOYED STEELS

Microalloyed steels (HSLA = high strength low alloyed) are members of the product family of conventional high-strength steels. They feature a wide variety of yield strength levels and cover the upper strength range of conventional high-strength steels. Microalloyed steels are characterized by a high ratio of yield to tensile strength, good cold formability and good weldability. The individual strength classes are adjusted essentially by adding microalloying elements such as niobium, titanium and vanadium. These alloying elements can be added individually or in combination and lead to increased strength through grain refinement and precipitation hardening. Carbon additions and solid-solution strengthening are also used to increase the strength. As a result of their wide range of strength levels, microalloyed steels offer the possibility of optimally selecting the materials to conform to component requirements and are thus very well suited to the manufacture of structural and chassis parts.

CARBON-MANGANESE STEELS

Carbon-manganese steels belong to the product family of conventional high-strength steels. They are characterized by intermediate tensile strength and a high total elongation. Their strength is achieved through high carbon content and solid-solution-strengthening elements, particularly manganese. Adding niobium and/or titanium as alloying elements leads to precipitation hardening and grain refinement. Carbon-manganese steels are especially suitable for the production of structural and reinforcing components in the automotive industry.

BAKE-HARDENING STEELS

Bake-hardening steels belong to the product family of conventional high-strength steels. Based on their various strengths, these steels provide additional increases in yield strength during the heat treatment applications generally used in automotive painting processes. This increase in yield strength is achieved by adjusting the right amount of dissolved carbon in the steel. Bake-hardening steels are characterized by excellent forming properties, higher strength in the finished part following the coating process as well as high dent resistance and strength. This excellent property profile predestines bake-hardening steels for the production of structural components and exposed panels. They contribute substantially to the design of the automobile.

HIGH-STRENGTH IF STEELS

High-strength IF (interstitial-free) steels belong to the product family of conventional high-strength steels. They feature the best forming properties among the conventional high-strength steels as a result of their high level of work hardening, lack of a pronounced yield strength, high total elongation and a high r value. The alloy is based on a vacuum-decarburized IF strategy that is stabilized with titanium and/or niobium. The individual strength classes are achieved through adding solid-solution-strengthening alloying elements such as manganese, phosphorus and/or silicon. Their excellent property profile makes high-strength IF steels predestined for complex component applications with high demands on deep-drawing suitability and strength.

DUAL-PHASE STEELS

Dual-phase steels are part of the ahss classic product line of voestalpine in the field of ultralights and are characterized by excellent physical properties, including low yield strength, high work hardening, high tensile strength as well as high uniform and total elongation. The microstructure of dual-phase steels consists primarily of ferrite and martensite and, as its strength increases, can contain bainite, tempered martensite and residual austenite. The finely tuned microstructure achieves a balance between deep-drawing capacity and resistance to edge cracking, which is why these steels are ideal for applications in complex structural components. The balance between strength, formability and weldability of dual-phase steels leads to enormous potential in light-weight design while also achieving improved crash performance.

COMPLEX-PHASE STEELS

Complex-phase steels are part of the ahss classic product line of voestalpine in the field of ultralights and are characterized by high yield ratios at high strength, very high resistance to edge cracking and excellent bending properties. The finely tuned multiphase microstructure consists of martensite, bainite, ferrite and tempered martensite, whereas the occurrence of hard phases rises as the strength class increases. Complex-phase steels were specially developed for roll-profiling, bending and edging processes. These steels have proven themselves in industrial-scale serial production and are recommended for innovative light-weight automotive applications such as stiffeners, sills, door impact bars, seat mounting rails and auto chassis components. As a result of this balanced property profile, complex-phase steels are predestinated for applications containing crash components with a high potential for light-weight design.

