

SCANDIE STEEL RULES

including
voestalpine
Special Rules

HIGH QUALITY FOR PROFESSIONALS



Produced with
latest technology standards.



EVOLUTION NEVER STOPS.

SCANDIE steel rules.
A brand with outstanding possibilities.

Why you can count on us. Our main brand values.

SCANDIE is a leading manufacturer of high quality strip steel for die-making in the packaging industry and focuses on supporting customers with value effective solutions. We offer steel rules for any die-cutting operation and help diemakers and converters improve their processes in difficult applications.

Apart from our expertise in metallurgy our own inhouse Research and Development Center supports our customers in their daily business. Our experts can help to attain highest levels of rule specification, advising on key factors such as body and edge hardness, height, point size, bevel type and edge angle. **SCANDIE** customers will feel very confident when running jobs with complexity for various materials like laminated solid board, cigarette packs, plastics, LCD screens, gaskets or electronic media.

Quality management

SCANDIE has quality management systems approved by internationally recognized organizations. We manufacture our steel rule products in conformity with European quality standards: EN ISO 9001:2008, EN ISO 14001:2004 and OHSAS 18001:2007.



**LONGEST
TOOL
LIFETIME**

**COSMETIC
PACKAGING**

**SCANDIE
STEEL RULES**
HIGH QUALITY FOR PROFESSIONALS

**BLISTER
PACKAGING**

**ELECTRONIC
PARTS &
LCD SCREENS**

**TISSUE
BOXES**

**PERFECT
AUTOMATIC
PROCESSING**

**BEST AND
UNIFORM
STEEL
QUALITY**

**FOOD
PACKAGING**

**REDUCED
CUTTING
PRESSURE**

**CIGARETTE
PACKAGING**

**SCANDIE
STEEL RULES**
HIGH QUALITY FOR PROFESSIONALS

**LABELS,
FOILS,
PLASTIC
FILMS**

**SOLUTIONS
FOR ALL
APPLICATIONS**

**ABRASIVE
MATERIALS**

**HIGHEST
VARIETY**

BEVEL EXECUTION

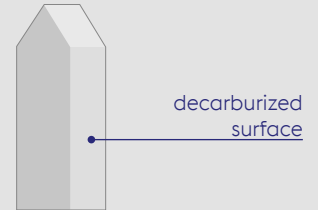
| BEVEL TYPE | | | |
|---------------------------|-------------------------|---------------------------------|-------------------------------|
| | | | |
| CB CENTER BEVEL | SB SIDE BEVEL | LCB LONG CENTER BEVEL | LSB LONG SIDE BEVEL |

| BEVEL FINISH | | | | | | | | | |
|------------------------------|---|--------|------------|-----------|----------|------------|---------|------------|----------|
| SHAVED EDGE | <p>As a standard our cutting rules are supplied in shaved edge execution. These rules incorporate good bendability, high wear resistance and excellent performance for general die-cutting applications.</p> | | | | | | | | |
| FINE GROUND EDGE GF | <p>For successfully die-cutting tough materials, such as laminated boards and plastics (PE, PET, PVC), a sharpened cutting edge is required. Our fine ground edge is very sharp and ground to a smooth bevel finish. Offered for edge hardened products only.</p> | | | | | | | | |
| BRIGHT EDGE BX | <p>Bright has an extremely sharp edge and mirror-like bevel finish. It permits a clean cut at lowest pressure. Suitable for films and parts in the electronics industry. Offered for edge hardened products only.</p> | | | | | | | | |
| ROBUST EDGE RO | <p>The tip angle of 75° reduces the risk of cutting pressure overload, so the edge remains sharp longer and increases the rule lifetime. Offered for edge hardened products only.</p> <table border="1"> <tr> <td>Height</td> <td>22 - 30 mm</td> </tr> <tr> <td>Thickness</td> <td>2pt, 3pt</td> </tr> <tr> <td>Bevel type</td> <td>CB, LCB</td> </tr> <tr> <td>Edge angle</td> <td>42°, 52°</td> </tr> </table> | Height | 22 - 30 mm | Thickness | 2pt, 3pt | Bevel type | CB, LCB | Edge angle | 42°, 52° |
| Height | 22 - 30 mm | | | | | | | | |
| Thickness | 2pt, 3pt | | | | | | | | |
| Bevel type | CB, LCB | | | | | | | | |
| Edge angle | 42°, 52° | | | | | | | | |

