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PEOPLE'S REPUBLIC OF CHINA

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GB/T 708-2019

Replacing GB/T 708-2006

**Dimension, shape, weight and
tolerance for cold-rolled steel strip and sheet**

冷轧钢板和钢带的尺寸、外形、重量及允许偏差

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Foreword

This Standard is drafted in accordance with the rules given in GB/T 1.1-2009.

This Standard replaces GB/T 708-2006 “Dimension, shape, weight and tolerance for cold-rolled steel plates and sheets”.

Compared with GB/T 708-2006, the main technical changes of this Standard are as follows:

- MODIFY the thickness and width ranges of steel sheets and strips (see 5.1 of this Standard, 5.1 of 2006 edition);
- MODIFY the thickness tolerance of steel sheets and strips, which is specified respectively according to the specified minimum yield strength $R_e < 260 \text{ MPa}$, $260 \text{ MPa} \leq R_e < 340 \text{ MPa}$, $340 \text{ MPa} \leq R_e \leq 420 \text{ MPa}$, $R_e > 420 \text{ MPa}$ (see Table 2, Table 3, Table 4, Table 5 of this Standard, Table 2 of 2006 edition);
- ADD the higher precision (PW.B) of width tolerance of slit wide strips and its requirements; MODIFY the width tolerance of slit wide strips (see 6.2.3 of this Standard, 6.2.2 of 2006 edition);
- MODIFY the flatness of steel sheets and strips according to the specified minimum yield strength $R_e < 280 \text{ MPa}$, $280 \text{ MPa} \leq R_e < 360 \text{ MPa}$, $R_e < 260 \text{ MPa}$, $260 \text{ MPa} \leq R_e < 340 \text{ MPa}$; MODIFY the requirements for flatness (see 7.1 of this Standard, 7.1 of 2006 edition);
- ADD the requirement that steel sheets and strips are supplied according to general precision when the thickness tolerance, width tolerance, length tolerance and flatness are default (see 6.1.6, 6.2.2, 6.3, 7.1.1);
- ADD the negotiation terms when the yield strength and requirements are not specified in the thickness tolerance and flatness requirements of steel sheets and strips in the product standard (see 6.1.5, 7.1.5);
- MODIFY the requirements for camber (see 7.2 of this Standard, 7.2 of 2006 edition);
- MODIFY the “cutting angle” to “out-of-squareness”; ADD the method and requirements for the measurement of out-of-squareness using the diagonal method (see 7.3 of this Standard, 7.3 of 2006 edition);
- ADD the requirements for the measurement position of flatness of steel strips (see 8.3.3);

Dimension, shape, weight and tolerance for cold-rolled steel strip and sheet

1 Scope

This Standard specifies terms and definitions, classification and code, dimensions, dimension tolerances, shape requirements, measurement of dimensions and shape, weight and rounding off of numerical values of cold-rolled steel sheets and strips.

This Standard applies to cold-rolled wide strips, slit wide strips and sheets cut from strip of which the rolling width is not less than 600 mm (hereinafter referred to as steel sheets and strips). Steel plates may also refer to this Standard.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 8170 Rules of rounding off for numerical values & expression and judgement of limiting values

3 Terms and definitions

For the purpose of this document, the following terms and definitions apply.

3.1

wide strip

Steel strips with a width of not less than 600 mm and delivered in rolls.

3.2

slit wide strip

Slit from wide strips and delivered in rolls.

3.3

sheet cut from strip

Cut from steel strips and delivered in sheets.

3.4

plate

Cold-rolled flat steel that is directly rolled and does not have fixed edge deformation.

4 Classification and code

4.1 Classification according to edge state is as follows:

- a) cut-edge, EC;
- b) mill-edge, EM.

4.2 Classification according to dimension precision and code is as follows:

- a) general precision of thickness, PT.A;
- b) higher precision of thickness, PT.B;
- c) general precision of width PW.A;
- d) higher precision of width, PW.B;
- e) general precision of length, PL.A;
- f) higher precision of length, PL.B.

4.3 Classification according to flatness precision and code is as follows:

- a) general precision of flatness, PF.A;
- b) higher precision of flatness, PF.B.

