

Translated English of Chinese Standard: GB/T14976-2025

www.ChineseStandard.net → Buy True-PDF → Auto-delivery.

Sales@ChineseStandard.net

GB

NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA

ICS 77.140.75

CCS H 48

GB/T 14976-2025

Replacing GB/T 14976-2012, GB/T 38810-2020, GB/T 40317-2021

Seamless stainless steel pipes for fluid transport

输送流体用不锈钢无缝钢管

Issued on: August 01, 2025

Implemented on: February 01, 2026

**Issued by: State Administration for Market Regulation;
Standardization Administration of the People's Republic of China.**

Table of Contents

Foreword	4
1 Scope	7
2 Normative references	7
3 Terms and definitions	9
4 Classification and code	10
5 Ordering content	10
6 Manufacturing process	11
6.1 Steel smelting methods	11
6.2 Steel pipe manufacturing method	11
6.3 Delivery state	11
7 Technical requirements	13
7.1 Steel designation and chemical composition	13
7.2 Mechanical properties	18
7.3 Hydraulics	19
7.4 Process performance	20
7.5 Intergranular corrosion	21
7.6 Surface quality	21
7.7 Nondestructive testing	22
7.8 Special requirements	22
7.9 Dimensions, appearance and weight	22
8 Specimens	26
8.1 Tensile test specimen	26
8.2 Impact test specimen	26
8.3 Bend test specimens	27
9 Test methods	27
10 Inspection rules	28
10.1 Inspection and acceptance	28
10.2 Batching rules	28
10.3 Sampling quantity	29
10.4 Reinspection and determination rules	29
11 Packaging, marking and quality certificate	29
Annex A (normative) Additional requirements for austenitic stainless steel pipes for low temperature conditions	30
A.1 General	30
A.2 Manufacturing method	30
A.3 Mechanical properties at room temperature	30
A.4 Impact	30

Seamless stainless steel pipes for fluid transport

1 Scope

This document specifies the classification and code, ordering content, manufacturing process, technical requirements, specimens, test methods, inspection rules, packaging, marking and quality certificate of seamless stainless steel pipes for fluid transport.

This document applies to seamless stainless steel pipes for fluid transport (hereinafter referred to as "steel pipes").

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 222, *Steels and alloys -- Allowable deviations of product analyzed chemical composition*

GB/T 223.9, *Iron, steel and alloy -- Determination of aluminium content -- Chrome azurol S photometric method*

GB/T 223.11, *Iron, steel and alloy -- Determination of chromium content - Titrimetric method and spectrophotometric method*

GB/T 223.18, *Methods for chemical analysis of iron steel and alloy -- The sodium thiosulfate separation iodometric method for the determination of copper content*

GB/T 223.19, *Methods for chemical analysis of iron, steel and alloy. The neocuproine-chloroform extraction photometric method for the determination of copper content*

GB/T 223.23, *Iron, steel and alloy -- Determination of nickel content -- The dimethylglyoxime spectrophotometric method*

GB/T 223.25, *Methods for chemical analysis of iron, steel and alloy. The dimethylglyoxime gravimetric method for the determination of nickel content*

GB/T 223.26, *Iron, steel and alloy -- Determination of molybdenum content -- The thiocyanate spectrophotometric method*

GB/T 223.28, *Methods for chemical analysis of iron, steel and alloy. The α -benzoin*

GB/T 2102, *Acceptance, packaging, marking and quality certification for steel tubular products*

GB/T 2975, *Steel and steel products -- Location and preparation of samples and test pieces for mechanical testing*

GB/T 4334-2020, *Corrosion of metals and alloys -- Test methods for intergranular corrosion of austenitic and ferritic-austenitic (duplex) stainless steels*

GB/T 5777, *Automated full peripheral ultrasonic testing of seamless and welded (except submerged arc-welded) steel pipes for the detection of longitudinal and/or transverse imperfections*

GB/T 6394, *Determination of estimating the average grain size of metal*

GB/T 7735, *Automated eddy current testing of seamless and welded (except submerged arc-welded) steel pipes for detection of imperfections*