NON EDGE HARDENED

| | SCANDIE 400 | SCANDIE 450 |
|---------------|------------------|-------------|
| Body hardness | 380 HV | 450 HV |
| Height | 22 - 100 mm | |
| Thickness | 2pt, 3pt, 4pt | |
| Bevel type | CB, SB, LCB, LSB | |
| Edge angle | 42°, 52° | |

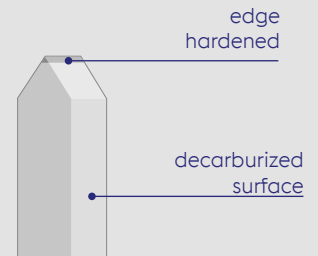
Suitable for short and medium die-cutting runs of solid and corrugated board. The hard body gives good stability, whilst the surface decarburization ensures excellent bendability.



EDGE HARDENED

The cutting edges of these rules are high frequency hardened and ensure longest lifetime in die-cutting. The soft body permits tight bends, while rules with a higher body hardness provide highest stability during die-cutting.

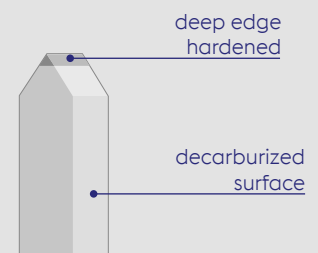
| | SCANDIE 350 HF | SCANDIE 400 HF | SCANDIE 450 HF | SCANDIE 500 HF |
|---------------|------------------|----------------|----------------|----------------|
| Body hardness | 340 HV | 380 HV | 450 HV | 500 HV |
| Edge hardness | 650 HV | 650 HV | 650 HV | 670 HV |
| Height | 22 - 50 mm | 22 - 50 mm | 22 - 100 mm | 22 - 50 mm |
| Thickness | 2pt, 3pt, 4pt | | | |
| Bevel type | CB, SB, LCB, LSB | | | |
| Edge angle | 42°, 52° | | | |



DEEP EDGE HARDENED

| | SCANDIE 700 HFD |
|-----------------|------------------|
| Body hardness | 400 HV |
| Edge hardness | 700 HV |
| Hardening depth | plus 50% |
| Height | 22 - 50 mm |
| Thickness | 2pt, 3pt |
| Bevel type | CB, SB, LCB, LSB |
| Edge angle | 42°, 52° |

An extra deep hardened cutting edge improves cutting die lifetime. The medium-hard, stable body and decarburized surface give this rule a good level of bendability, so it is suitable for diecutting tough and abrasive products.



CUTTING RULES

SCANDIE HIP 800

SCANDIE HIP 800 is a well-established innovation to cut PET, PE, PVC, PP, PS, semiconductor elements, blister packs and thermoplastic materials. We apply technology from razor blade manufacturing to drastically improve the die-cutting performance.

Due to the special dual edge hardening process this new cutting rule offers highest cutting edge hardness combined with advanced pressure distribution. In spite of its bevel hardness it can still be processed troublefree on automatic bending equipment.

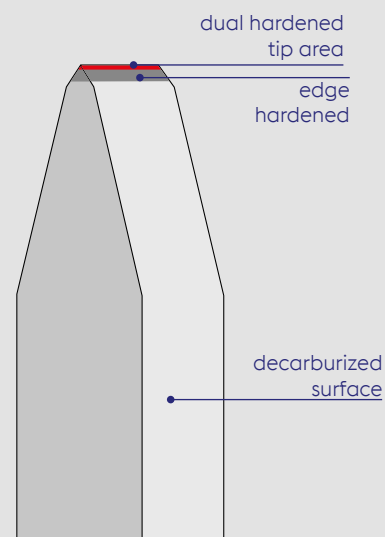
| | SCANDIE HIP 800 |
|-----------------|-----------------------|
| Body hardness | ~ 450 HV |
| Tip area | ~ 800 HV |
| Edge hardness | ~ 650 HV |
| Hardening depth | plus 50% |
| Height | 23.60 - 50 mm |
| Thickness | 2pt, 3pt |
| Bevel type | LCBT |
| Edge angle | 42° |
| Bevel finish | BX bright edge |

Features

- » Dual edge and deep hardened
- » Extremely sharp edge
- » Mirror-like bevel finish
- » High stability with special long bevel

