

ORGANIC-COATED STEEL STRIP colofer®

Technical terms of delivery
1 December 2017

These general terms apply to all organic-coated 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.

Printed copies cannot be updated on a regular basis. Please refer to the most recent content in the online data sheets found on our home page. Technical changes are reserved. Errors and misprints are excepted. No part of this publication may be reprinted without explicit written permission by voestalpine Stahl GmbH.

INDEX

- 4 Introduction
- 5 Quality management
 - 5 » Comprehensive quality management
 - 5 » State-of-the-art testing techniques
- 6 Product overview
 - 6 » Manufacturing processes
 - 6 » Substrates
 - 6 » Organic coating
 - 7 » Influence of environmental conditions on colofer® product selection
 - 8 » colofer® product properties in detail
- 10 Protective film
 - 10 » Influence of color on colofer® product selection
- 11 Order quantities and manufactured units
 - 11 » colofer® as wide strip (coil)
 - 11 » colofer® as slit strip or cut sheets
 - 11 » Weights
- 12 Available dimensions
 - 12 » colofer® as wide strip (coil)
 - 12 » colofer® steel in slit strips
 - 12 » colofer® as cut-to-length sheets
- 13 Inspections
- 14 Labeling
- 15 Additional information
 - 15 » Storage and transport
 - 15 » Marking
 - 15 » Processing of claims and complaints
 - 16 » General terms of sale
- 17 voestalpine standard colors for colofer® matt and colofer® robust
- 18 Overview of color shades

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 **organic coated (colofer®) 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 **ISO 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.

PRODUCT OVERVIEW

colofer® is a composite material that consists of a metallic substrate material and an organic coating.

MANUFACTURING PROCESSES

The substrate entering the coating mill is cleaned in a continuous process, chemically pretreated in an environmentally friendly manner (without chromates) and is bake-coated with one, two or several layers depending on the requirements of the customer. A removable protective film can be applied to the baked paint surface on the top side.

SUBSTRATES

colofer® is available with the following substrates:

- » Cold-rolled steel strip (upon request)
- » corrender hot-dip galvanized steel strip with zinc-magnesium (ZM) coating
- » Hot-dip galvanized steel strip
- » Electrogalvanized steel strip (upon request)

Please find more detailed information about the mechanical and technological properties of the desired steel grade, the manufactured dimensions (limit curves) and the supplied zinc or zinc-magnesium coatings in the respective technical terms of delivery, or use the following link to access the product information portal: www.voestalpine.com/pro

It is important to note that the mechanical and technological properties of the base material can fluctuate as a result of coil coating processes.

ORGANIC COATING

The functional properties of colofer®, such as adhesion, formability, hardness, resistance to weather conditions, corrosion resistance, temperature stress, foamability, etc., must be taken into account during processing and use. colofer® is available in several different color shades, degrees of gloss and surface qualities. Any processing of the colofer® product delivered by voestalpine must be carried out within six months of the agreed delivery date in order to guarantee the warranty of relevant properties.

INFLUENCE OF ENVIRONMENTAL CONDITIONS ON colofer® PRODUCT SELECTION

Varying environmental conditions lead to different types of stress and therefore play an important role in the selection of the most suitable colofer® product. Depending on the atmosphere, geographical location and altitude, materials are exposed to different degrees of stress.

TYPES OF ATMOSPHERES (ACCORDING TO EN 10169)



Rural atmosphere (C2)

Atmosphere prevailing in rural areas and small towns that contains almost no corrosive substances such as sulfur dioxide and chlorides.



Industrial atmosphere (C3–C5)

Atmosphere polluted by corrosive emissions from local or regional industrial operations (mostly sulfur dioxide). Industrial atmospheres are divided into three categories according to SO₂ levels (low, medium and high content).



Urban atmosphere (C3)

Polluted atmosphere prevailing in densely populated areas without significant industrial activities. It contains moderate levels of corrosive substances such as sulfur dioxide and chlorides.