DUAL-PHASE HIGH-DUCTILITY STEELS

Dual-phase high-ductility steels are an innovation of voestalpine in the field of ultralights. In contrast to classical dual-phase steels, dual-phase high-ductility steels feature significantly improved formability with respect to deep drawing. Depending on the strength class, the multiphase microstructure of dual-phase high-ductility steels consists of certain amounts of ferrite, martensite, bainite and residual austenite. This results in high resistance to edge cracking and excellent crash behavior. Based on their unique properties, dual-phase high-ductility steels make a substantial contribution to innovative light-weight design in safety-related and crash-relevant components.

COMPLEX-PHASE HIGH-DUCTILITY STEELS

Complex-phase high-ductility steels are an innovation of voestalpine in the field of ultralights. They are characterized by substantially improved forming properties when compared to classical complex-phase steels. The precisely defined, very fine and high-strength microstructure leads to high yield strength, high resistance to edge cracking, improved deep-drawing characteristics and unique bending properties. The microstructure consists of bainite, martensite, tempered martensite and residual austenite. Based on their unique properties, complex-phase high-ductility steels make a substantial contribution to innovative light-weight design in safety-related and crash-relevant components.

TRIP STEELS

TRIP (transformation-induced plasticity) steels are part of the ahss classic product line of voestalpine in the field of ultralights. They maintain high tensile strength while achieving excellent deep-drawing properties through extraordinary uniform and total elongation. The microstructure consists of a ferritic matrix with embedded phases of bainite and residual austenite. The residual austenite is metastable and transforms during plastic deformation to martensite. This strain-induced transformation makes it possible for TRIP steels to achieve excellent deep-drawing properties and predestines them for the manufacture of complex components with pronounced deep-drawing capacity. As a result of their high crash energy absorption, TRIP steels are ideal for safety-related and crash-relevant structural components.

MARTENSITIC STEELS

Martensitic steels made by voestalpine fall into the ultralights field of expertise. The property profile of martensitic steels is characterized by highest strengths without any compromise of excellent formability during bending and roll forming. The very high resistance to edge cracking during the forming of stamped edges is a result of the single-phase martensitic microstructure. The special annealing and cooling technologies of voestalpine result in excellent strip flatness in martensitic steels. The unique property profile of martensitic steels makes them highly suitable for applications in light-weight automotive design and the manufacture of safety parts and crash-relevant components.

SURFACE

SURFACE TYPES

Cold-rolled steel strip is available featuring several different surface finishes (supply in accordance with **EN 10130** and **VDA 239-100**).

- » Normal surface (A) or unexposed (U)
- » Best surface (B) or exposed (E)

Cold-rolled enameling steels are subject to the provisions of **EN 10209**.

Please ask for more detailed information from your voestalpine sales contact or technical customer service representative.

SURFACE FINISH

The surface quality can be **rough**, **matt** or **smooth**. Products are delivered in matt quality if not otherwise specified in the order. The mean roughness values in the following table correspond to the three surface qualities above:

Finish	Mean roughness value Ra [μm]
Smooth	0.9 max.
Matt	0.6–1.9
Rough	> 1.6

Average centerline height requirements deviating from values indicated in the tables must be indicated in the order. Deliveries with narrower Ra values are available upon request.

A cutoff of 2.5 mm applies when determining the mean roughness value Ra according to the provisions of **EN 10130** and **EN 10049** (standard length of 12.5 mm).

SURFACE TREATMENT

Cold-rolled steel strip is available only in oiled condition as a result of heightened levels of corrosion during transport and stockkeeping. Delivery in non-oiled condition is permitted only in exceptional cases or when the customer explicitly accepts corrosion risks from the time the material is made ready for dispatch.

