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

GB 24512.2-2009

**Seamless steel tubes and pipes for nuclear power plant -- Part
2: Alloy steel seamless tubes and pipes**

核电站用无缝钢管 第2部分：合金钢无缝钢管

(English Translation)

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Foreword

5.1.2,5.2.2,5.3.1.2,5.3.2.1,5.5,5.7,6.1.2,6.1.3 this section , 6.2.2.2,9.2 are recommended, the rest Mandatory.

GB 24512 "nuclear power plant seamless steel pipe," the expected structure and names are as follows.

--- Part 1. Carbon steel seamless pipe;

--- Part 2. alloy steel seamless pipe;

--- part 3. stainless steel seamless pipe.

This section GB 24512 Part 2 "seamless steel tube for nuclear power plant," the. Referring to this Part EN10216-2:2002 "The use of pressure Technical delivery conditions of seamless steel tubes - Part 2. Non-alloy and alloy steel predetermined elevated temperature properties "and" the ASME Boiler and Pressure Vessel Code, Part A, Vol. II iron-based material "SA-213M 2007 Edition" boiler, superheater, and the heat exchanger ferrite and austenite Alloy steel seamless body Specification "and SA-335M" high

temperature alloy steel seamless ferritic Specification "developed.

Appendix A of this section is an informative annex.

This section was proposed by China Iron and Steel Association.

This section is under the jurisdiction of the National Steel Standardization Technical Committee (SAC/TC183).

This section was drafted. Pangang Group Chengdu Iron & Steel Co., Ltd., Metallurgical Industry Information Standards Institute, Suzhou Thermal Power Research Institute have Limited, Shenyang East Tube Power Technology Holdings Limited.

This part drafter. Guo Yuanrong, into Long Beach, Yan e.g., Huang Ying, Zhao Yanfen, Li Qi, Dong Li, Xue Fei, Wu Hong, Liu Gang, in the ocean.

Nuclear power plant seamless steel pipe Part 2. alloy steel seamless Range 1 this section specifies the GB 24512 alloy steel seamless nuclear power plant classification code, size, shape, weight and tolerance, TECHNOLOGY Surgery requirements, test methods, inspection rules, packaging, marking and reporting.

This part of nuclear power plants for the manufacture of non-nuclear devices used alloy steel seamless pressure member.

2 Normative references

Terms of the following documents constitute provisions of this section by reference in this part of GB 24512. For dated reference documents Pieces, all subsequent amendments (excluding corrections) or revisions do not apply to this section, however, encouraged to reach under this section Whether the parties to the agreement to use the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

Chemical composition of the finished GB/T 222 steel tolerance GB/T 223.5 steel Determination of total soluble silicon and silicon content reduced silicon molybdate salt spectrophotometric method (GB/T 223.5-2008, ISO 4829-1. 1986, ISO 4829-2. 1988, MOD) GB/T 223.9 chromium alloy steel and the aluminum content was measured Azure S Spectrophotometry Determination of steel and alloy chromium content GB/T 223.11 visual titration or potentiometric titration (GB/T 223.11-2008, ISO 4937. 1986, MOD) GB/T 223.14 steel and tantalum alloys - reagent extraction and spectrophotometric determination of vanadium content GB/T 223.18 steel and alloys - sodium thiosulfate Separation - Determination of copper content Iodimetry GB/T 223.23 alloy steel and nickel content measured spectrophotometrically dimethylglyoxime GB/T 223.26 thiocyanate salt spectrophotometric determination of molybdenum content alloy steel and GB/T 223.29 alloy steel and the measurement vector precipitated lead content - Spectrophotometric xylenol orange Determination GB/T 223.31 and arsenic content of the alloy steel distillation -

