

ICS 77.140.75
CCS H 48



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

GB 24512.3-2014

**Seamless steel tubes and pipes for nuclear power plant -- Part
3: Seamless stainless steel tubes and pipes**

核电站用无缝钢管 第3部分：不锈钢无缝钢管

(English Translation)

Issued on: June 24, 2014

Implemented on: April 1, 2015

Issued by: Standardization Administration of China

Table of Contents

Introduction	
1 Scope	
2 Normative references	
Classification and designation	3
4 Order contents	
5 Size, shape, weight and tolerances	
6 Technical requirements	
7 Test Method	
11 8 Inspection Rules	
9 Cleaning, packaging, marking and documentation	
Intergranular Appendix A (normative) pipe corrosion test	

Foreword

5.4,5.6,6.1,6.2.1,6.2.2,6.2.3,6.2.4,6.2.5.1,6.2.5.2,6.3,6.4,6.5,6.6,6.7.1,6.8,6.9.1.1 this section , 6.9.1.2,6.10, Chapter 7, Chapter 8, 9.1, 9.2 and 9.4 are mandatory, the rest are recommended.

GB 24512 "seamless steel tubes for nuclear power plant" is divided into three parts.

- Part 1. Carbon steel seamless pipe;
- Part 2. alloy steel seamless steel tubes;
- Part 3. stainless steel seamless pipe.

This is Part 3 GB 24512's.

This section drafted in accordance with GB/T 1.1-2009 given rules.

This section referring to EN10216-5:2004 "Technical delivery conditions of seamless steel tubes for pressure purposes - Part 5. Stainless steel tubes" and SA-312M "Seamless and welded austenitic stainless steel pipe nominal" to develop.

This part is proposed by the China Iron and Steel Association.

This part of the National Steel Standardization Technical Committee (SAC/TC183) centralized.

This section is drafted. ZTE Energy Equipment Co., Ltd., Metallurgical Industry Information Standards Institute, Suzhou Institute of Thermal Engineering Co.

Secretary, Jiangsu Wujin Stainless Steel Co., Ltd., Zhejiang Jiuli Special Materials Technology Co., Ltd., Jiangsu Yinhuan Precision Steel Tube Co., Ltd., Shan West Taigang Stainless Steel Co., Ltd. Yongxing Special Stainless Steel Co., Ltd., Hengyang Valin Steel Tube Co., Ltd., Pangang Group Jiangyou long City Special Steel Co., Ltd.

1 Scope

This section GB 24512 specifies the nuclear power plant with stainless steel seamless pipe (hereinafter referred to as "pipe") and classification code, size, shape, Weight and tolerance, technical requirements, test methods, inspection rules, packaging, marking and documentation.

This section applies to nuclear power plant nuclear safety and non-nuclear security level 1,2,3 devices pressure parts of stainless steel seamless pipe.

This section does not apply to nuclear power plant heat exchanger with stainless steel seamless pipe.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

Determination of GB/T 223.11 steel and alloy chromium content of visual titration or potentiometric titration Spectrophotometric determination of titanium content GB/T 223.16 Methods for chemical analysis of iron, steel and alloy The chromotropic acid GB/T 223.18 Methods for chemical analysis of iron, steel and alloy The sodium thiosulfate separation - determination of copper content Iodometry GB/T 223.19 Methods for chemical analysis of iron, steel and alloy neocuproine - chloroform extraction spectrophotometric determination of copper content GB/T 223.21 Methods for chemical analysis of iron, steel and alloy 5-Cl-PADAB spectrophotometric determination of cobalt content GB/T 223.22 Methods for chemical analysis of iron, steel and alloy nitroso R salt spectrophotometric method for measuring the amount of cobalt GB/T 223.23 steel and alloy - Determination of nickel content dimethylglyoxime spectrophotometry Determination of nickel content GB/T 223.25 Methods for chemical analysis of iron, steel and alloy dimethylglyoxime gravimetric method GB/T 223.26 steel and alloy - Determination of molybdenum content - Thiocyanate spectrophotometric GB/T 223.28 Determination of molybdenum steel and alloy chemical analysis method alpha- benzoin gravimetric method GB/T 223.36 Methods for chemical analysis of iron, steel and alloy distillation - neutralization titration method for the determination of nitrogen GB/T 223.37 Methods for chemical analysis of iron, steel and alloy distillation - indophenol blue photometric method for the determination of nitrogen GB/T 223.40 Determination of steel and alloy niobium content sulphochlorophenol S

