

Cold-rolled products

Cold rolling at Corus produces processed strip steel products in a range that offers reduced thicknesses, enhanced surface finishes and forming characteristics, and high-strength grades. Many of these products are specially developed for demanding applications.

General

The cold-rolled strip steel products offered in this section are listed below.

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Grades

This section of the catalogue shows the standard grades of cold-rolled steel offered by Corus.

Typical applications

- automotive components and body panels
- components for building and construction
- tubes and sections
- drums and boilers
- radiators
- bathtubs
- furniture
- domestic appliances
- electrical goods

Most cold-rolled steel grades are suitable for:

- electrolytic coating
- hot-dip coating
- post-galvanising
- organic coating
- powder coating

Coil condition

Corus can supply cold-rolled steel in the conditions shown below:

Annealed and skin-passed
Full hard (on request)

Overall thickness and width limits

The overall thickness and width limits for cold-rolled products are shown in table 1 below. The limits for specific products are shown under individual product headings throughout the cold-rolled section.

Coil diameters

The coil diameters that apply to cold-rolled coil are shown in table 2 below.

Coil weight

The maximum weight of cold-rolled coils offered by Corus is determined by three factors:

- Manufacturing limit: Maximum 21kg/mm of width up to 33 tonnes
- Maximum safe outside diameter of coil (mm):
10/7 x coil width (limit of 2800mm)
- Maximum weight allowed by road/rail transport

Corus will discuss these factors with the customer to ensure compatibility with the quantity ordered.

Particular cold-rolled products may have maximum coil weights that differ from the range as a whole (see individual product sections).

If a minimum coil weight has not been specified by the customer and agreed with Corus, then it will be 50% of the agreed maximum weight.

Tolerances on dimensions and shape

Thickness

The thickness tolerances shown in table 3 on page 36 are from EN 10131 : 1991. Corus can offer tolerances closer than the special tolerances (S) shown in the table. They must be agreed with Corus before ordering.

Coil width

The coil width tolerances in table 4 on page 36 are from EN 10131 : 1991.

Flatness

Flatness complies with EN 10131 : 1991 as shown in table 5 for steel grades with $R_{eL} < 280\text{N/mm}^2$ and table 6 for steel grades with $R_{eL} \geq 280\text{N/mm}^2$ and $< 360\text{N/mm}^2$, both on page 36.

Edge camber

The deviation over a length of 2 metres will not exceed 6mm.

Table 1: Thickness and width limits

| Product form | Thickness | | Width | |
|---------------|-----------|-----|-------|------|
| | Min | Max | Min | Max |
| Mill edges | 0.35 | 3.1 | 750 | 2000 |
| Trimmed edges | 0.35 | 3.1 | 750 | 2040 |

Note: Dimensions are in millimetres.

Table 2: Diameter of cold-rolled coil

| | |
|------------------|----------------------------------|
| Inside diameter | 610mm standard, 508mm on request |
| Outside diameter | Max 10/7 x width (limit 2800mm) |

Table 3: Thickness tolerances: EN 10131 : 1991

| Nominal thickness | | Normal tolerances for a nominal width of | | | Special tolerances (S) for a nominal width of | | |
|-------------------|------|--|----------------|-------|---|----------------|-------|
| | | ≤1200 | >1200 ≤1500 | >1500 | ≤1200 | >1200 ≤1500 | >1500 |
| > | ≤ | ± | ± | ± | ± | ± | ± |
| 0.35 | 0.40 | 0.04 | 0.05 | – | 0.025 | 0.035 | – |
| 0.40 | 0.60 | 0.05 | 0.06 | 0.07 | 0.035 | 0.045 | 0.05 |
| 0.60 | 0.80 | 0.06 | 0.07 | 0.08 | 0.040 | 0.05 | 0.05 |
| 0.80 | 1.00 | 0.07 | 0.08 | 0.09 | 0.045 | 0.06 | 0.06 |
| 1.00 | 1.20 | 0.08 | 0.09 | 0.10 | 0.055 | 0.07 | 0.07 |
| 1.20 | 1.60 | 0.10 | 0.11 | 0.11 | 0.070 | 0.08 | 0.08 |
| 1.60 | 2.00 | 0.12 | 0.13 | 0.13 | 0.080 | 0.09 | 0.09 |
| 2.00 | 2.50 | 0.14 | 0.15 | 0.15 | 0.100 | 0.11 | 0.11 |
| 2.50 | 3.10 | 0.16 | 0.17 | 0.17 | 0.110 | 0.12 | 0.12 |

Note: Dimensions are in millimetres.