GB/T 10561-2023, *Determination of content of nonmetallic inclusions in steel - Micrographic method using standard diagrams*

GB/T 11170, *Stainless steel -- Determination of multi-element contents -- Spark discharge atomic emission spectrometric method (Routine method)*

GB/T 17395, *Dimensions, shapes, masses and tolerances of steel pipes*

GB/T 20066, *Steel and iron -- Sampling and preparation of samples for the determination of chemical composition*

GB/T 20123, *Steel and iron -- Determination of total carbon and sulfur content Infrared absorption method after combustion in an induction furnace (routine method)*

GB/T 20124, *Steel and iron -- Determination of nitrogen content -- Thermal conductimetric method after fusion in a current of inert gas*

GB/T 30062, *Terminology of steel pipes and pipes*

YB/T 4395, *Steel. Determination of molybdenum, niobium and tungsten contents. Inductively coupled plasma atomic emission spectrometric method*

YB/T 4396, *Stainless steel. Determination of multi-element contents. Inductively coupled plasma atomic emission spectrometric method*

3 Terms and definitions

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

4 Classification and code

4.1 Steel pipes are classified and coded according to their manufacturing method as follows:

- a) Cold-rolled (drawn) steel pipes, coded as W-C;
- b) Hot-rolled (extruded, forged, expanded) steel pipes, coded as W-H.

4.2 Steel pipes are classified and coded according to dimensional accuracy as follows:

- a) Ordinary grade, coded as PA;
- b) High grade, coded as PC.

4.3 The following symbols apply to this document.

D: Outer diameter (unless otherwise specified, includes nominal outer diameter and/or calculated outer diameter, in millimeters).

D_c: Calculated outer diameter (outer diameter calculated from nominal inner diameter and nominal wall thickness, in millimeters).

d: Nominal inner diameter (in millimeters).

S: Wall thickness (unless otherwise specified, includes nominal wall thickness and/or average wall thickness, in millimeters).

S_c: Average wall thickness (the average of the maximum and minimum wall thickness values calculated from the minimum wall thickness and its allowable deviation, in millimeters).

S_{min}: Minimum wall thickness (in millimeters).

S_c: Average wall thickness (the average of the maximum and minimum wall thickness values calculated from the minimum wall thickness and its allowable deviation, in millimeters).

5 Ordering content

The contract or order for steel pipes under this document shall include the following:

- a) Reference to this document;
- b) Product name;
- c) Steel designation or unified numerical designation;

- d) Dimensions;
- e) Ordered quantity (total weight, total length, or number of pieces);
- f) Delivery condition;
- g) Special requirements.

6 Manufacturing process

6.1 Steel smelting methods

Steel shall be smelted using an electric arc furnace with external refining, a converter with external refining, or an electroslag remelting method. Other smelting methods with higher requirements may be used upon negotiation between the supplier and the purchaser and as specified in the contract.

6.2 Steel pipe manufacturing method

Steel pipes shall be manufactured seamlessly by cold rolling (drawing) or hot rolling (extrusion, forging, expansion). If the purchaser specifies a particular manufacturing method, this shall be stated in the contract.

6.3 Delivery state

6.3.1 Steel pipes should be delivered in a heat-treated and pickled state. Steel pipes that have been through integral grinding, boring, or heat-treated in a protective atmosphere may be delivered without pickling. The recommended heat treatment schedule for steel pipes is shown in Table 1.

6.3.2 For hot-rolled (extruded) austenitic stainless steel pipes, if the steel pipes are directly water-cooled or rapidly cooled by other means within the heat treatment temperature range specified in Table 1 after final thermal deformation, they shall be considered to meet the heat treatment requirements.

6.3.3 Upon request from the purchaser, after negotiation between the supplier and the purchaser, and with this information specified in the contract, cold-rolled (drawn) austenitic stainless steel pipes may be delivered in the cold-worked state. Requirements for bendability, mechanical properties, and flattening tests shall be determined by negotiation between the supplier and the purchaser.

