

ICS 77.140.75
CCS H 48



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

GB 28883-2012

Composite seamless steel tubes for pressure

承压用复合无缝钢管

(English Translation)

Issued on: November 5, 2012

Implemented on: May 1, 2013

Issued by: Standardization Administration of China

Table of Contents

Foreword
1 Scope
2 Normative references
3 Terms and Definitions
4 Ordering content
5 Size, shape and weight
5.1 Diameter and wall thickness
5.2 Length
5.3 Curvature
5.4 Uneven thickness and roundness
5.5 Tip shape
5.6 Weight
6 Technical Requirements
6.2 Manufacturing Methods
6.3 Delivery status
6.4 Mechanical Properties
6.5 Hydraulic Test
6.8 Macro examination
6.9 Non-metallic inclusions
6.10 Grain size
6.11 Microstructure

Foreword

This standard Chapter 1,2,3,4 5.1,5.2,5.3,5.4,6.1.2,6.2.2,6.2.3,6.3,6.6 and 6.7.3 are recommendatory, its More than mandatory terms.

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

The standard proposed by China Iron and Steel Association.

This standard by the National Steel Standardization Technical Committee (SAC/TC183).

This standard was drafted. Wuhan Boiler Group Special Boiler Engineering Co., Ltd., a limited Beijing Changxing Qaeda Composite Technology Development the company, Metallurgical Industry Information Standards Institute, Panzhihua Iron and Steel Group,

Jiangyou, Sichuan Great Wall Special Steel Co., Ltd., Xinxing Ductile Iron Pipes Company Limited.

1 Scope

This standard specifies the size of a seamless steel pipe with a composite pressure, shape, weight, technical requirements, test methods, inspection rules, packaging, labeling and a quality certificate.

This standard applies to the manufacture of boilers, pressure vessels and pressure pipelines composite seamless steel pressure (hereinafter referred to as "steel pipe").

2 Normative references

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

Chemical composition of the finished GB/T 222 steel tolerance GB/Determination of soluble silicon steel and total silicon content T 223.5 reduced silicon molybdate salt spectrophotometric Determination of steel and alloy chromium content GB/T 223.11 visual titration or potentiometric titration GB/T 223.12 steel and alloy analysis carbonate separation - by diphenyl hydrazide spectrophotometric determination of chromium content GB/T 223.17 steel and alloys - Determination of Ti with two security antipyrine amount of methane GB/T 223.23 alloy steel and nickel content measured spectrophotometrically dimethylglyoxime Determination of nickel content GB/T 223.25 steel and alloys - dimethylglyoxime gravimetric method GB/T 223.54 steel and alloys - Flame Atomic Absorption Spectrophotometry nickel content 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 223.64 iron and manganese content by flame atomic absorption spectrometry alloy GB/T 223.67 steel and alloy Determination of sulfur content methylene blue spectrophotometric method 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 depth of decarburization GB/T 224 steel GB/T 226 steel macrostructure defects and Etch Test Method Rt Test Method. Part 1

Test GB/T 228.1 metal material tensile GB/T 229 summer metallic materials than methods pendulum impact test GB/T 232 of a metal material bending test method GB/T 241 Test Method metal hydraulic tube GB/T 242 Test Method for expanding a metal tube opening GB/T 244 Test Method for bending a metal pipe GB/T 246 Test Method flattening the metal tube GB/T 1979-fold structural steels and defect FIG.

Acceptance of GB/T 2102 steel, packaging, marking and certification Sampling and sample preparation Test positions GB/T 2975 Mechanical properties of steel and steel products Etching the polycrystalline stainless steel GB/T 4334-2008 metals and alloys corrosion test GB/T 4336 carbon steel and low alloy steel for spark discharge atomic emission spectrometric method GB/T 5777-2008 seamless steel ultrasonic testing method the average GB/T 6394 metal grain size measurement method GB/T 7735 steel eddy current testing method 10561-2005 nonmetallic inclusions in steel content GB/T measurement standard rating FIG microscopic test method Photoelectric GB/T 11170 stainless Emission Detector GB/T 12606 Steel magnetic flux leakage inspection method GB/T 13298 test method for a metal microstructure GB/T 17395 seamless steel pipe size, shape, weight and tolerance GB/T 20066 Steel and iron chemical composition of the sample and the measurement sample preparation methods GB/T 20123 total carbon and sulfur content of steel an induction furnace combustion infrared absorption method (conventional method)

3 Terms and Definitions

The following terms and definitions apply to this document.

Metallurgical complex fusion metalurgyfusecomposite Inner and outer metal layers are employed are two different chemical components of steel metallurgically manner that the inner and outer layers to each other in the molten metal binding site Embodiment of the composite melt.

Explosively formed composite explosionformingcomposite the method implemented to generate a composite manner explosion welded between the base layer and the cladding layer.

Nested molded composite nestingformingcomposite Seamless pipe using larger size smaller size multiplexing nested seamless pipe, and then through the base layer and the press working properly stratified cohesive Fit manner.

Stratified claddingmetal the metal layer in contact with the particular fluid to meet the special fluid (e.g., a corrosive fluid) selected delivery requirements. Inner layer may be a multi-layer, but also it may be the outer layer.

Grassroots basemetal Fluid transport tube to meet the mechanical strength requirements of the metal layer, which is greater than the thickness of a clad material. Base layer may be the inner layer, the outer layer may be.

4 Ordering content

According to the standard steel pipe order contract or order shall include, but not limited to, the following.

- a) standard number;
- b) the product name;
- c) steel grades (grades outer metal inner metal grade);
- d) Order number (or the total weight of the total length);
- e) Dimensions [nominal diameter x thickness (thickness of the inner layer thickness), in millimeters, mm];
- f) Special requirements.

5.1 Diameter and wall thickness

5.1.1

steel should nominal diameter and a nominal wall thickness (thickness of the inner layer thickness) delivery. According to the demand side, the supply and demand sides negotiated, steel Tube nominal diameter, and may be the minimum wall thickness (thickness of the inner layer thickness), nominal inside diameter (d) and the nominal wall thickness dimensions or other ways of delivery.

5.1.2

steel pipe nominal outside diameter and wall thickness should be consistent with GB/T 17395 of. According to the demand side, the supply and demand sides negotiated, can supply GB/T 17395 pipe size than predetermined.

When the pipe by a nominal inside diameter and nominal wall thickness of the delivery, the dimensions are determined by supply and demand sides negotiated.

NOTE: Unless otherwise indicated, the standard wall thickness (S) comprises a nominal wall thickness and a minimum wall thickness, the outer diameter (D) comprises a nominal diameter and an outer diameter is calculated.

5.1.3

steel pipe according to nominal diameter and nominal wall thickness delivery, the nominal outside diameter and nominal wall thickness tolerances shall comply with the requirements in Table 1.

Outer diameter steel pipe according to the nominal wall thickness and minimum delivery, the nominal outer diameter tolerance shall be as specified in Table 1, the wall thickness tolerance is twenty two%