Application

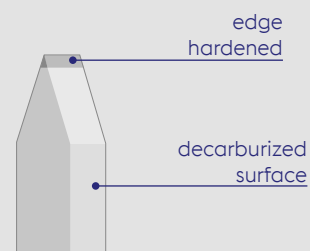
- » Plastic materials PVC, PP, PET, PA, PE, films, foils, electronics, IML
- » Rigid materials gaskets



SCANDIE LABEL RULES

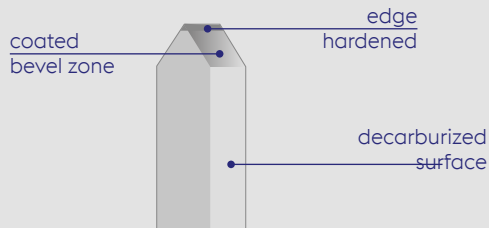
For these rules the standard bevel finish is fine ground with best tip sharpness suitable for half-cutting. Offered in edge hardened versions to achieve longest lifetime and best cutting results.

| | SCANDIE 350 HF | SCANDIE 400 HF | SCANDIE 450 HF |
|---------------|------------------------------------|----------------|----------------|
| Body hardness | 340 HV | 380 HV | 450 HV |
| Edge hardness | 650 HV | 650 HV | 650 HV |
| Height | 8 - 12 mm | | |
| Thickness | 1,3 pt (0,45 mm), 1,5 pt (0,53 mm) | | |
| Bevel type | CB | | |
| Edge angle | 42° | | |



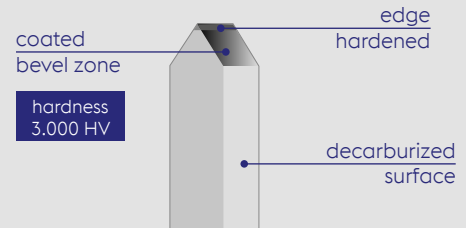
GLIDE (D)

This type of bevel coating is designed to reduce friction. Easy penetration allows for reduced cutting pressure and supports longer knife durability and minimized angel hair. Suitable for cutting recycled solid board and corrugated board. Available for edge-hardened products only.



DIAMOND (DO)




With a coating hardness of approx 3.000 HV these cutting rules will perform best in long run jobs due to their extended durability. Suitable for long die-cutting runs on cigarette boxes and pharmaceutical packaging. Available for SCANDIE 350 HF and SCANDIE 400 HF rules.



CREASING RULES

SCANDIE CREASING RULES

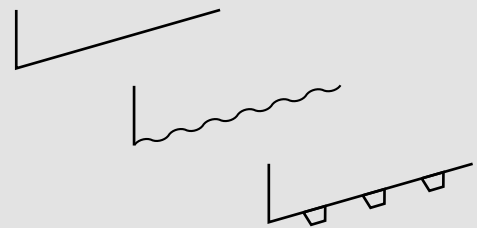
The quality of creasing rules matters in diecutting. Best product quality in combination with tightest tolerances guarantee excellent creasing results.

| | | SCANDIE tempered | SCANDIE 400 |
|---------------|---|--|---|
| Body hardness | | 380 HV | 380 HV |
| Height | | 20,50 - 24,00 mm | |
| Thickness | | 2pt, 3pt | 4pt |
| |  |  |  |
| | SR SINGLE ROUND | DR DOUBLE ROUND | SRF SINGLE ROUND FINE |

SCANDIE STRIPPING RULES

The best option for ejecting waste after the diecutting process.

| | SCANDIE 400 |
|---------------|--|
| Body hardness | 380 HV |
| Height | 30 - 55 mm |
| Thickness | 3pt |
| Executions | <ul style="list-style-type: none"> • standard, flat • waved • flat with teeth |



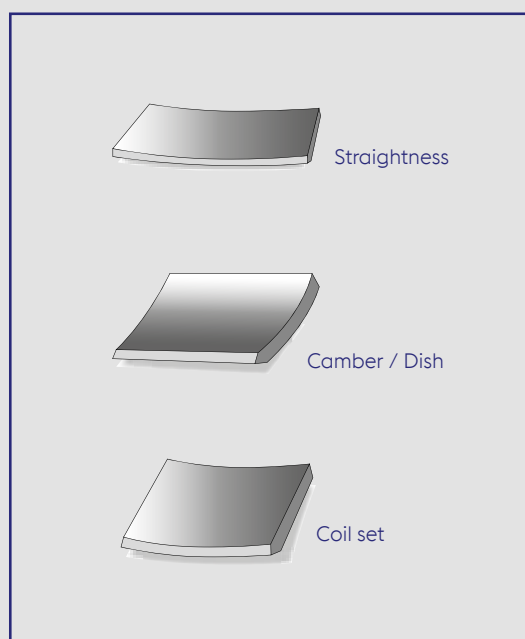
TOLERANCES

SCANDIE steel rules are 100% manufactured in AUSTRIA on state-of-the-art equipment, and in strict compliance with standards established by the European Diemaking Association (ESU).