Marine atmosphere (C3–C5)

Atmosphere prevailing in coastal regions. Marine atmospheres are divided into the following three categories depending on salt content and distance to the coast: low salt content (10–20 km from the coast), medium salt content (3–10 km from the coast), high salt content (0–3 km from the coast).

GEOGRAPHICAL LOCATIONS



Locations north of the 37th parallel (recommended UV resistance class: RUV 3)



Locations south of the 37th parallel (recommended UV resistance class: RUV 4)

ALTITUDES













Locations up to an altitude of 900 meters (recommended UV resistance class: RUV 3).





Locations up to an altitude of 2,100 meters (recommended UV resistance class: RUV 4).

SELECTING THE RIGHT colofer® PRODUCT FOR YOUR APPLICATION

| Atmospheres and corrosiveness category | Corrosion resistance classification | colofer® classic | colofer® uv | colofer® matt | colofer® robust | colofer® robust rain | colofer® plus | colofer® vario |
|--|-------------------------------------|------------------|-------------|---------------|-----------------|----------------------|---------------|----------------|
|  C2 | RC2 | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
|    C3 | RC3 | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
|   C4 | RC4 | ☒ | ☒ | ☒ | ☒ | ☑ | ☑ | ☑ |
|   C5-M C5-I | RC5 | ☒ | ☒ | ☒ | ☒ | ☒ | ☑ | ☒ |

| Geographic location | UV resistance | colofer® classic | colofer® uv | colofer® matt | colofer® robust | colofer® robust rain | colofer® plus | colofer® vario |
|--|---------------|------------------|-------------|---------------|-----------------|----------------------|---------------|----------------|
|  RUV3 | RUV3 | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
|  RUV4 | RUV4 | ☒ | ☑ | ☑* | ☑* | ☑ | ☑ | ☑ |

| Altitude | UV resistance | colofer® classic | colofer® uv | colofer® matt | colofer® robust | colofer® robust rain | colofer® plus | colofer® vario |
|---|---------------|------------------|-------------|---------------|-----------------|----------------------|---------------|----------------|
|  <900 | RUV3 | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
|  >900 | RUV4 | ☒ | ☑ | ☑* | ☑* | ☑ | ☑ | ☑ |

☑ recommended

* applies exclusively to selected standard colors

☒ not recommended



Our colofer® technical support consists of a large pool of experts who will be happy to assist you with all your inquiries.

colofer® PRODUCT PROPERTIES IN DETAIL

The properties shown below are based on **EN 10169**. This also includes tolerance limits for coating thicknesses, gloss and classification of the coating systems pursuant to the RC, RUV and CPI classes. Properties are generally tested in accordance with the standard method described in **EN 13523**. Property details for each colofer® product and information on testing methods are found in the respective product data sheets.

OVERVIEW OF MOST IMPORTANT COATING PROPERTIES OF ALL colofer® PRODUCTS

The following table summarizes the most important properties of all colofer® products. Please do not hesitate to contact your voestalpine specialist for additional information.

