

BS EN 10051 : 1992

Continuously hot-rolled uncoated plate, sheet and strip of non-alloy and alloy steels.

Tolerances for sheet and plate

Thickness

The tolerances on thickness for continuously hot-rolled low carbon steel sheet/plate for cold forming according to EN 10111 are given in table 1.

Table 1. Tolerance on thickness for continuously hot-rolled low carbon steel sheet/plate for cold forming - dimensions in mm				
Nominal thickness	Tolerances for a nominal width			
	≤ 1200	> 1200 ≤ 1500	> 1500 ≤ 1800	> 1800
≤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

Length

The tolerance on length shall be as given in table 2.

Table 2. Tolerance on length - dimensions in mm		
Nominal length	Tolerances	
	Lower	Upper
<2000	0	+10
≥2000 <8000	0	+0.005 x nominal length
≥8000	0	+40

Width

The tolerances on width for sheet/plate shall be as given in table 3.

Table 3. Tolerance on width for sheet/plate dimensions in mm				
Nominal length	Tolerances			
	Mill edges		Trimmed edges (1)	
	Lower	Upper	Lower	Upper
≤1200	0	+20	0	+3
> 1200 ≤1500	0	+20	0	+5
> 1500	0	+20	0	+6

(1) Tolerances for trimmed edges apply to products with nominal thicknesses ≤ 10 mm, for nominal thickness > 10 mm the upper tolerances shall be agreed at the time of enquiry and order.

Out-of-squareness

The out-of-squareness u (the orthogonal projection of a transverse edge over a longitudinal edge) shall not exceed 1% of the actual width of the sheet/plate.

Edge camber

The edge camber shall not exceed 0.5% of the actual length of the sheet/plate for a nominal length < 5000 mm.

For sheet/plate with a nominal length 5000 mm and widths ≥ 600 mm, the edge camber shall not exceed 20 mm for any length of 5000 mm in the case of sheet/plate with mill edges and 15 mm in the case of sheet with trimmed edges.

Superimposition of dimensions

By agreement at the time of enquiry and order the tolerances on out-of-squareness and edge camber may be replaced by a requirement that a perfect rectangle formed by the ordered width and length dimensions can be superimposed into the sheets delivered.

(Whether the tolerances on out-of squareness and edge camber shall be replaced by a requirement that a perfect rectangle formed by the ordered width and length dimensions can be superimposed into the sheets delivered.)



Tolerances for wide strip and strip slit from wide strip

General

The specified values for tolerances shall not apply to the uncropped ends of the coil for the total length l which is calculated using the formula:

$$l \text{ (m)} = \frac{90}{\text{Nominal thickness (mm)}}$$

provided that the result does not exceed 20 m.

Thickness

The tolerances on thickness shall be the same as those for sheet/plate.

For hot-rolled strip, permissible thickness differences within one coil are given in table 4. These shall apply if agreed at the time of enquiry and order.

The thickness (within one coil) shall change gradually; the changes should not be discontinuous.

More severe tolerances on thickness and crown may be agreed at the time of enquiry and order. (Whether more severe tolerances on thickness and corn are required.)

Width

The tolerances on width for strip shall be the same as the sheet/plate.

Flatness

Requirements concerning flatness shall be agreed at the time of enquiry and order.

NOTE. Any requirements agreed shall take into account the processing equipment at the user's disposal.

Table 4. Permissible thickness differences within one coil for hot-rolled strip for cold rolling - dimensions in mm

Nominal thickness	Permissible thickness differences for nominal width of strip		
	≤ 1200	> 1200 ≤ 1500	> 1500 < 2200
≥0.8 ≤ 2.0	0.20	0.24	0.28
>2.0 ≤ 3.0	0.22	0.27	0.33
>3.0 ≤ 4.0	0.28	0.32	0.40
>4.0 ≤ 8.0	0.28	0.32	0.40

Edge camber

For strip ≥ 600 mm, the edge camber shall not exceed 20 mm for any length of 5000 mm in the case of strip with mill edges and 15 mm in the case of strip with trimmed edges.

For strip < 600 mm wide slit from wide strip, the tolerances on edge camber shall be agreed at the time of enquiry and order.