| Product Tolerances | |
|--------------------|--------------------------|
| Height < 35 mm | +/- 0,020 mm |
| Height ≥ 35 mm | +/- 0,030 mm |
| Straightness | max. 0,5 mm / 1 m length |
| Camber / Dish | max 0,10% of height |
| Coil set | max. 5 mm / 1 m length * |

* for cut lengths only

| Thickness Tolerances | | |
|----------------------|--------------|-----------------|
| Thickness mm | Thickenss pt | Tolerance in mm |
| 0,45 | 1,3 | +/- 0,012 |
| 0,53 | 1,5 | +/- 0,014 |
| 0,71 | 2 | +/- 0,015 |
| 1,05 | 3 | +/- 0,020 |
| 1,42 | 4 | +/- 0,028 |



BENDABILITY

| | Radius R in mm | SCANDIE 400 | SCANDIE 450 | SCANDIE 350 HF | SCANDIE 400 HF | SCANDIE 450 HF | SCANDIE 700 HFD | SCANDIE 350 HF FINE GROUND / BRIGHT | SCANDIE 400 HF FINE GROUND / BRIGHT | SCANDIE 450 HF FINE GROUND / BRIGHT | SCANDIE HIP 800 BRIGHT | SCANDIE 350 / 400 HF GLIDE | SCANDIE 350 / 400 HF DIAMOND |
|------------------|----------------|-------------------|-------------|----------------|----------------|----------------|-----------------|-------------------------------------|-------------------------------------|-------------------------------------|------------------------|----------------------------|------------------------------|
| | | | | | | | | | | | | | |
| Radius for 1,5pt | 0,35 | | | 40° | 60° | 80° | | 60° | 60° | | | | |
| Radius for 2pt | 0,35 | 60° | 60° | 50° | 80° | 80° | 90° | 70° | 80° | 90° | 90° | 80° | 80° |
| Radius for 3pt | 0,45 | 80° | 80° | 80° | 90° | 90° | 90° | 80° | 90° | 90° | | 90° | 90° |
| Radius for 4pt | 1,00 | 90° | 90° | 80° | 90° | 90° | | | | | | | |
| | | non edge hardened | | edge hardened | | | | fine ground / bright | | | | coatings | |

PRODUCT INFORMATION

PACKAGING

Forms of Delivery

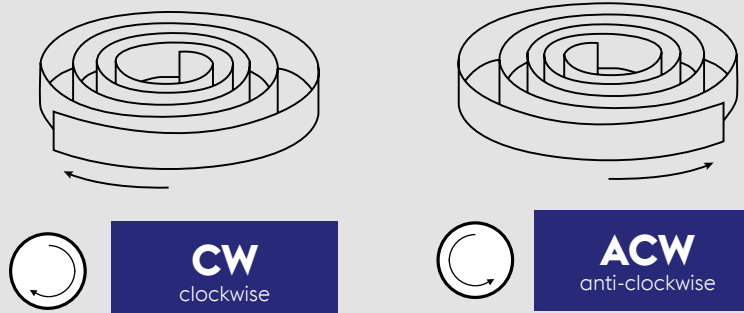
SCANDIE steel rules are packed in suitable corrugated boxes for straight lengths and coils, for easy use and safe transport and storage. In addition, the steel rules are wrapped in anti-corrosion paper to prevent rusting. The standard for cut lengths is 1 meter.