OILED (O)

As a rule, oiling is performed using an anticorrosive oil which can be removed with alkaline or other conventional cleaning agents. Depending on the stress during treatment, one of the following types of oil is applied:

- » Slightly oiled, roughly 0.7 g/m² per side
- » Oiled, roughly 1.2 g/m² per side
- » Heavily oiled, roughly 1.6 g/m² per side

Should no other data be provided at the time of the order, 1.2 g/m² will be applied per side. The originally homogeneous oil film will invariably be distributed across the length and width of the strip, and some oil from heavily oiled strip will be shed from the surface during transportation and storage. This is unavoidable. No liability is assumed for corrosive damage of material that is delivered in unoiled condition.

ORDER QUANTITIES AND MANUFACTURED UNITS

COLD-ROLLED STEEL AS WIDE STRIP (COIL)

- » The minimum order quantity per line item is one coil production unit (depending on the steel grade, between approx. 18 kg/mm and approx. 20 kg/mm strip width) and/or its multiple.
- » It is possible to subdivide these coil units into smaller coils.
- » The target is fulfillment of customer orders with respect to the requested coil weight. It is permissible to fall below the ordered coil weight by up to a maximum of 30%.
- » The weight tolerance of line items whose ordered weight exceeds 100 tons is plus/minus a typical coil production unit typical for this item.

COLD-ROLLED STEEL AS SLIT STRIP OR CUT SHEETS

- » The minimum order quantity per line item is one coil production unit, which ranges roughly between approx. 18 kg/mm and approx. 20 kg/mm strip width and/or its multiple, depending on the steel grade.
- » This coil production unit can be subdivided.
 - » Possible in small coils for slit strip, e.g. 18, 9, 4.5 kg/mm
 - » Cut sheets and tailored blank packages can be divided into units ≤ 10 tons
- » Overdelivery and underdelivery is permitted up to $\pm 10\%$.

WEIGHTS

- » The maximum weight of steel strip is 32 tons per coil.
- » The maximum weight per package of cut sheets is 6 tons.

All available steel grades and dimensions can generally be supplied with a specific coil weight of between approx. 18 and approx. 20 kg/mm strip width.

AVAILABLE DIMENSIONS

With regard to geometric properties, the tolerances of all cold-rolled steel strips produced by voestalpine are subject to the provisions of **EN 10131** and **VDA 239-100**. Limited tolerances and other parameters not contained in the standard are subject to special agreement between the customer and voestalpine and must be included in written form in the order. To the extent not agreed otherwise, the ordered thickness includes symmetrical thickness tolerances.

Please find more detailed information about available dimensions in the product data sheets of the respective steel grade group or use the following link to access the product information portal: www.voestalpine.com/pro

COLD-ROLLED STEEL AS WIDE STRIP (COIL)

Product variant	Thickness [mm]	Width max. [mm]	Outer diameter max. [mm]	Inner diameter [mm]
Cold-rolled steel strip	0.40–3.00	1600	approx. 2000	approx. 600 *

Available combinations of widths and thicknesses vary depending on the steel grade.
* Indicated references are standard values.

COLD-ROLLED STEEL AS SLIT STRIP

Product variant	Thickness [mm]	Strip width max. [mm]	Outer diameter max. [mm]	Inner diameter [mm]
Cold-rolled steel strip	0.40–3.00	10–1600	approx. 700–2200	approx. 500/600 *

Available combinations of widths and thicknesses vary depending on the steel grade.
* Indicated references are standard values.

COLD-ROLLED STEEL AS CUT-TO-LENGTH SHEETS

Product variant	Thickness [mm]	Width max. [mm]	Length max. [mm]	Package weight max. [t]
Cold-rolled steel strip	0.40–3.00	210–1600	approx. 200–6700	6

Available combinations of widths and thicknesses vary depending on the steel grade.

INSPECTIONS

MATERIAL INSPECTION

Material test certificates must be requested at the time of the order in accordance with the provisions of **EN 10204**. With respect to test units, sampling and the performance of inspection tests, the stipulations contained in the respective order standards shall apply. Specific requests are subject to special agreement between the customer and voestalpine and must be included in written form in the order.