| Property | Criteria | colofer® indoor | colofer® classic | colofer® uv | colofer® matt | colofer® robust | colofer® robust rain | colofer® plus | colofer® vario | colofer® reverse |
|---|--|------------------|------------------|----------------|---|---------------------|----------------------|----------------------|--|------------------|
| Total coating layer thickness approx. | | 15 | 25 | 25 | 35 | 25 | 35 | 50 | | 10/15 |
| Number of coating layers | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | 1 |
| Color | | Upon request | Upon request | Upon request | Upon request | Upon request | Upon request | Upon request | | Upon request |
| Gloss (60°) | | approx. 30 | 15-60 | 15-40 | approx. 2 | approx. 20 | approx. 20 | 30-50 | | approx. 40 |
| Adhesion and cupping | | 6 mm Gt0B | 6 mm Gt0B | 6 mm Gt0B | 8 mm Gt0B | 6 mm Gt0B | 6 mm Gt0B | 6 mm Gt0B | | |
| Adhesion after bending | Free of tears | ≤ 1,5 T | ≤ 1 T | ≤ 1 T | ≤ 1 T | ≤ 1 T | ≤ 1 T | ≤ 1 T | | ≤ 2 T |
| Crack formation during bending ²⁾ | Free of cracks | ≤ 4 T | ≤ 3 T | ≤ 3 T | ≤ 2 T | ≤ 3 T | ≤ 2 T | ≤ 1,5 T | | |
| Scratch resistance | | ≥ 15 N | ≥ 20 N | ≥ 20 N | ≥ 15 N | ≥ 30 N | ≥ 35 N | ≥ 40 N | | |
| Temperature resistance ¹⁾ (during use) | | -20 to +80 °C | -20 to +80 °C | -20 to +110 °C | -20 to +80 °C | -20 to +80 °C | -20 to +80 °C | -20 to +80 °C | | |
| Corrosion resistance | KK: No blisters after | 500 h | 750 h | 750 h | 750 h | 750 h | 750 h | 1000 h | Values for colofer® vario upon request | 500 h |
| | SS: No blisters and mid UW max. 2 mm after | - | 360 h | 360 h | 360 h | 360 h | 360 h | 500 h | | |
| Corrosion protection class | for Z275 and ZM120 | II | III | III | III | III | III | III | | |
| RC category | for Z275 and ZM120 | | 3 | 3 | 3 | 3 | 4 | 5 | | |
| CPI category | | CPI 3 | | | | | | | | CPI 2 |
| UV resistance ²⁾ | | | RUV 3 | RUV 4 | RUV 4 ³⁾ | RUV 4 ³⁾ | RUV 4 | RUV 4 | | |
| Surface appearance | | Smooth | Smooth | Smooth | Matt fine, matt coarse, matt extra coarse | Structured | Structured | Smooth or structured | | Smooth |
| Classification according to fire behavior | EN 13501-1 | A1 ⁴⁾ | A1 ⁴⁾ | | | A1 ⁴⁾ | | | | |

¹⁾ No delamination of coating on even surfaces throughout duration of guarantee for paint adhesion. Color shades will change as a result of long-term stress at high temperature.

²⁾ UV resistance depends heavily on color. The respective RUV class is only guaranteed for colors noted in Table 4 (with the exception of special regulations on colofer® matt and colofer® robust). Additional color shades upon request.

³⁾ Special regulations for the color shades indicated in Table 3

⁴⁾ Only as backing coat for colofer® reverse

Printed copies cannot be updated on a regular basis. Please use the following link to find the most recent content on our home page: www.voestalpine.com/colofer

PROTECTIVE FILM

As an optional service, most colofer® materials can be ordered with a protective film that protects the surface of the product during transport, storage and processing at the customer until the product is installed. Film possibilities are dependent on the selected coating system. colofer® can be delivered with a hot-laminated protective film made of polyethylene and with a thickness of approximately 120 µm. The standard is a full-cover film up to 5 mm from both edges. The width of uncovered material at the edges can be enlarged upon request. The maximum coil mass covered with a protective film is 10 kg/mm of strip width.

The thicker hot-laminated protective film is preferred in places where a higher level of protection is required. This film has the advantage that no adhesive remains on the coated surface during UV stress after the protective film has been removed. The coating must be adjusted for the application of protective film, and unfortunately this is not possible for all coating systems.

The entire coating layer structure and film must be adjusted to meet specific customer requirements. Environmental conditions such as temperature and UV stress, etc., influence the adhesiveness of the protective film. For this reason, colofer® products must be processed/installed within six months following the designated delivery date. The protective film is to be removed within this time frame.

INFLUENCE OF COLOR ON colofer® PRODUCT SELECTION

Certain durability criteria must be met, and the use of certain paint materials is restricted in particular applications of colofer® products. This means that not all colors can be applied in every outdoor environment, even when a suitable colofer® product has been selected for the respective application.

The table in the appendix indicates which RAL colors can be used for which RUV classes indicated in the data sheets. A binding warranty cannot be assumed based on any of the data contained in the table. Deviations are possible in individual cases. This discrepancy is explained by the differing UV resistance of various pigments. This stability is counterproductive to the achievability of desired colors.