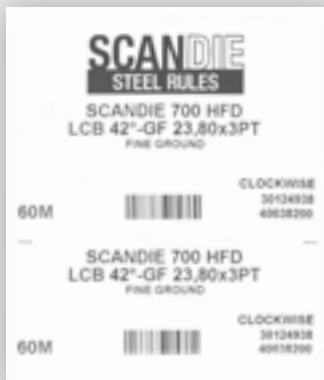
Please see pack quantities for coils and lengths in the table below.

| Thickness pt | 1,3 / 1,5 | 1,3 / 1,5 | 2 | 2 | 3 | 3 | 4 | 4 |
|--------------|-----------|-----------|-------|---------|-------|---------|-------|---------|
| Height mm | Coils | Lengths | Coils | Lengths | Coils | Lengths | Coils | Lengths |
| <= 23,80 | 100 m | 100 m | 100 m | 100 m | 60 m | 60 m | 50 m | 50 m |
| 30,00 | | | 100 m | 35 m | 60 m | 25 m | 50 m | 17 m |
| 31,75 | | | 100 m | 35 m | 60 m | 25 m | 50 m | 17 m |
| 32,00 | | | 100 m | 35 m | 60 m | 25 m | 50 m | 17 m |
| 38,10 | | | 60 m | 35 m | 50 m | 25 m | 40 m | 17 m |
| 40,00 | | | 60 m | 35 m | 50 m | 25 m | 40 m | 17 m |
| 50,00 | | | 50 m | 35 m | 40 m | 25 m | 25 m | 17 m |
| 60,00 | | | | | 25 m | 25 m | 20 m | 17 m |
| 70,00 | | | | | 25 m | 25 m | 20 m | 17 m |
| 80,00 | | | | | 25 m | 25 m | 20 m | 17 m |
| 100,00 | | | | | 20 m | 25 m | 15 m | 17 m |

Coils are available in clockwise and anti-clockwise direction.



LABELING



Box label



Printing on steel rule via inkjet

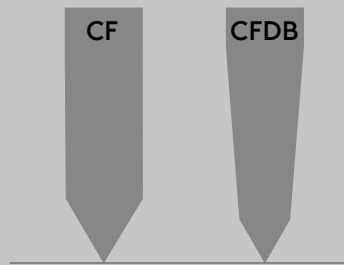
PRODUCT CODE - CUTTING RULES

| | Mandatory | Optional |
|----------------------------|--|--|
| 1 Product hardness | 350 400 450 500 700 HIP 800 | HF Edge hardened HFD Deep edge hardened HIP Dual and deep edge hardened |
| 2 Bevel type | CB SB LCB LSB | GF Fine ground finish — only for edge hardened rules BX Bright finish — only for edge hardened rules RO Robust edge — only for CB / LCB rules D Glide coating — only for edge hardened rules DO Diamond coating — only for 350 HF and 400 HF rules |
| 3 Height | 8 mm - 100 mm | |
| 4 Thickness | 1,3 pt 1,5 pt 2 pt 3 pt 4 pt | |
| 5 Coiling direction | CW Clockwise ACW Anti-clockwise | |

VOESTALPINE SPECIAL RULES

In the future, special steel rules will be sold exclusively under the voestalpine brand. They will no longer be available under the **SCANDIE** product brand.

This will lead to some changes in the article description (as shown below). All product features and parameters will remain as they are.



CUTTING BEVEL

CB = **CF** = Center bevel

LCB = **CFDB** = Long center bevel

HARDNESS

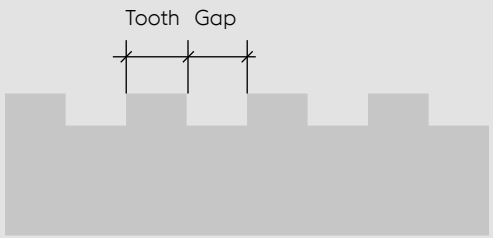
SCANDIE 450 = voestalpine 450

SCANDIE 350 HF = voestalpine 350/660

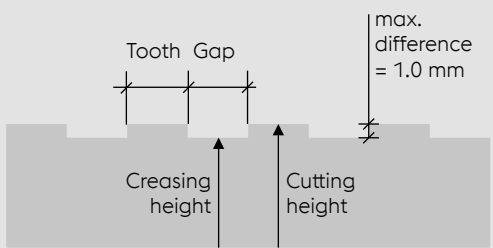
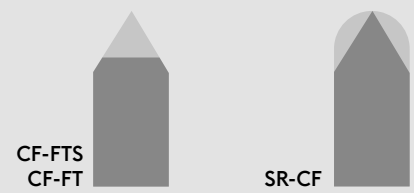
VOESTALPINE HEAVY TOP CREASING RULES

| | | | | |
|---|---------------|--|--------------------------|---|
| The ideal solution for shelf ready packaging. | | voestalpine HT370 | voestalpine HT400 |  <p>WRT WFT WPC WTT</p> |
| | Body hardness | ~370 HV | ~400 HV | |
| | Height | 20.30 - 24.40 mm | | |
| | Thickness | 2/3 pt, 2/4 pt, 3/4 pt, 3/6 pt, 3/8 pt | | |
| | Bevel type | WRT, WFT, WPC, WTT | | |

