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

GB 13447-2008

Replacing GB 13447-1992

Steel blank for seamless gas cylinder

无缝气瓶用钢坯

(English Translation)

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Foreword

This standard unless the terms of the agreement, the remaining provisions are mandatory.

This standard replaces GB 13447-1992 "seamless cylinders with billets." this standard compared with GB 13447-1992, the main differences are as follows.

--- Increase in Chapter 2, "Normative references" and increase the content;

--- Increased 230mm x 230mm, 250mm x 250mm, 280mm x 280mm specifications and the appropriate size to allow deviation Claim;

- Cancellation theory billet delivery weight and modify the agreement between;
- Canceled 40Mn2, 40Mn2A steel grades, an increase of 37Mn, 34CrMo steel grades and corresponding chemical composition and mechanical properties Claim;
- Tightened the 34Mn2V, 30CrMo steel grades phosphorus, sulfur content requirements;
- Improving the center porosity level requirements;
- Modify the inspection rules, increasing the production of continuous casting billet reinspection rules;
- Modify the content of the flag of the production process.

The standard proposed by China Iron and Steel Association.

This standard is under the jurisdiction of the National Steel Standardization Committee.

This standard is mainly drafted by. Panzhihua Iron and Steel (Group) Corporation, Jiangyin Xingcheng Special Steel Co., Panzhihua New Steel and Vanadium shares have Limited, Metallurgical Industry Information Standards Institute.

1 Scope

This standard specifies the seamless cylinders with billet size, shape, weight and tolerance, technical requirements, test methods, inspection rules, package Equipment, marking and quality certification.

This standard applies to the manufacture of high pressure seamless cylinders billets.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 222 chemical composition of finished steel tolerance Determination of chromium content GB/T 223.11 Methods for chemical analysis of iron, steel and alloy The ammonium persulfate oxidation volumetric method GB/T 223.14 Methods for chemical analysis of iron, steel and alloys, tantalum reagent extraction and spectrophotometric determination of vanadium content GB/T 223.17 steel and alloy chemical analysis method two determination in titanium content for DAM GB/T 223.23 Methods for chemical analysis of iron, steel and alloy The extraction - dimethylglyoxime spectrophotometric determination of nickel content Spectrophotometric determination of molybdenum content GB/T 223.26 Methods for chemical analysis of iron, steel and alloy The thiocyanate direct GB/T 223.30 Methods for

chemical analysis of iron, steel and alloys of bromine mandelic acid precipitation - arserazo
 III spectrophotometry Zirconium content GB/T 223.53 Methods for chemical analysis of
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 223.68 Methods for chemical analysis of iron, steel and alloy tube furnace combustion After
 the determination of carbon content - Gravimetric method GB/T 223.71 Methods for
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 for chemical analysis of iron, steel and alloy methanol distillation - curcumin
 spectrophotometric determination of boron content GB/T 226 steel macrostructure and
 defect etching test method GB/T 228 metal materials at room temperature tensile test
 method (GB/T 228-2002, ISO 6892:1998, EQV) GB/T 229 metal Charpy pendulum impact
 test method (GB/T 229-2007, ISO 148-1:2006, MOD) GB/T 1979 structure steel
 macrostructure and defect of FIG.

General provisions GB/T 2101 steel acceptance, packaging, marking and quality certificate
 GB/T 4336 carbon steel and low alloy steel spark source atomic emission spectrometry
 method (conventional method) GB/T 10561 non-metallic inclusions in steel - Micrographic
 method (GB/T 10561-2005, ISO 4967:1998, IDT) GB/T 20066 Steel and iron - Sampling
 and determination of the chemical composition of the sample with a sample preparation
 method (GB/T 20066-2006, ISO 14284.

1996, IDT)

3.1 Dimensions

3.1.1

The cross-sectional dimensions and tolerances 3.1.1.1 seamless cylinders billets with
 cross-sectional dimensions and tolerances shall comply with the provisions in Table 1.

Table 1 cross-sectional dimensions and tolerances in millimeters

Side side length tolerance diagonal length difference between radius 200 x 200 ± 4.5 ≤6
 30 230 x 230 ± 5.0 ≤8 35 250 x 250 + 6.0-5.0 ≤8 35 280 x 280 ± 8.0 ≤11 40

NOTE: radius only pass design, not as a delivery basis.

3.1.1.2

According to the requirements, the agreement by both sides, can supply other sizes of
 billets, tolerance and its side diagonal length difference should Specified in the contract.

3.1.2 Length and tolerance

3.1.2.1

billet usual length of 4m ~ 12m.

3.1.2.2

and agreement by both sides in the contract, the length of 2m ~ 4m short ruler blank to allow delivery.

3.1.2.3

billet set, double length agreement by both parties and specified in the contract, will double length tolerance is 0mm ~ 50mm.

3.2 Shape

3.2.1

billet may not have a significant twist.

3.2.2 Curvature

Curvature per meter slab should be less than 15mm, the total curvature should not exceed 1.5% of the total length.

3.2.3 The broadening of slab steel billet ends may not exceed 10% of the nominal size of the slab cut slope should be less than 8mm.

3.3 wt.

Billet according to the actual weight of the delivery. Agreement by both sides, in accordance with theoretical weight delivery, the theory billet unit weight is determined by supply and demand sides.

4.1 Designation and chemical composition

4.1.1

Steel grade and chemical composition (melting analysis) should meet the requirements of Table 2. Finished tolerances shall comply with the provisions of GB/T 222's.

4.1.2

residual elements V, Ti, Nb, B, Zr, and the content should not exceed 0.15%. As the supplier to ensure, may be tested.

4.1.3

agreement by both sides, can also provide other grades of steel.