ENAMEL INSPECTION

The provisions set forth in **EN 10209** shall apply. Tests with fish-scale-sensitive enamels as standard output controls are conducted upon request. Conditions for pretreatment and enameling in performing these tests are subject to agreement between the manufacturer and the customer. The definitions set forth in **EN 10209** apply to the guaranteed limit values of hydrogen permeability.

RETESTS

The provisions of **EN 10021** shall apply.

LABELING

Standard labeling consists of a tag per package unit and indicates the following:

- » Supplier
- » Recipient
- » Order number
- » Strip number (identification number)
- » Heat number
- » Part or package number
- » Steel grade
- » Dimension
- » Number of units
- » Weights
- » Date of production

Additional data or marking directly on the material (coil or package marking) is subject to agreement.

TECHNICAL INSPECTION OF INQUIRIES AND ORDERS

ORDERS BASED ON INTERNATIONAL STANDARDS

The customer shall specify all applicable standards (such as EN10130 and EN10131) in the inquiry or order. The parallel specification of several standards (such as **EN10130** and **VDA 239**) is expressly excluded. All order details set forth in these voestalpine Technical Terms of Delivery shall be provided in full by the customer. In the event that the required order details are not provided in full by the customer, the standard values set forth in these Technical Terms of Delivery, e.g. surface roughness, oiling, thickness tolerances etc., shall be applied to the order. Any limitations pertaining to an international standard shall be subject to prior special agreement between the customer and voestalpine and shall be included in the order in written form.

ORDERS BASED ON A CUSTOMER STANDARD OR CUSTOMER SPECIFICATION

The customer specifies all pertinent standards and specifications at the time of the inquiry or order and provides the sheet metal data card for the required dimensions. Parallel specification of a customer standard AND an international standard is expressly excluded. The customer shall be informed by voestalpine of any restrictions or objections that arise during the technical review of requested standards. The customer shall sign and return the technical review, including any restrictions and objections, to voestalpine in the event of customer acceptance. Should the customer reject the technical review in part or in full, it will be necessary for the customer and voestalpine to negotiate a standard acceptable to both parties. In the event that the customer does not expressly reject the technical opinion and takes further steps (material order, request for trial sample etc.), the technical opinion shall be deemed as accepted by the customer and voestalpine shall not accept any subsequent complaint nor recognize any claim of deviation from the customer specification.

ADDITIONAL INFORMATION

PROCESSING INFORMATION

The product properties described herein are applicable to the extent that usage and processes are in accordance with the pertinent standards and the technical terms of delivery published by voestalpine.

Should the customer have any special requests or required any limitations in order to guarantee functionality and production of the product, this shall be subject to special agreement between the customer and voestalpine and must be indicated in written form in the order. Examples of such requirements are as follows:

- » Limited tolerances
- » Special mechanical properties or specifications
- » Special applications (safety parts, oil-filter cartridges or similar)
- » Subsequent processing steps (strip coating, heat treatment)
- » Special tests

As a standard, the welded joint is marked with a punched hole before and after the seam. Other marking methods are subject to individual agreement. The absence of weld seams is subject to special written agreement as part of the order.

Any special further processing requirements must be included by the customer in written form in the order for the prematerial.

In the event that recurrent defects become apparent during the unwinding of a coil or a slit coil, suggesting that the entire coil or slit coil will result in greatly increased scrap during processing, the processor shall discontinue use of the coil and notify the supplier immediately.

Steel strip absorbs tension when it is coiled, and this can lead to deviations in strip flatness when it is uncoiled (roll bending, chuck bending etc.). These deviations usually do not interfere with strip processing. Customers who require completely flat strip must employ a tension leveler that is suitable for the respective material.

The following brief instructions are intended to provide assistance in the processing of cold-rolled steel strip. Please ask for more detailed information from your technical customer service representative at voestalpine.