molybdenum blue spectrophotometric method (GB/T 223.31-2008, ISO 17058:2004, IDT)
 GB/T 223.37 steel and alloy analysis distillation - indophenol blue spectrophotometric
 determination of nitrogen GB/T 223.40 Determination of the contents of alloy steel and
 niobium sulphochlorophenol S Spectrophotometry GB/T 223.53 steel and alloy flame
 atomic absorption spectrometry copper content (GB/T 223.53-1987, eqv ISO/DIS4943.
 1986) GB/T 223.54 steel and alloy flame atomic absorption spectrophotometry nickel
 content (GB/T 223.54-1987, eqv ISO/DIS4940. 1986) GB/T 223.58 steel and alloys -
 sodium arsenite - Determination of the amount of sodium nitrite titration manganese GB/T
 223.59 phosphorus content of steel and alloy measured by bismuth phosphomolybdate
 blue spectrophotometric method and antimony phosphomolybdate blue spectrophotometric
 method GB/T 223.60 steel and alloy perchloric acid dehydration gravimetric method for the
 determination of silicon content GB/T 223.62 Spectrophotometric determination of
 phosphorus and iron alloys - butyl acetate extraction GB/T 223.63 steel and alloys - sodium
 periodate (K) for Determination of the amount of GB/T 223.67 steel and alloy Determination
 of sulfur content methylene blue spectrophotometric method (GB/T 223.67-2008, ISO
 10701:1994, IDT) Determination of sulfur content potassium iodate titration method after
 GB/T 223.68 and alloy steel pipe furnace combustion GB/T 223.69 after the carbon content
 and alloy steel measuring tube furnace combustion gas volumetric method Gravimetric
 method after the determination of carbon content GB/T 223.71 and alloy steel pipe furnace
 combustion GB/T 223.72 steel and alloy sulfur content Gravimetric method Determination
 of the amount of vanadium spectrometry GB/T 223.76 steel and alloy flame atomic
 absorption analysis of GB/T 223.78 steel and alloy curcumin spectrophotometric analysis of
 the boron content directly measured (GB/T 223.78-2000, idt ISO 10153:1997) GB
 /decarburized layer depth measurement method T 224 steel (GB/T 224-2008, ISO
 3887:2003, MOD) GB/T 226 steel macrostructure defects and etching test method (GB/T
 226-1991, neq ISO 4969. 1980) GB/T 228 materials at ambient temperature tensile test
 method (GB/T 228-2002, eqv ISO 6892:1998) GB/T 229 metal material Charpy pendulum
 impact test method (GB/T 229-2007, ISO 148-1:2006, MOD) GB/T 231.1 Brinell hardness
 test Part 1. Test method (GB/T 231.1-2002, eqv ISO 6506-1.

1999)

GB/T 232 of a metal material bending test method (GB/T 232-1999, eqv ISO 7438. 1985)
 GB/T 241 Test Method metal hydraulic tube GB/T 242 Test Method for expanding the metal
 pipe port (GB/T 242-2007, ISO 8493:1998, IDT) GB/T 246 Test Method flattening the metal
 tube (GB/T 246-2007, ISO 8492:1998, IDT) GB/T 1979-fold structural steels and defect
 FIG.

Acceptance of GB/T 2102 steel, packaging, marking and certification GB/T 2975 steel test
 sample position and the preparation and mechanical properties of samples of steel
 products (GB/T 2975-1998, eqv ISO 377.

1997)

GB/T 4336 carbon steel and low alloy steel for spark discharge atomic emission spectrometric method (conventional method) GB/T 4338 high temperature tensile test method for metallic materials (GB/T 4338-2006, ISO 783:1999, MOD) GB/T 5777-2008 seamless steel ultrasonic testing method (ISO 9303. 1989, Seamless and welded (except submerged arc-welded) steel tubes for pressure purposes - full peripheral ultrasonic testing for the detection of longitudinal imperfections, MOD) GB/T 6394 Determination of average grain size of the metal (GB/T 6394-2002, ASTM E112:1996, MOD) GB/T 7735 steel eddy current testing method (GB/T 7735-2004, ISO 9304. 1989, MOD) GB/T 10561 content of nonmetallic inclusions in steel was measured standards diagrams microscopic test method (GB/T 10561-2005, ISO 4967:1998, IDT) GB/T 12606 Steel magnetic flux leakage inspection method (GB/T 12606-1999, eqv ISO 9402. 1989; ISO 9598. 1989) GB/T 13298 test method for a metal microstructure GB/T 17395 seamless steel pipe size, shape, weight and tolerance (GB/T 17395-2008, ISO 4200:1991, ISO 5252:1991, ISO 1127:1992, NEQ) GB/T 17505 Steel and steel products General technical delivery requirements (GB/T 17505-1998, eqv ISO 404:1992) GB/T 20066 Steel and iron chemical composition of the sample and the measurement sample preparation methods (GB/T 20066-2006, ISO 14284.

1996, IDT)

GB/T 20123 total carbon and sulfur content of steel an induction furnace combustion infrared absorption method (conventional method) (GB/T 20123-2006, ISO 15350:2000, IDT) GB/T 20124 Determination of the nitrogen content in the steel the inert gas fusion thermal conductivity method (conventional method) (GB/T 20124-2006, ISO 15351:1999, IDT) YB/T 4149 casting tube round YB/T 5137 and a high-pressure hot-rolled seamless steel tube round forged

3 Classification and designation

3.1

part by manufacturing seamless steel tube is divided into two, and its category code as follows.

- a) hot rolling (extrusion, top, forging, expanded) steel, code-named W-H;
- b) cold drawn (rolled) steel, code is W-C.

3.2

seamless steel pipe section into two categories according to size accuracy, and its category code as follows.

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