

## Hot-rolled products

**Hot rolling at Corus produces primary strip steel products in a range that offers extensive performance characteristics, versatility and economy, as well as steels for specific applications.**

### General

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

#### Page Steel

4	General
8	Steel for forming
10	Tenform high-strength low-alloy steel
15	Tenform carbon-manganese steel
17	Structural steel
22	Steel for gas cylinders
24	Steel for pressure vessels
27	Steel for pipes
28	Ship plate
29	High-carbon steel
30	Durbar floor plate
32	Actis cut lengths for automated precision processing

### Grades

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

### Typical applications

- automotive components
- tubes and sections
- ship plate
- bridge components
- pressure vessels and boilers
- domestic appliances
- industrial furniture
- slip-resistant floor plate
- yellow goods
- components for building and construction
- feed stock for cold-rolled, galvanised and packaging steels

### Coil condition

Corus can supply hot-rolled steel in the following conditions:

#### Hot-rolled coil:

Mill edges

Trimmed edges (on request)

Skin-passed (on request); available in thicknesses  $\leq 6.25\text{mm}$

#### Pickled and oiled coil:

Mill edges

Trimmed edges

#### Pickled dry (on request):

Mill edges

Trimmed edges

## Overall thickness and width limits

The overall thickness and width limits for hot-rolled products are shown in table 1 on page 6. The limits for specific products are shown under individual product headings throughout the hot-rolled section.

## Coil diameters

The coil diameters that apply to hot-rolled coil are shown in table 2 on page 6.

## Coil weight

The maximum weight of hot-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):  $10/7 \times$  coil width (limit of 2100mm)
- Maximum weight allowed by road/rail transport

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

Particular hot-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

Tolerances for continuously hot-rolled uncoated plate, sheet and strip of non-alloy and alloy steels are given in EN 10051 : 1991+A1 : 1997.

### Tolerances for wide strip and slit wide strip

The values in EN 10051 : 1991+A1 : 1997 do not apply to the uncropped ends of the coil, i.e. the 'head' and 'tail'. The maximum length (in metres) of these ends can be equal to  $90/\text{nominal thickness (mm)}$ , but will not exceed 20 metres in total.

### Thickness

The thickness tolerances shown in table 3 on page 6 are from EN 10051 : 1991+A1 : 1997 and are for hot-

rolled steel with normal deformation resistance. The tolerances for grades with yield strengths greater than  $350\text{N/mm}^2$  can be calculated as shown in note 1 to table 3.

Corus generally supplies hot-rolled coil to tighter tolerances than those in EN 10051 : 1991+A1 : 1997, typically within 75% of the values in table 3. If improved tolerances are required, they must be agreed with Corus before ordering.

For cold-forming steels supplied to EN 10111 : 1998, the thickness tolerances are shown in table 4 on page 6.

### Crown values

Maximum crown value can be agreed between the customer and Corus when the material is ordered.

### Coil width

The coil width tolerances in table 5 on page 7 are from EN 10051 : 1991+A1 : 1997.

### Flatness

Flatness complies with EN 10051 : 1991+A1 : 1997 as shown in table 6 for steel grades with normal deformation resistance and table 7 for high deformation resistance, both on page 7.

### Edge camber

For strip that is 700mm wide or more, the deviation over a length of 5 metres will not exceed 20mm for mill edges and 15mm for trimmed edges.

## Surface

Hot-rolled steel is available in mill finish or pickled condition and can be supplied for surface-critical applications.

Pickled material can be supplied with rolling oil or preservative oil, normally from  $1.7\text{g/m}^2$  to  $2.3\text{g/m}^2$ , or with less oil on request.

If the level of oiling required is not specified in the order, a normal amount of oil will be applied.