Achievable RUV classes for each coating can be determined upon request in collaboration with a voestalpine coating expert.

Depending on the color shade and specific requirements of the UV resistance class, the actual color may differ substantially from the RAL color chart. For this reason, binding agreements made between the customer and voestalpine with respect to color are always based on coated samples and are referenced by a system number.

New developments or changes to legally applicable standards (such as prohibited pigments) may also lead to changes in the future and make it impossible to achieve certain RAL colors.

ORDER QUANTITIES AND MANUFACTURED UNITS

Ordered thickness and respective tolerances refer to the substrate material without consideration of the organic coating.

colofer® AS WIDE STRIP (COIL)

- » The minimum order quantity per line item is one coil production unit (depending on the steel grade, between approx. 20 kg/mm and approx. 21 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 coil production unit typical for this item.
- » Additional project requirements must be agreed upon separately, e.g. for required minimum volumes of special colofer® products.

colofer® AS SLIT STRIP OR CUT SHEETS

- » The minimum order quantity per line item is one coil production unit, which ranges roughly between approx. 20 kg/mm and approx. 21 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. 20, 10, 5 kg/mm
 - » Cut sheets can be divided into units \leq 6 tons
- » Overdelivery and underdelivery is permitted up to \pm 10%.

WEIGHTS

- » The maximum weight per steel coil is 35 tons.
- » The maximum weight per package of cut sheets is 6 tons.

AVAILABLE DIMENSIONS

colofer® is supplied based on pertinent European standards such as **EN 10169** and **EN 13523**. Other international recommendations, such as the European Coil Coating Association (ECCA) in Brussels and the National Coil Coaters Association (NCCA) in Philadelphia, USA, may apply upon request. 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. A symmetric tolerance zone position is a prerequisite for the ordered thickness.

PRODUCTS MADE OF colofer® ARE SUPPLIED IN THE FOLLOWING FORMS:

- » Wide strip (coil), with mill edge or cut edge
- » Longitudinally slit strips with cut edges
- » Sheets with cut edges

colofer® AS WIDE STRIP (COIL)

| Product variant | Thickness [mm] | Width max. [mm] | Outer diameter max. [mm] | Inner diameter [mm] |
|-----------------|----------------|-----------------|--------------------------|---------------------|
| colofer® | 0.40–2.50 | 900–1730 | 2000 | 500/600* |

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

colofer® STEEL IN SLIT STRIPS

| Product variant | Thickness [mm] | Strip width max. [mm] | Outer diameter max. [mm] | Inner diameter [mm] |
|-----------------|----------------|-----------------------|--------------------------|---------------------|
| colofer® | 0.40–2.50 | 10–1730 | 700–2200 | 500/600* |

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

colofer® AS CUT-TO-LENGTH SHEETS

| Product variant | Thickness [mm] | Width max. [mm] | Length max. [mm] | Package weight max. [t] |
|-----------------|----------------|-----------------|------------------|-------------------------|
| colofer® | 0.40–2.50 | 210–1730 | 200–6700 | 6 |

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

INSPECTIONS

voestalpine is committed to supporting customers in submitting applications. The following permits and certificates are available for all colofer® products:

- » Certified according to ISO 9001
- » Corrosion protection
- » Fire behavior
- » Component certificate
- » Certificate of equivalence

colofer® products manufactured in large quantities are inspected annually by an outside agency with respect to their corrosion protection (pursuant to **DIN 55928-8** or the subsequent standard **DIN 55634**) and are classified with respect to their fire behavior in building material classes (**EN 13501-1**). The achieved corrosion-protection and fire-behavior classes are found in the respective product data sheets.

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
- » Test samples labeled as such

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

ADDITIONAL INFORMATION

STORAGE AND TRANSPORT

colofer® must be protected from damage, contamination, moisture (from rain, splashing, ground-water and condensation) during storage and transportation. In order to guarantee optimum protection during transport, packing types must be selected according to specific transport requirements and the destination of the shipment. Use of a cardboard sleeve to protect the inner coil is available upon request.

