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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 3091-2025

Replacing GB/T 3091-2015

Welded steel pipes for low pressure fluid delivery

低压流体输送用焊接钢管

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1 Scope

This document specifies the order content, dimensions, shape, weight and allowable deviation, technical requirements, test methods, inspection rules, packaging, marking, storage and quality certification for welded steel pipes for low pressure fluid delivery.

This document applies to straight-seam high-frequency electric welded (HFW) steel pipes, straight-seam submerged-arc welded (SAWL) steel pipes and spiral-seam submerged-arc welded (SAWH) steel pipes for low pressure fluid delivery of water, air, steam and gas, as well as galvanized steel pipes (hereinafter referred to as "steel pipes").

2 Normative references

GB/T 222

GB/T 223.9

GB/T 223.12

GB/T 223.14

GB/T 223.23

GB/T 223.26

GB/T 223.37

GB/T 223.40

GB/T 223.53

3 Terms and definitions

For the purposes of this document, the terms and definitions given in GB/T 30062 apply.

4 Order content

The contract or order for steel pipes under this document shall include at least the following.

- a) a reference to this document;
- b) product name;
- c) steel designation (including the grade);
- d) ordering quantity (total weight or total length);
- e) dimensions (nominal outside diameter x nominal wall thickness, in millimeters);
- f) length;

5.1.1 Steel pipes are delivered according to nominal outside diameter (D) and nominal

wall thickness (t). For steel pipes with a nominal outside diameter not exceeding 219.1 mm (excluding steel pipes with threaded or grooved ends), their nominal outside diameter, nominal wall thickness and allowable deviation shall comply with the provisions of Table 1.

5.1.2 For steel pipes with a nominal outside diameter greater than 219.1 mm, their nominal outside diameter and nominal wall thickness shall comply with the provisions of GB/T 17395, and the allowable deviations of the nominal outside diameter and nominal wall thickness shall comply with the provisions of Table 2.

5.1.3 For steel pipes with threaded or grooved ends, the nominal outside diameter and nominal wall thickness are given in Appendix A. The allowable deviations of the outside diameter and wall thickness shall comply with the requirements of Table 1.

5.2.1 Random length

The random length of steel pipes shall be 3 000 mm ~ 12 000 mm.

5.2.2 Specific length

The specific length of steel pipes shall be within the random length range. The allowable deviation of the specific length of straight-seam high-frequency electric welded steel pipes is +15 0 mm; the allowable deviation of the specific length of submerged-arc welded steel pipes is +50 0 mm.

5.3.2 Out-of-roundness

The out-of-roundness of steel pipes (the difference between the maximum and minimum outside diameters of the same transverse plane) shall comply with the requirements of Table 3.

5.3.3 End shape

5.3.3.1 The two ends of the steel pipe shall be cut flat; the end face bevel shall not be greater than 3 mm; the cut burrs shall be removed.

5.3.3.2 As required by the buyer, negotiated between the supplier and the buyer, and indicated in the contract, the pipe ends may be threaded in accordance with the provisions of GB/T 7306.2.

5.3.4 Other shapes

As required by the buyer, negotiated between the supplier and the buyer, and indicated in the contract, steel pipes of other shape requirements can be supplied.

5.4.1 Steel pipes are delivered according to actual weight. After negotiation between

the supplier and the buyer, steel pipes can also be delivered according to the theoretical weight.

5.4.2 The theoretical weight of steel pipes is calculated according to Formula (1) (the density of steel is 7.85 kg/dm³).

6.1.1 The steel designation and chemical composition (melting analysis) shall conform

to the requirements for Q195, Q215A, Q215B, Q235A, Q235B, Q275A, and Q275B in GB/T 700, as well as Q355B in GB/T 1591, respectively. As required by the buyer, and negotiated between the supplier and the buyer, steel pipes of other designations can also be supplied.

6.2 Raw material requirements

The steel strips and steel plates used to manufacture steel pipes shall comply with the

requirements of GB/T 709, GB/T 3274 and GB/T 3524 respectively; zinc ingots shall comply with the requirements of GB/T 470. As required by the buyer, negotiated between the supplier and the buyer, and indicated in the contract, raw materials of other requirements may also be used.

6.3 Manufacturing methods of steel pipes

Steel pipes shall be manufactured by straight-seam high-frequency electric welding, straight-seam submerged-arc welding or spiral-seam submerged-arc welding.

6.4 Delivery state

6.4.1 Steel pipes are delivered in welded or hot-dip galvanized state.

6.6.1 Bending

Straight-seam high-frequency electric welded steel pipes with a nominal outside diameter not exceeding 60.3 mm shall be subjected to a bending test. During the test, the sample shall not have fillers; the bending radius shall be 6 times the nominal outside diameter of the steel pipe; the bending angle shall be 90°; the weld shall be located at a position 90° to the bending plane (i.e., the neutral line of the bending). After the test, no cracks or breaks are allowed on the samples.

6.8.1.1 Flash height of straight-seam high-frequency electric welded steel pipe

The external burrs of the steel pipe weld shall be removed and the remaining height shall not exceed 0.5 mm. As required by the buyer, negotiated between the supplier and the buyer, and indicated in the contract, the internal burrs of the steel pipe weld can be removed. After internal burrs of the weld seam are removed, the remaining height shall not be greater than 1.5 mm, and the groove depth shall meet the following requirements.

7.1 The sampling for chemical composition analysis of steel pipes shall comply with

the rules of GB/T 20066. Chemical composition analysis shall generally comply with the provisions of GB/T 4336, GB/T 20123, GB/T 20124, GB/T 20125 or other general methods. During arbitration, the provisions of GB/T 223.9, GB/T 223.12, GB/T 223.14, GB/T 223.23, GB/T 223.26, GB/T 223.37, GB/T 223.40, GB/T 223.53, GB/T 223.59, GB/T 223.60, GB/T 223.63, GB/T 223.84, GB/T 223.85, GB/T 223.86 and GB/T 20125 shall be followed.

7.2 The dimensions and shape of steel pipes, the burr height of electric welded steel pipes and the weld bead height of submerged-arc welded steel pipes shall be measured using measuring tools or instruments that meet the accuracy requirements.

7.3 The surface quality of steel pipes shall be visually inspected pipe by pipe under