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Replacing GB/T 702-2008

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**Hot-rolled steel bars - Dimensions,  
shape, weight and tolerances**

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## Foreword

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

This Standard replaces GB/T 702-2008 “Hot-rolled steel bars - Dimensions, shape, weight and tolerances”, and compared with GB/T 702-2008, the main changes are as follows:

- ADJUST the range of hot-rolled round steel bars and square steels;
- ADJUST the tolerances on dimensions of hot-rolled round steels and square steels;
- DELETE the provision on the full length of hot-rolled steel bars of general quality;
- ADJUST the provision on the misshaped cutting at both ends of hot-rolled round steels and square steels;
- ADD the provision on the fillet radius of hot-rolled flat steels;
- ADJUST the provision on the curvature of hot-rolled hexagonal steels and hot-rolled octagonal steels;
- ADJUST the provision on the misshaped cutting of hot-rolled hexagonal steels and hot-rolled octagonal steels;
- DELETE the example of marking.

This Standard is proposed by China Iron and Steel Association.

This Standard is under the jurisdiction of National Technical Committee on Steel of Standardization Administration of China (SAC/TC 183).

Drafting organizations of this Standard: Beiman Special Steel Co., Ltd. of Dongbei Special Steel Group, China Metallurgical Information and Standardization Institute, Jiangyin Xingcheng Special Steel Co., Ltd., Shougang Group, Fushun Special Steel Shares Co., Ltd.

Main drafters of this Standard: Qian Chengyun, Wang Yujie, Chen Qinghua, Xiong Huabing, Gu Qiang, Liu Baoshi, Zhang Jinfeng.

The historical editions of the standard replaced by this Standard are as follows:

- GB/T 702-1965, GB/T 702-1972, GB/T 702-1986, GB/T 702-2004, GB/T 702-2008;
- GB/T 704-1983, GB/T 704-1989;
- GB/T 705-1983, GB/T 705-1990;

# Hot-rolled steel bars - Dimensions, shape, weight and tolerances

## 1 Scope

This Standard specifies the cross-sectional shape, cross-sectional dimensions, weight and tolerances, length and tolerances, appearance, etc. of hot-rolled steel bars (round steels, square steels, flat steels, hexagonal steels, octagonal steels).

This Standard applies to hot-rolled round steels with the diameter of 5.5 mm ~ 380 mm and hot-rolled square steels with the side length of 5.5 mm ~ 300 mm; hot-rolled flat steels for general purposes with the thickness of 3 mm ~ 60 mm and the width of 10 mm ~ 200 mm; hot-rolled tool flat steels with the thickness of 4 mm ~ 100 mm and the width of 10 mm ~ 310 mm (hot-rolled flat steels and hot-rolled tool flat steels for general purposes are generally referred to as hot-rolled flat steels); hot-rolled hexagonal steels with the distance across flats of 8 mm ~ 70 mm and hot-rolled octagonal steels with the distance across flats of 16 mm ~ 40 mm.

## 2 Cross-sectional shape

2.1 The cross-sectional shape of hot-rolled round steels and square steels is shown in Figure 1.

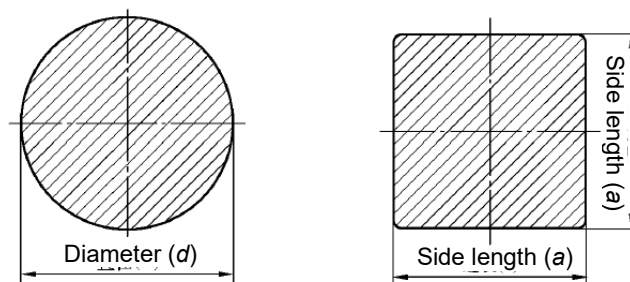


Figure 1 -- Schematic diagram of cross-section of hot-rolled round steels and square steels

2.2 The cross-sectional shape of hot-rolled flat steels is shown in Figure 2.

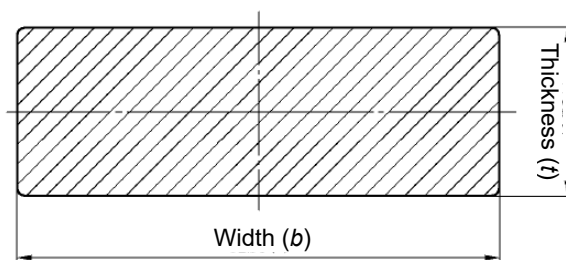


Figure 2 -- Schematic diagram of cross-section of hot-rolled flat steels

2.3 The cross-sectional shape of hot-rolled hexagonal steels and hot-rolled octagonal steels is shown in Figure 3.

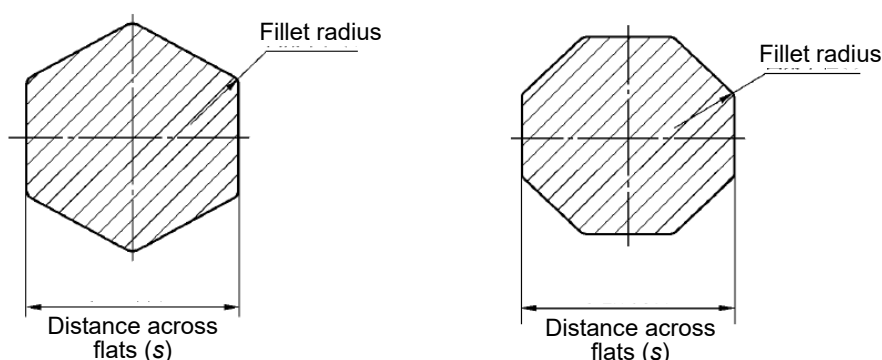


Figure 3 -- Schematic diagram of cross-section of hot-rolled hexagonal steels and hot-rolled octagonal steels