In order to guarantee optimum protection during storage, support bases must be made of plastic, steel or wood. Steel bases must be clad with rubber or plastic. The design of the support base must correspond to the coil geometry. Coils must not be stacked unless damage (indentations) to the material is excluded without any doubt.

Protective films do not provide sufficient protection against moisture and dampness and are only intended to protect the painted surface against mechanical damage during processing, storage and transport. Protective films made of polyethylene do not provide any resistance to water diffusion. colofer® material, even when covered with a protective film, must not be exposed to moisture. The protective film must be immediately removed from any coil that comes into contact with moisture so the coil can dry and be processed as quickly as possible.

MARKING

Standard deliveries are not marked. Supply of water-based or insoluble marking is possible upon request. Deliveries are not marked when the marking system is defective.

PROCESSING OF CLAIMS AND COMPLAINTS

As a result of a lack of sorting possibilities, defects in up to 2% of coil products and 1% of cut sheets with respect to the order volume per line item are included in the price and shall not constitute a reason for any claim. Individual coils (cut sheets) may contain a higher percentage of defects. This refers to the top surface. Minor coating defects on the back side, even when both sides are coated, cannot be referenced to determine the percentage of defects.

In order to ensure their validity, claims must be submitted within five work days after the subject of the claim is discovered.

Apparent transport damage must be noted directly on the shipping note at the time the material is accepted during unloading. This damage must also be documented with photographs and immediately reported to the sales department.

If an immediate response is required by voestalpine (danger of delay, necessity of immediate commercial decision or approval), it will be additionally necessary to establish telephone contact. As a general rule, voestalpine must be given the opportunity to repair the material or make a replacement delivery without incurring any consequential costs. All related measures must be coordinated with voestalpine.

Precise documentation of any damage is required and must include a description of the defect, photographs or samples and is required for technical processing of the claim.

The following data will be required for any processing of claims:

- » Customer, recipient
- » Corresponding coil numbers, cut-sheet batch numbers and related rolling order numbers (delivery notes/coil stickers)
- » Weight or surface area of affected material (canceled coils, stock list)
- » Level of urgency
- » Customer request (amount of damage, replacement delivery, reimbursement of additional costs, depreciation, action plan, etc.)
- » Description of the problem
- » Place of installation (address)
- » translated original customer letter of claim
- » Contact person at the customer, telephone number

voestalpine implements suitable cause analysis methods. Should the customer request that more expensive methods be used, voestalpine reserves the right to invoice the customer for additional analysis expenses to the extent that the result of the analysis confirms that voestalpine Stahl GmbH is not accountable.












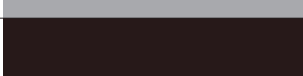
GENERAL TERMS OF SALE

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 hot-dip galvanized 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

voestalpine STANDARD COLORS FOR colofer® matt AND colofer® robust

The depicted colofer® standard colors correspond very closely to the RAL colors.
One standard (layer code) is defined for each color shade.

| RAL color | | colofer® matt | colofer® robust |
|---------------|---|---------------|-----------------|
| RAL 3005 |  | X | X |
| RAL 3009 |  | X | X |
| RAL 6005 |  | X | X |
| RAL 6011 |  | X | X |
| RAL 7016 |  | X | X |
| RAL 7037 |  | X | X |
| RAL 8004 |  | X | X |
| RAL 8017 |  | X | X |
| RAL 9002 |  | X | X |
| RAL 9005 |  | X | X |
| RAL 9006 |  | X | X |
| Testa di moro |  | X | X |