Table 4: Tolerances on coil width: EN 10131 : 1991

| Nominal width | | Normal tolerances | | Special tolerances (S) | |
|---------------|-------|-------------------|------------|------------------------|------------|
| | | lower – | upper + | lower – | upper + |
| ≥750 | ≤1200 | 0 | 4 | 0 | 2 |
| >1200 | ≤1500 | 0 | 5 | 0 | 2 |
| >1500 | ≤2040 | 0 | 6 | 0 | 3 |

Note: Dimensions are in millimetres.

**Table 5: Flatness tolerances $R_{eL} < 280 \text{ N/mm}^2$
EN 10131 : 1991**

| Tolerance class | Nominal width | Nominal thickness | | |
|-----------------|---------------|-------------------|----------|------|
| | | <0.7 | ≥0.7<1.2 | ≥1.2 |
| Normal | ≥750 <1200 | 12 | 10 | 8 |
| | ≥1200 <1500 | 15 | 12 | 10 |
| | ≥1500 ≤2040 | 19 | 17 | 15 |
| Special (FS) | ≥750 <1200 | 5 | 4 | 3 |
| | ≥1200 <1500 | 6 | 5 | 4 |
| | ≥1500 ≤2040 | 8 | 7 | 6 |

Notes:

1. If sheet is ordered non skin-passed, only the normal tolerances are applicable.
2. The tolerances in this table represent maximum deviation from flatness.
3. Dimensions are in millimetres.

**Table 6: Flatness tolerances $R_{eL} \geq 280 \text{ N/mm}^2 < 360 \text{ N/mm}^2$
EN 10131 : 1991**

| Tolerance class | Nominal width | Nominal thickness | | |
|-----------------|---------------|-------------------|----------|------|
| | | < 0.7 | ≥0.7<1.2 | ≥1.2 |
| Normal | ≥750 <1200 | 15 | 13 | 10 |
| | ≥1200 <1500 | 18 | 15 | 13 |
| | ≥1500 ≤2040 | 22 | 20 | 19 |
| Special (FS) | ≥750 <1200 | 8 | 6 | 5 |
| | ≥1200 <1500 | 9 | 8 | 6 |
| | ≥1500 ≤2040 | 12 | 10 | 9 |

Notes:

1. If sheet is ordered non skin-passed, only the normal tolerances are applicable.
2. The tolerances in this table represent maximum deviation from flatness.
3. Dimensions are in millimetres.

Surface

Surface Quality

Cold-rolled steels are available in surface quality A or B to EN 10130 : 1999.

Surface quality A

Defects that do not influence the formability or the application of surface coatings are permitted. They are defects such as pores, minor scratches, slight indentations, small grooves or slight discoloration.

Surface quality B

The better side must be free of defects that can spoil the uniform appearance of a high-quality paint or of an electrolytic coating. The other side must at least conform to surface quality A.

Inspected side

As a rule, the upper side of the strip is inspected; on request, the strip can be turned over so that the underside is the inspected side.

Surface texture

Cold-rolled steel is available in several surface textures. Unless specified otherwise, Corus will supply normal roughness. Surface texture cannot be guaranteed for steel that has not been skin passed. Table 7 below shows the range of surface textures according to EN 10130 : 1999. Other surface textures may be available depending upon your requirement.

Preservative oil

The standard oil applied by Corus acts as a protective coating. Other kinds of oil may be available depending upon your requirement.

Corus offers a range of oiling levels from 0.25-1.7g/m² per side. Other levels are available on request.

Corus is not responsible for the risk of corrosion if material is ordered in the un-oiled condition.

Table 7: Roughness: EN 10130 : 1999

| Grade | Symbol | R _a (µm) cut off 0.8mm |
|-------------|--------|--------------------------------------|
| bright | b | ≤0.4 |
| semi-bright | g | ≤0.9 |
| normal | m | 0.6-1.9 |
| rough | r | >1.6 |