VOESTALPINE PERFORATING RULES

| | | | |
|---|------------|--|---|
| Wide range of tooth/gap combinations in best quality for all kinds of packaging requirements. | | voestalpine 450 voestalpine 350/660 |  |
| | Height | 21,00 - 25,40 mm | |
| | Thickness | 2pt, 3pt, 4pt | |
| | Bevel type | CF | |
| | Spacing | Tooth / Gap | |

VOESTALPINE CUT-CREASE RULES

| | | | |
|--|---|--|--|
| Standard configuration: Efficient Cut-Crease rules with optimized value for money – in standardized dimensions and variations with ground creasing part. | | voestalpine 450 voestalpine 350/660 |  |
| | Standard cut-crease combinations | 5/5 mm, 6.35/6.35 mm 10/10 mm 12.70/12.70 mm | |
| | Thickness | 2pt, 3pt | |
| | Bevel type | CF-FTS (ground) *other executions in CF-FT (milled) | |
| | | | |
| Special configuration: For counter-cutting plates with milled creasing channels. <i>Please contact us for available tooth-gap combinations.</i> | | voestalpine 450 |  |
| | Creasing height | 23.85 mm | |
| | Cutting height | 23.80 mm | |
| | Bevel type | SR-CF (milled) | |

VOESTALPINE SPECIAL RULES

VOESTALPINE ZIPPER RULES

Zipper rules provide a tear-open solution especially for shelf ready packagings.

| | |
|---------------|------------------------|
| | voestalpine 450 |
| Height | 22,00 - 25,40 mm |
| Thickness | 2pt, 3pt |
| Bevel type | CF |
| Tooth spacing | 6 - 12 mm |



VOESTALPINE GLUE FLAP RULES

Glue flap rules are wave edge perforating rules, which are manufactured in the same heights as scoring rules. They are used to roughen the glue flaps on cardboard so as to obtain a firm grip surface for the adhesive. boxes

| | |
|--------------|------------------------|
| | voestalpine 450 |
| Height | 22,80- 23,60 mm |
| Thickness | 2pt |
| Bevel type | CF |
| Spacing | 2 pt / 2 pt |
| Wave spacing | 5 mm |



VOESTALPINE TEAR EDGE RULES

Ideal used for creating hand holes and general zipper applications.

| | |
|------------|----------------------------|
| | voestalpine 350/660 |
| Height | 23,80 mm |
| Thickness | 2pt, 3pt |
| Bevel type | CFDB 30° |
| Spacing | 3mm / 4 mm / 5 mm |



VOESTALPINE SPACER RULES

Spacer rules fill gaps between steel rules and wider laser cuts within the die board or backfill unwanted laser cuts within an existing die.

| | |
|------------|---|
| | voestalpine HT, HR voestalpine 350 |
| Height | 15, 17, 18, 20 mm |
| Thickness | 0,5 pt - 6 pt |
| Bevel type | cut edges GK |



THE COMPANY



voestalpine Precision Strip

The company voestalpine Precision Strip is a manufacturer of cold-rolled strip steel meeting the highest quality standards available. With our production and distributions companies in Austria, Sweden and United States as well as our sales subsidiaries in the China and Spain we employ 1300 staff members and export our products for more than 350 Mio € to over 80 countries worldwide. Since 2007 our company is a 100% subsidiary of the voestalpine group, with headquarters located in Linz, Austria.

Our production focus is on high quality strip steel needed for all kinds of saw products, for example bimetal strip for metal saw production or precision strip steel for wood-, butcher- or stone saws. Furthermore voestalpine Precision Strip produces strip steel for the printing and paper industry, for the packaging industry as well as specialized applications in the fields of technical knives, razor blades and flapper valves for air conditioners and compressors.

The core competence of voestalpine Precision Strip lies in the combination of knowhow, technology and diversity of materials. Decades of experience, our own research and development department as well as continuous investment ensure our quality and technological advantage and set us aside from our competitors. For many strip steel niche products voestalpine Precision Strip is the only supplier worldwide.



SCANDIE STEEL RULES

HIGH QUALITY FOR PROFESSIONALS



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