OVERVIEW OF COLOR SHADES

List of colors that comply with the UV resistance parameters indicated in the data sheets (exceptions possible)

| RAL color | Color name | RAL color | Color name | RAL color | Color name |
|-----------|-----------------|-----------|----------------|-----------|-----------------|
| 1000 | green beige | 5013 | cobalt blue | 7015 | slate gray |
| 1001 | beige | 5014 | pigeon blue | 7016 | anthracite gray |
| 1002 | sand yellow | 5015 | sky blue | 7021 | black gray |
| 1006 | maize yellow | 5017 | traffic blue | 7022 | umbra gray |
| 1007 | daffodil yellow | 5018 | turquoise blue | 7023 | concrete gray |
| 1011 | brown beige | 5019 | capri blue | 7024 | graphite gray |
| 1012 | lemon yellow | 5021 | water blue | 7026 | granite gray |
| 1013 | pearl white | 5023 | distant blue | 7030 | stone gray |
| 1014 | ivory | 5024 | pastel blue | 7031 | blue gray |
| 1015 | bright ivory | 6000 | patina green | 7032 | pebble gray |
| 1016 | sulfur yellow | 6001 | emerald green | 7033 | cement gray |
| 1017 | saffron yellow | 6002 | leaf green | 7034 | yellow gray |
| 1019 | gray beige | 6003 | olive green | 7035 | light gray |
| 1020 | olive yellow | 6004 | blue green | 7036 | platinum gray |
| 1024 | ochre yellow | 6005 | moss green | 7037 | dusty gray |
| 1027 | curry yellow | 6006 | gray olive | 7038 | agate gray |
| 1032 | broom yellow | 6007 | bottle green | 7039 | quartz gray |
| 1033 | dahlia yellow | 6008 | brown green | 7040 | window gray |
| 1034 | pastel yellow | 6009 | fir green | 7042 | traffic gray a |
| 1037 | sun yellow | 6010 | grass green | 7043 | traffic gray b |
| 2000 | yellow orange | 6011 | reseda green | 7044 | silk gray |
| 2001 | red orange | 6012 | black green | 8000 | green brown |
| 2002 | vermilion | 6013 | reed green | 8001 | ochre brown |
| 2004 | pure orange | 6014 | yellow olive | 8002 | signal brown |
| 2010 | signal orange | 6015 | black olive | 8003 | clay brown |
| 2011 | deep orange | 6017 | may green | 8004 | copper brown |
| 2012 | salmon orange | 6019 | pastel green | 8007 | fawn brown |
| 3000 | flame red | 6020 | chrome green | 8008 | olive brown |
| 3001 | signal red | 6021 | pale green | 8011 | nut brown |
| 3002 | carmine red | 6022 | olive drab | 8012 | red brown |
| 3009 | oxide red | 6024 | traffic green | 8014 | sepia brown |
| 3012 | beige red | 6025 | fern green | 8015 | chestnut brown |
| 3013 | tomato red | 6028 | pine green | 8016 | mahogany brown |
| 3016 | coral red | 6029 | mint green | 8017 | chocolate brown |
| 3020 | traffic red | 6032 | signal green | 8019 | gray brown |
| 3022 | salmon pink | 6033 | mint turquoise | 8023 | orange brown |
| 3027 | raspberry red | 6034 | pastel green | 8024 | beige brown |
| 3031 | orient red | 7000 | squirrel gray | 8025 | pale brown |
| 4002 | red violet | 7001 | silver gray | 8028 | terra brown |
| 5000 | violet blue | 7002 | olive gray | 9001 | cream white |
| 5001 | green blue | 7003 | moss gray | 9002 | gray white |
| 5003 | sapphire blue | 7004 | signal gray | 9003 | signal white |
| 5004 | black blue | 7005 | mouse gray | 9004 | signal black |
| 5005 | signal blue | 7006 | beige gray | 9005 | deep black |
| 5007 | brilliant blue | 7008 | khaki gray | 9010 | pure white |
| 5008 | gray blue | 7009 | green gray | 9016 | traffic white |
| 5009 | azure blue | 7010 | tarpaulin gray | 9018 | papyrus white |
| 5010 | gentian blue | 7011 | iron gray | 9006 | white aluminum |
| 5011 | steel blue | 7012 | basalt gray | 9007 | gray aluminum |
| 5012 | light blue | 7013 | brown gray | | |

12/2017

voestalpine Steel Division
voestalpine-Straße 3
4020 Linz, Austria
T. +43/50304/15-8018
produktmanagement@voestalpine.com
www.voestalpine.com/steel

voestalpine
ONE STEP AHEAD.