spectrophotometry Bromine pyrogallol red spectrophotometric determination of tantalum content - GB/T 223.42 Methods for chemical analysis of iron, steel and alloy ion exchange separation GB/T 223.58 Methods for chemical analysis of iron, steel and alloys of sodium arsenite - sodium nitrite determination of manganese content titration GB/T 223.59 Steel and Alloy Determination of phosphorus content by bismuth phosphomolybdate blue spectrophotometric method and antimony phosphomolybdate blue spectrophotometry GB/T 223.60 Methods for chemical analysis of iron, steel and alloy perchloric acid dehydration gravimetric method for the determination of silicon content GB/T 223.62 Methods for chemical analysis of iron, steel and alloy butyl acetate extraction spectrophotometric determination of phosphorus content GB/T 223.63 Methods for chemical analysis of iron, steel and alloy The sodium (potassium) for Determination of amount GB/T 223.64 steel and alloy manganese content - Flame Atomic Absorption Spectrometry Determination of sulfur content of potassium iodate titration method after GB/T 223.68 Methods for chemical analysis of iron, steel and alloy tube furnace combustion GB/T 223.69 after carbon and alloy steel - Determination of the pipe furnace combustion gas volumetric method GB/T 223.72 steel and alloy sulfur content - Gravimetric method GB/T 223.75 Determination of methanol distillation steel and alloy of boron content - Curcumin spectrophotometric GB/T 223.84 steel and titanium alloys - Determination of two methane antipyrine spectrophotometry After GB/T 223.85 steel and alloy sulfur content induction furnace combustion infrared absorption method After the determination of GB/T 223.86 total carbon content and alloy steel induction furnace combustion infrared absorption method RT Test Method. Test Part 1 GB/T 228.1 metallic materials tensile GB/T 241 metal pipe Hydrostatic pressure testing Opening Test methods GB/T 242 metal tube expansion GB/T 246 metal pipe Flattening test methods GB/T 2102 Acceptance, packing, marking and quality certification GB/T 2975 Steel and Steel Products mechanical testing location and sample preparation Intergranular corrosion of stainless steel crystal GB/T 4334-2008 Corrosion of metals and alloys - Test methods GB/T 4338 high-temperature metallic materials - Tensile testing GB/T 5777-2008 Seamless Steel ultrasonic testing method GB/T 6394 Determination of average grain size of metal GB/T 7735 steel pipe eddy current testing method GB/T 11170 Determination of multi-element stainless steel spark discharge atomic emission spectrometry (Routine method) GB/T 17395 seamless steel pipe size, shape, weight and tolerance GB/T 17505 Steel and steel products General technical delivery requirements GB/T 20066 Steel and iron - Sampling and determination of the chemical composition of the sample with a sample preparation method GB/T 20123 Steel - Determination of total carbon and sulfur content of the high-frequency induction furnace combustion infrared absorption method (conventional method) GB/T 20124 Steel - Determination of nitrogen content of inert gas fusion thermal conductivity method (conventional method) Ultrasonic testing GB/T 20490 Seamless and welded (except submerged arc welded) steel laminar imperfections GB/T 20878 stainless steel and heat-resistant steel grades and chemical composition JB/T 4730.5 Non-destructive testing of pressure equipments - Part 5. penetrant testing YB/T 5137 high-pressure hot-rolled and

forged seamless steel tube round

3 Classification and designation

3.1

Pipe manufacturing methods fall into two categories by product, category, and its code is as follows.

- a) hot-rolled (extrusion, top, forging, expansion) steel pipe, code-named WH;
- b) cold drawn (rolled) steel pipe, codenamed WC.

3.2

precision steel tubes by size into two categories, their category and code are as follows.

- a) ordinary level precision, code-named PA;
- b) High precision, code-named PC.

3.3

The following codes apply to this part.

D. outside diameter (nominal diameter, unless otherwise specified or the calculated diameter, is calculated nominal diameter or outside diameter).

S. Wall thickness (unless otherwise specified nominal wall thickness or minimum thickness, is the nominal wall thickness or minimum thickness).

Smin. minimum wall thickness.

d. nominal inside diameter.

L. length.

4 Ordering content

According to the standard steel pipe order contract or order should include the following.

- a) number of this standard;
- b) the product name;
- c) steel grades;
- d) nuclear safety level;
- e) the number of orders (total weight or length);
- f) Dimensions;
- g) intergranular corrosion test methods;