6.3.4 After negotiation between the supplier and the purchaser and with indication in the contract, the steel pipe may adopt other heat treatment systems other than those listed in Table 1.

7 Technical requirements

7.1 Steel designation and chemical composition

7.1.1 The steel designation and chemical composition (melting analysis) shall comply with the provisions of Table 2. Based on the purchaser's requirements, after consultation between the supplier and the purchaser, and with indication in the contract, steel pipes with designations or chemical compositions other than those specified in Table 2 may be supplied.

7.1.2 If the purchaser requires analysis of finished products, this should be stated in the contract. The allowable deviation of the chemical composition of finished steel pipes should comply with the provisions of GB/T 222.

Where,

W - Theoretical weight per meter of steel pipe, in kilograms per meter (kg/m);

π - 3.1416;

ρ - Density of steel, in kilograms per cubic decimeter (kg/dm³). Steel density is as specified in Table 1;

S - Nominal wall thickness or average wall thickness (when delivered at the minimum wall thickness) of the steel pipe, in millimeters (mm);

D - Nominal outer diameter or calculated outer diameter (when delivered at the nominal inner diameter) of the steel pipe, in millimeters (mm).

7.9.6.2 For steel pipes delivered according to minimum wall thickness, the theoretical weight shall be calculated using the average wall thickness. For steel pipes delivered according to nominal inner diameter, the theoretical weight shall be calculated using the outer diameter.

7.9.6.3 When steel pipes are delivered according to theoretical weight, the supplier and the purchaser may negotiate the allowable weight deviation and specify it in the contract.

8 Specimens

8.1 Tensile test specimen

8.1.1 For steel pipes with a diameter of $D < 219$ mm, samples for the tensile test should be taken along the longitudinal direction of the steel pipe.

8.1.2 For steel pipes with a diameter of $D \geq 219$ mm, when the pipe size permits, a circular cross-section specimen with a diameter of 10 mm shall be cut from the transverse direction of the pipe for the tensile test. If the pipe size is insufficient to allow for a 10 mm specimen, a transverse circular cross-section specimen with a diameter of 8 mm or 5 mm, whichever is larger, shall be used. If the pipe size is insufficient to allow for a 5 mm circular cross-section specimen, the tensile test shall be conducted by sampling along the longitudinal direction of the pipe. Transverse circular cross-section specimens shall be taken from un-flattened sample blanks.

8.2 Impact test specimen

For impact test, specimens should preferably be cut transversely along the steel pipe. If transverse specimens are not possible, specimens should be cut longitudinally. Regardless of whether the specimens are cut transversely or longitudinally, the impact specimens should be the larger of the standard sizes and thicknesses of 7.5 mm, 5 mm,

This is an excerpt of the PDF (Some pages are marked off intentionally)

Full-copy PDF can be purchased from 1 of 2 websites:

1. <https://www.ChineseStandard.us>

- SEARCH the standard ID, such as GB 4943.1-2022.
- Select your country (currency), for example: USA (USD); Germany (Euro).
- Full-copy of PDF (text-editable, true-PDF) can be downloaded in 9 seconds.
- Tax invoice can be downloaded in 9 seconds.
- Receiving emails in 9 seconds (with download links).

2. <https://www.ChineseStandard.net>

- SEARCH the standard ID, such as GB 4943.1-2022.
- Add to cart. Only accept USD (other currencies - <https://www.ChineseStandard.us>).
- Full-copy of PDF (text-editable, true-PDF) can be downloaded in 9 seconds.
- Receiving emails in 9 seconds (with PDFs attached, invoice and download links).

Translated by: Field Test Asia Pte. Ltd. (Incorporated & taxed in Singapore. Tax ID: 201302277C)

About Us (Goodwill, Policies, Fair Trading...): <https://www.chinesestandard.net/AboutUs.aspx>

Contact: Wayne Zheng, Sales@ChineseStandard.net

Linkin: <https://www.linkedin.com/in/waynezhengwenrui/>

----- The End -----