**Table 1: Thickness and width limits**

Product	Product form	Thickness		Width	
		Min	Max	Min	Max
Hot-rolled dry	Mill finish	1.47	20.00	700	2070
Hot-rolled dry	Trimmed edges	1.50	10.00	700	2060
Hot-rolled pickled	Pickled & oiled, mill edge	1.50	6.00	735	2070
Hot-rolled pickled	Pickled & oiled, trimmed edges	1.50	6.00	735	2060

**Note:** Dimensions are in millimetres.

**Table 2: Diameter of hot-rolled coil**

Inside diameter, mill finish	762mm
Inside diameter, pickled and trimmed	610mm standard, 762mm on request
Tolerance on inside diameter	+0/-50mm
Outside diameter	Max 10/7 x width (limit 2100mm)

**Table 3: Thickness tolerances**

**Normal deformation resistance**

**EN 10051 : 1991+A1 : 1997**

Nominal thickness		Tolerances for a nominal width of			
		≤1200	>1200 ≤1500	>1500 ≤1800	>1800
>	≤	±	±	±	±
1.47	2.00	0.17	0.19	0.21	–
2.00	2.50	0.18	0.21	0.23	0.25
2.50	3.00	0.20	0.22	0.24	0.26
3.00	4.00	0.22	0.24	0.26	0.27
4.00	5.00	0.24	0.26	0.28	0.29
5.00	6.00	0.26	0.28	0.29	0.31
6.00	8.00	0.29	0.30	0.31	0.35
8.00	10.00	0.32	0.33	0.34	0.40
10.00	12.50	0.35	0.36	0.37	0.43
12.50	15.00	0.37	0.38	0.40	0.46
15.00	20.00	0.40	0.42	0.45	0.50

**Notes:**

1. Tolerances on steel grades with a specified yield strength >350 N/mm<sup>2</sup> are increased by 15%, >420 N/mm<sup>2</sup> by 30%, and >480 N/mm<sup>2</sup> by 40%.
2. Dimensions are in millimetres.

**Table 4: Thickness tolerances**

**Cold forming steels**

**EN 10051 : 1991+A1 : 1997**

Nominal thickness		Tolerances for a nominal width of			
		≤1200	>1200 ≤1500	>1500 ≤1800	>1800
>	≤	±	±	±	±
1.47	2.00	0.13	0.14	0.16	–
2.00	2.50	0.14	0.16	0.17	0.19
2.50	3.00	0.15	0.17	0.18	0.20
3.00	4.00	0.17	0.18	0.20	0.20
4.00	5.00	0.18	0.20	0.21	0.22
5.00	6.00	0.20	0.21	0.22	0.22
6.00	8.00	0.22	0.23	0.23	0.26

**Note:** Dimensions are in millimetres.

**Table 5: Tolerances on coil width****EN 10051 : 1991+A1 : 1997**

Nominal width		Mill edge		Trimmed edge	
		lower –	upper +	lower –	upper +
≥700	≤1200	0	20	0	3
>1200	≤1500	0	20	0	5
>1500	≤2070	0	20	0	6

Note: Dimensions are in millimetres.

**Table 6: Flatness tolerances****Normal deformation resistance****EN 10051 : 1991+A1 : 1997**

Nominal thickness	Nominal width		Tolerance class	
			Normal tolerances	Special tolerances
≤2	–	≤1200	18	9
	>1200	≤1500	20	10
	>1500	–	25	13
>2≤25	–	≤1200	15	8
	>1200	≤1500	18	9
	>1500	–	23	12

Notes:

1. The tolerances in this table represent maximum deviation from flatness.
2. Dimensions are in millimetres.

**Table 7: Flatness tolerances****High deformation resistance****EN 10051 : 1991+A1 : 1997**

Nominal thickness	Nominal width		Tolerance class		
			B	C	D
≤25	–	≤1200	18	23	Note 1
	>1200	≤1500	23	30	Note 1
	>1500	–	28	38	Note 1

Notes:

1. This tolerance shall be agreed at the time of enquiry and order.
2. Tolerance classes B, C and D represent grades with an increased resistance to high temperature deformation.
3. The tolerances in this table represent maximum deviation from flatness.
4. Dimensions are in millimetres.