### 3 Cross-sectional dimensions, weight and tolerances

#### 3.1 Dimensions and weight

3.1.1 The dimensions and theoretical weight of hot-rolled round steels and square steels shall comply with the provisions of Table A.1 in Annex A.

3.1.2 The dimensions and theoretical weight of hot-rolled flat steels for general purposes shall comply with the provisions of Table A.2.

3.1.3 The dimensions and theoretical weight of hot-rolled tool flat steels shall comply with the provisions of Table A.3.

3.1.4 The dimensions and theoretical weight of hot-rolled hexagonal steels and hot-rolled octagonal steels shall comply with the provisions of Table A.4.

3.1.5 Negotiated by both supply and demand parties and indicated in the contract, steel bars with other dimensions not specified in the table of Annex A may also be supplied.

**Table 6 -- Length of hot-rolled flat steels for general purposes**

In millimeters

Full length	Tolerances on cue length or multiple length		Short length
2 000~12 000	≤4 000	+30	≥1 500
	>4 000~6 000	+50	
	>6 000	+70	

4.3 The full length and short length of hot-rolled tool flat steels shall comply with the provisions of Table 7. The tolerance on length of hot-rolled tool flat bars delivered on cut length or multiple length is  $\begin{matrix} +100 \\ 0 \end{matrix}$  mm.

**Table 7 -- Full length and short length of hot-rolled tool flat steels**

In millimeters

Nominal width	Full length	Short length
≤50	≥2 000	≥1 500

**Table 7 (continued)**

In millimeters

Nominal width	Full length	Short length
>50~70	≥2 000	≥750
>70	≥1 000	—

4.4 The full length and short length of hot-rolled hexagonal steels and hot-rolled octagonal steels shall comply with the provisions of Table 8. The tolerance on cut length or multiple length is  $\begin{matrix} +50 \\ 0 \end{matrix}$  mm.

**Table 8 -- Full length and short length of hot-rolled hexagonal steels and hot-rolled octagonal steels**

In millimeters

Full length	Short length
2 000~6 000	≥1 500

4.5 Negotiated by both supply and demand parties, and indicated in the contract, the length of steel bars may be implemented according to the special requirements other than those specified Table 5, Table 6, Table 7 and Table 8.

4.6 The delivery volume of steel bars of short length shall not exceed 10 % of the total weight of this batch of steel bars.

**5.1.6** The misshaped cutting at both ends of hot-rolled round steels and square steels shall not be greater than 15 % of the nominal diameter of round steels or the nominal side length of square steels. Hot-rolled round steel and square steel ends cut with a shear allow partial deformation.

## 5.2 Hot-rolled flat steels

**5.2.1** For hot-rolled tool flat steels, the curvature per meter shall not exceed 5 mm, the total curvature shall not be greater than 0.50 % of the total length, the lateral curvature (camber) per meter shall not exceed 5 mm, and the total lateral curvature shall not be less than 0.50 % of the total length. The curvature of hot-rolled flat steels for general purposes shall comply with the provisions of Table 11. The group of curvature shall be indicated in the corresponding product standards or order contract, if not indicated, Group 2 shall prevail. Negotiated by both supply and demand parties, and indicated in the contract, steel bars with curvatures not specified in Table 11 may also be supplied.

**Table 11 -- Curvature of hot-rolled flat steels for general purposes**

In millimeters

Group	Curvature not greater than	
	Curvature per meter	Total curvature
Group 1	2.5	0.25 % of steel bar length
Group 2	4.0	0.40 % of steel bar length

**5.2.2** Hot-rolled flat steel ends shall be cut to be straight. The misshaped cutting of hot-rolled flat steels for general purposes shall not exceed the following provisions: for hot-rolled flat steels for general purposes with the width not greater than 100 mm, the misshaped cutting shall not be greater than 6 mm; for hot-rolled flat steels for general purposes with the width greater than 100 mm, the misshaped cutting shall not be greater than 8 mm. Burrs on both ends of hot rolled tool flat steels shall be removed, but burrs not larger than 5 mm are allowed. Hot-rolled tool flat steels are cut with a press machine, and it allows partial deformation at both ends.

**5.2.3** Hot-rolled flat steels shall not be significantly reversed. For hot-rolled tool flat steels, the difference between the two diagonal lengths in the same cross-section shall not be greater than the tolerance on width. Slight blunt edges are allowed for hot-rolled tool flat steels.

**5.2.4** The irregularity of cross-sectional shape of hot-rolled flat steels is as shown in Figure 4 (a), Figure 4 (b), Figure 4 (c) and Figure 4 (d) below. The maximum allowable dimension C value shall comply with the provisions of Table 12.

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