FORMING

Irrespective of the particular grade, cold-rolled steel strip can be used for conventional forming processes such as edging, bending, curling, flanging, stamping, crimping, roll-profiling, stretch forming and deep drawing. The selection of materials depends on the demands on formability final geometry and workpiece function. Steels in the higher strength range exhibit more pronounced elastic recovery after forming.

JOINING

All conventional thermal and mechanical joining technologies as well as adhesive technologies can be used as methods of connecting. All steels are especially suitable for welding in accordance with conventional industrial welding technologies. Slight shifts in the optimum welding range can occur during resistance spot welding as a result of the chemical composition of the various steels. The electrode clamping forces must be adapted to the respective strengths. Intended gas-fusion welding must be indicated in the order.

Cold-rolled enameling steels can be welded with the same welding parameters used for methods tested for conventional cupping steels. However, the used welding process must be adapted to the enameling methods in order to avoid enameling defects in the area of weld seams or spots.

SUITABILITY TO THE APPLICATION OF SURFACE COATINGS

All products are suited to surface coating. Materials are to be pretreated by the processing company. The intention of metallic coating on metal sheet must be specially indicated in the order.

CONSULTATION, DEFINITION OF SUBSTRATE FOR COLD-ROLLED STEELS FOR ENAMELING

Consultation with your technical expert at voestalpine is mandatory in the event that thermal treatment is to be performed that deviates from the conventional single-fire enameling process (including intermediate annealing).

Precise knowledge of the enameling methods, all accompanying processing parameters (enameling temperature, furnace dwell time, type of enamel) and pretreatment routes are of substantial importance. Our technical experts in quality management and research and development will be pleased to provide you with additional information.

MARKING

voestalpine reserves the right to deliver marked or unmarked material in the event that the customer when placing the order does not provide any explicit information with respect to marking.

PACKAGING

The initial inner and final outer coil windings are considered to be packaging and are not representative of the properties in the remaining windings of the coil.

The desired packaging type, package or coil weight and additional requests with respect to packaging, labeling and loading are subject to special agreement between the customer and voestalpine and must be included in written form in the order.

TRANSPORT AND STORAGE

- » Transport in dry condition
- » Store in a dry environment and protected from the weather, preferably indoors in a suitable warehouse
- » Protect against condensation (avoid excessive temperature differences)
- » Use proper supports
- » Avoid local pressure loads
- » Keep storage times short

The material must be protected against any corrosion from salts, acids, alkaline fluids or other substances containing such.

All cold-rolled coils are packaged for transport in order to minimize the risk of rust formation. Proper transport procedures and correct storage until the coils are unpacked are also measures that must be taken to avoid the formation of rust. Temperature changes during transportation and storage are critical. Coils take approximately four days to completely assume a new ambient temperature. During this time they are subject to the risk of condensate formation. The lowest risk is reached as soon as the coils have completely assumed the new temperature.

In the event that the customer discovers that packaging has become wet, the coil shall be immediately unpacked and wiped dry. Quick action is required in such a case. Before it is processed, the material shall be stored in a dry and well ventilated environment. In every such case, the responsible technical specialist at voestalpine shall be contacted immediately in order to be able to initiate appropriate measures.

The supplied material, including packaging, shall be checked for product quality (identification, packaging and product condition) by the recipient of the material upon arrival. In the event that material damage or any inadmissible characteristic is discovered in the material at the time it is inspected upon arrival, this shall be documented as accurately as possible in the corresponding freight documentation:

- » Trucks: CMR
- » Railway CIM: Assessment of current condition by responsible railway company
- » Waterborne vessels: Bill of lading/deletion log

Anomalies encountered on the means of transport or in the course of unloading the material shall be documented using photographs sent to the responsible contact person at voestalpine. Such documentation excludes the possibility of the material being damaged by the consignee in the warehouse and provides evidence that the delivered material was damaged before it arrived.

