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National Standard of the People's Republic of China

GB/T 6728-2002

In placed of GB/T 6728-1986

结构用冷弯空心型钢
尺寸、外形、重量及允许偏差

Cold formed steel hollow sections for general
structure-Dimensions, shapes, weight and permissible
deviations

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Forward

The Standard GB/T 6728-2002 *Cold formed steel hollow sections for general structure-Dimensions, shapes, weight and permissible deviations* is product various Standard series of cold formed steel hollow sections for general structure, the relevant technical condition standard is GB/T 6725-2002 *Cold-formed Steel*.

The square and rectangular cold formed steel hollow of this Standard is corresponding to EU Standard EN 10219-2-1997 *Cold formed welded structural sections of non-alloy and fine grain steels. Part II: Tolerances, dimensions and sectional properties*, the round cold formed steel hollow is corresponding to ISO 4019: 1982 *Cold-finished steel structural hollow sections -- Dimensions and sectional properties*. This Standard is not equivalent to EN 10219-2-1997 and ISO 4019: 1982 in the respect of consistency.

The main differences between this Standard and EN 10219-2-1997 *Cold formed welded structural sections of non-alloy and fine grain steels. Part II: Tolerances, dimensions and sectional properties* are as follows:

- It has added the specification of outer diameter is 610mm for round cold formed steel hollow;
- Not stipulates the un-roundness allowable deviation of round cold formed steel hollow;
- It has added the group interval and specification of square and rectangular cold formed steel hollow;
- Tighten the plane concavo-convex allowable deviation of square and rectangular cold formed steel hollow;
- Reduced the bending angle allowable deviation of square and rectangular cold formed steel hollow;
- Reduced the curvature allowable deviation of square and rectangular cold formed steel hollow;
- The group interval of bending angle outer arc radius R or (C₁, C₂) value is different from that of square and rectangular cold formed steel hollow;
- It has added the various of special shaped cold formed steel hollow, not stipulates that specific shape and dimension;
- Adjusted the allowable deviation of fixed length for cold formed steel hollow;
- It has added the allowable value of weight deviation on cold formed steel hollow.

The main differences between this Standard and ISO 4019: 1982 *Cold-finished steel structural hollow sections -- Dimensions and sectional properties* as follows:

- Adjusted the outer diameter of round cold formed steel hollow;
- It has added the specification of outer diameter is 610mm for round cold formed steel hollow;
- It has added the group interval and specification of square and rectangular cold formed steel hollow;
- Tighten the allowable deviation of shape dimension;
- It has added the minimum allowable deviation value of wall thickness of cold formed steel hollow;
- The group interval of bending angle outer arc radius R or (C₁, C₂) value is different from that of square and rectangular cold formed steel hollow; and stipulates the different

requirements for carbon steel and low-alloy steel respectively;

- Tighten the allowable deviation of angle of square and rectangular cold formed steel hollow;
- Tighten the allowable deviation of plane concavo-convex of square and rectangular cold formed steel hollow;
- It has added the various of special shaped cold formed steel hollow, not stipulates that specific shape and dimension;
- Adjusted the allowable deviation of normal fixed length for cold formed steel hollow;
- It has added the allowable deviation value of weight deviation on cold formed steel hollow.

This Standard replaced of GB/T 6728-1986 *Cold formed steel hollow sections for general structure-Dimensions, shapes, weight and permissible deviations* since implementation date

This Standard has the following main changes in comparison with GB/T 6728-1986:

- It has added the outer diameter specification is 21.3mm~610mm for round cold formed steel hollow
- Expanded the specification range of square cold formed steel hollow, added side length of 170mm×170mm~500mm×500mm;
- Expanded the specification range of rectangular cold formed steel hollow, added side length of 200mm×120mm~600mm×400mm;
- Added the thickness of 10mm, 12mm, 14mm and 16mm;
- Added the special shaped cold formed steel hollow, and the shape and dimension determined by agreement of supplier and buyer;
- The dimension allowable deviation specifies the percentage value which thickness deviation not exceed than nominal thickness;
- The dimension allowable deviation specifies the upper-lower limit value of arc radius on angle site, and specifies the measurement method;
- The dimension allowable deviation specifies the allowable value of concavo-convex of section and plane part;
- Cancelled the normal precision on dimension precision;
- Tightened the length allowable deviation of normal fixed length precision;
- The delivery proportion of non-fixed length and short length tube specifies the clear value, and added the delivery system by interface tube;
- Stipulated the allowable value and measurement method of curvature for cold formed steel;
- Stipulated the allowable value of shearing oblique for the end of cold formed steel

The Appendix A of this Standard is Informative appendix.

This Standard is proposed by China Iron & Steel Association;

This Standard is governed by National Steel Standardization Technical Committee;

Main draft units of this Standard are Shanghai Institute of Iron and Steel Technology Baosteel Group Corporation Limited, Steel Rolling Plant of Wuhan Steel Group, Guangzhou Steel Tube Plant Co., Ltd;

Main drafters of this Standard are Qian Weizhong, Wang Daqi, Zhu Shaowen, Li Jianzhang and Zhang Xiufang

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1 Scope

This Standard specifies the range, classification, code, technical requirements, dimension, shape, weight, allowable deviation and labeling of cold formed steel hollow section for general structure

This Standard is applicable to cold formed steel which produced through cold or hot rolled steel plates and strips on continuous roller-type cold-bending mill by cold working deformation

The cold formed steel hollow section in this Standard mainly uses high-frequency resistance welding, can also use argon arc welding or other welding methods.

This Standard is not applicable to the cold formed steel which produced by drawing, stamping and fold bending, etc.

2 Classification and Code

The section steel is divided into round, square, rectangular and other special-shaped cold formed steel hollow section as per outer shape. That code is:

Round cold formed steel hollow section, abbr. Round pipe Code: Y

Square cold formed steel hollow section, abbr. Square pipe Code: F

Rectangular cold formed steel hollow section, abbr. Rectangular pipe Code: YI

3 Section Dimension and Allowable Deviation

3.1 The section of round cold formed steel hollow refers to Figure 1, and the section dimension, section area, theoretical weight and section feature shall conform to the regulations of Table 1.

3.2 The section of square cold formed steel hollow refers to Figure 1, and the section dimension, section area, theoretical weight and section feature shall conform to the regulations of Table 2.

3.3 The section of rectangular cold formed steel hollow refers to Figure 1, and the section dimension, section area, theoretical weight and section feature shall conform to the regulations of Table 3.

3.4 The section dimension and allowable deviation of special-shaped cold formed steel hollow section (Special-shaped pipe) referring to the square cold formed steel. The shape determined by agreement of supplier and buyer.

3.5 It can supply the cold formed steel beyond the Table 1, Table 2 and Table 3 according to the buyer's request; the dimension allowable deviation shall be accordance with the adjacent small dimension deviation in Table.

3.6 The allowable deviation of wall thickness of cold formed steel shall be no more than $\pm 10\%$ of nominal wall thickness when the wall thickness less than 10mm. The allowable deviation is $\pm 8\%$ of wall thickness when wall thickness more than 10mm, except the wall thickness of angle and welding zone

3.7 The deviation of bending angle of cold formed steel shall be no more than $\pm 1.5^\circ$.

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