4.4 Classification of dimensions and precision of flatness corresponding to product shape and edge state is shown in Table 1.

Table 8 -- Length tolerance of steel sheets

Dimensions in millimeters

Nominal length	Length tolerance	
	General precision PL.A	Higher precision PL.B
$\leq 2\,000$	$\begin{matrix} +6 \\ 0 \end{matrix}$	$\begin{matrix} +3 \\ 0 \end{matrix}$
$> 2\,000$	$\begin{matrix} + 0.3 \% \times \text{nominal length} \\ 0 \end{matrix}$	$\begin{matrix} + 0.15 \% \times \text{nominal length} \\ 0 \end{matrix}$

7 Shape

7.1 Flatness

7.1.1 The flatness of steel sheets shall comply with the requirements of Table 9. If the demand party requires supply according to the higher precision of flatness (PF.B), it shall be indicated in the contract. If not indicated, supply according to the general precision of flatness (PF.A).

7.1.2 The flatness of steel sheets, of which the minimum yield strength R_e is specified to be not less than 340 MPa, shall be agreed upon between the supply and demand parties.

7.1.3 For steel sheets with a specified minimum yield strength R_e less than 260 MPa, when supplied according to the higher precision of flatness (PF.B), the side waves shall be inspected in the case of arbitration. The side waves shall meet the following requirements:

- a) When the wave length is not less than 200 mm, for steel sheets with a nominal width of less than 1500 mm, the wave height shall be less than 1.0 % of the wave length; for steel sheets with a nominal width of not less than 1500 mm, the wave height shall be less than 1.5 % of the wave length.
- b) When the wave length is less than 200 mm, the wave height shall be less than 2 mm.

7.1.4 When the user has requirements for the flatness of steel strips, after the user has fully flattened the steel strips, the values specified in Table 9 are also applicable to steel sheets cut by the user from the steel strips.

7.1.5 When the yield strength is not specified in the product standard and the flatness is not specified, the flatness of steel sheets and strips shall be agreed upon between the supply and demand parties and shall be indicated in the contract.

8 Measurement of dimensions and shape

8.1 Thickness

8.1.1 For mill-edge steel sheets and strips, it is measured at a distance of not less than 40 mm from the rolling side. For cut-edge steel sheets and strips, it is measured at a distance of not less than 25 mm from the cutting side.

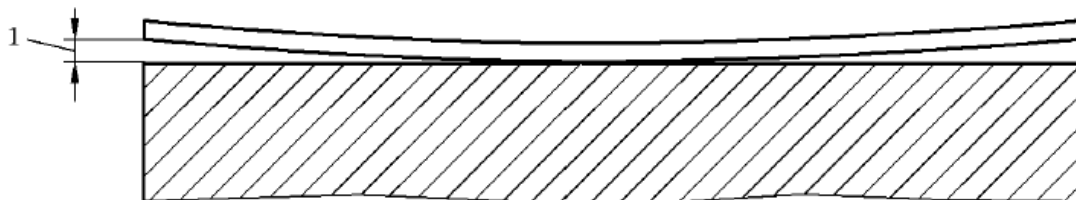
8.1.2 When the width of the slit wide strip is less than 50 mm, it is measured at the center along the width direction.

8.2 Width

The width shall be measured at where perpendicular to the centerline of steel sheets and strips.

8.3 Flatness

8.3.1 Place the steel sheet freely on a platform. Except for the weight of the steel sheet itself, do not apply any pressure. Measure the maximum distance between the lower surface of the steel sheet and the platform, as shown in Figure 1.



Key:
1 - flatness.

Figure 1 -- Measurement of flatness

8.3.2 If limited by the length of the test platform, for steel sheets with a length greater than 2000 mm, it may arbitrarily take 2000 mm for the measurement of flatness instead of measuring the flatness of full length.

8.3.3 For steel strips, the flatness shall be measured at a distance of more than 5000 mm from the head or tail of the steel strip.

8.4 Camber

The camber of steel sheets and strips refers to the maximum distance between the side and the straight line connecting the two ends of the measuring portion.

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