Temporary surface protection (oil) is applied to cold-rolled steel strip at the end of the production line. This surface protection measure guarantees temporary resistance to corrosion during transport and storage. The protective effect is only temporary (valid for a period of six months) and is subject to proper storage, transport, loading and packaging in accordance with VDEh Data Sheet 114 and VDEh Data Sheet 130. (The material shipment date ex works shall apply.) Warranties shall not apply to any corrosion on non-surface-protected material.

The actual duration of protection depends on atmospheric conditions (particularly those in the warehouse). The surface protection applied in the production line may have an effect on subsequent processes such as painting or phosphating. The customer is responsible for verifying suitability of the respective surface protection for each application.

GENERAL TERMS OF SALE

To the extent that individual technical properties and specifications are not specifically defined by the customer, e.g. by means of meaningful measurements and limit values, such properties and specifications shall merely serve as technical guidelines and non-binding target values unless otherwise agreed. voestalpine shall not grant any warranty nor be held liable for properties and/or specifications other than those explicitly agreed upon. This also applies to the suitability and applicability of cold-rolled steel strip for certain applications as well as to the further processing of materials. All application risks and suitability risks are borne by the customer.

Please use the following link to find the applicable **general terms of sale for goods and services of the voestalpine Steel Division**: www.voestalpine.com/stahl/en/The-Steel-Division/General-Terms-of-Sale

ORDER DATA

The following information is required in each order:

- » Steel grades as defined by standards or explicit specifications
- » Dimensions, tolerances
- » Edge condition
- » Material test certificates, if desired; acceptance conditions upon request
- » Order quantity
- » Preservation
- » For coils and slit strip
 - » Inner diameter
 - » Min./max. outer diameter
 - » With or without weld seam
 - » Min./max. coil/ring weight or min/max. kg/mm strip width
 - » Max. package weight (packing unit)
 - » Max. package width
- » For cut sheets
 - » Max. package weight
 - » Max. package height (with or without pallets)
- » Packaging
- » Labeling, marking, stamping
- » Type of transport, forwarder, customs forwarder
- » Type of truck or railcar
- » Mode of unloading, means of unloading and possible restrictions
- » Desired delivery date
- » Destination
- » Terms of delivery (Incoterms)
- » Material application

STANDARDS, REGULATIONS AND TECHNICAL LITERATURE

The following information includes applicable product standards and references to other information provided by the Steel Information Center. References are made to these guidelines and standards, and compliance with these recommendations and specifications is mandatory (unless explicitly stated otherwise in these Technical Terms of Delivery).

PRODUCT STANDARDS

DIN EN 10131

Cold-rolled flat products without any coating or with electrolytic zinc or zinc-nickel coatings on mild steels and steels with higher yield strength for cold forming, limit deviations and form tolerances

DIN EN 10204

Metallic products, types of inspection documents

DIN EN 10130

Cold-rolled flat products made of mild steels for cold forming, technical delivery conditions

DIN 1623

Cold rolled strip and sheet, technical delivery conditions, general structural steels

DIN EN 10209

Cold-rolled flat products made of mild steels for enameling, technical delivery conditions

DIN EN 10268

Cold-rolled flat steel products with high yield strength for cold forming, technical delivery conditions

DIN EN 10338

Cold-rolled and hot-rolled flat products without any coating on multiphase steels for cold forming, technical delivery conditions

DIN EN 10132-2

Cold-rolled narrow steel strip for heat-treatment, technical delivery conditions, case hardening steels

DIN EN 10132-3

Cold-rolled narrow steel strip for heat-treatment, technical delivery conditions, steels for quenching and tempering

PUBLICATIONS OF THE GERMAN STEEL FEDERATION

REFERENCE SHEET 114

Packaging, storage and transport of uncoated and coated steel strip and sheet

REFERENCE SHEET 127

Oiling on thin strips and thin cut sheets

09/2019

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www.voestalpine.com/steel

voestalpine
ONE STEP AHEAD.