

Translated English of Chinese Standard: Q/BQB150-2018

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# BQB

ENTERPRISE STANDARD OF  
BAOSHAN IRON & STEEL CO., LTD.

## Q/BQB 150-2018

Replacing Q/BQB 150-2014

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### Rolled Round Billets for Tubes

轧制圆管坯

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## Foreword

This Standard is drafted in accordance with the requirements and format of GB/T 1.1-2009 Directives for Standardization - Part 1: Structure and Drafting of Standards.

This Standard is drafted in accordance with the characteristics of products and techniques of this enterprise.

Please be noted that certain content in this Standard might involve patents. The issuing institution of this Standard does not undertake the responsibility of identifying these patents.

This Standard serves as a replacement of Q/BQB 150-2014. In comparison with Q/BQB 150-2014, there are several main changes as follows:

- Normative reference: chemical composition analysis and test method is deleted; GB/T 2101 is updated to Version 2017;
- Diameter specification 165 mm and 380 mm, and corresponding technical requirements are added;
- The requirement of curvature of 230 mm billet becomes more rigorous;
- The requirement of the end: “in terms of billet whose nominal diameter is more than 230 mm, tube end oblique shall be not more than 10 mm” is modified into “in terms of billet whose nominal diameter is more than 230 mm and not more than 300 mm, tube end oblique shall be not more than 10 mm; in terms of billet whose nominal diameter is more than 300 mm, tube end oblique shall be not more than 15 mm.”;
- Macrostructure test: “the depth of subcutaneous inclusion and subcutaneous bubble shall not exceed 2 mm” is deleted;
- 4.3.3 is modified;
- The surface quality requirement of billet that is delivered in the non-peeling state is refined in accordance with the diameter range of billet;
- Chemical composition analysis and test method in Table 2 in GB/T 223 is modified into “comply with the analysis method stipulated in relevant product standard”;
- Packaging: the requirement “billet whose nominal diameter is more than 180 mm shall not be bundled” is newly added; “3 information needed for ordering” is correspondingly modified;
- “Billets shall be delivered in bundles; the weight of each bundle shall be

## Rolled Round Billets for Tubes

### 1 Scope

This Standard specifies the dimension, appearance, weight, allowable deviation, technical requirements, inspection and test, packaging, marking and inspection documents of rolled round billets for tubes.

This Standard is applicable to rolled round billets for tubes manufactured by Baoshan Iron and Steel Co., Ltd., such as seamless steel tube for the purpose of manufacturing structure, seamless steel tube for the purpose of boiler and tube for the petroleum and natural gas industry, etc.

### 2 Normative References

The following documents are indispensable to the application of this Standard. In terms of references with a specified date, only versions with a specified date are applicable to this Standard. The latest version (including all the modifications) of references without a specified date is also applicable to this Standard.

GB/T 226-1991 Etch Test for Macrostructure and Defect of Steels

GB/T 1979-2001 Standard Diagrams for Macrostructure and Defect of Structural Steels

GB/T 2101-2017 General Requirement of Acceptance, Packaging, Marking and Certification for Section Steel

GB/T 10561-2005 Steel - Determination of Content of Nonmetallic Inclusions - Micrographic Method Using Standards Diagrams

GB/T 20066-2006 Steel and Iron - Sampling and Preparation of Samples for the Determination of Chemical Composition

### 3 Information Needed for Ordering

During ordering, users need to provide the following information:

- a) Standard number of this enterprise;
- b) Nameplate;
- c) Specification;

## 4.2 Length

Based on users' option, and it shall be indicated in the contract, round steel shall be delivered in accordance with one of the three length-types as follows:

### 4.2.1 Delivery by range-length

Generally speaking, the length of ordering shall be 4 m ~ 10 m. Based on the negotiation of the supply side and the demand side, and the short-length ratio is indicated in the contract, THEN, it is allowed that the length is not less than 2 m, but not more than the short-length of the lower limit of the ordering length.

### 4.2.2 Delivery by fixed-length

Fixed-length shall be 4 m ~ 10 m. The allowable tolerance of fixed-length shall be

$\begin{matrix} +50 \\ 0 \end{matrix} \text{ mm}.$

### 4.2.3 Delivery by multiple-length

Multiple-length shall be not more than 10 m. Round steel that does not comply with the multiple-length stipulated by the users is allowed to be delivered in accordance with the integral-multiples of single-multiple-length, and it shall comply with the stipulated multiplication requirements of the minimum single-multiple-length. The allowable

tolerance of multiple-length shall be  $\begin{matrix} +50 \\ 0 \end{matrix} \text{ mm}.$

## 4.3 Appearance

### 4.3.1 Curvature

In principle, billet shall be able to roll.

In terms of billet whose nominal diameter is not more than 230 mm, the partial curvature shall be not more than 4 mm/m; the total curvature shall be not more than 0.4% of the total length.

In terms of billet whose nominal diameter is more than 230 mm, the partial curvature shall be not more than 8 mm/m; the total curvature shall be not more than 0.6% of the total length.

### 4.3.2 End

Billet end shall be vertical to the axis. In terms of billet whose nominal diameter is not more than 230 mm, the tube end oblique shall be not more than 6 mm; in terms of billet whose nominal diameter is more than 230 mm, and not more than 300 mm, the tube end oblique shall be not more than 10 mm; in terms of billet whose nominal diameter is more than 300 mm, the tube end oblique shall be not more than 15 mm. Burr on the

sectional billet, there shall be no visible residual shrinkage cavities, white spots, stratification, cracks, bubbles, peeling-offs or inclusions.

**5.4.2** In terms of allowable macrostructural defects, general porosity, central porosity and ingot type segregation of billets for drill pipe joint shall be respectively not more than Level-1.5; general porosity, central porosity and ingot type segregation of other types of billet shall be not more than Level-2.5.

## **5.5 Nonmetallic Inclusions**

High-pressure boiler tube, oil well pipe and billet for drill pipe joint shall receive nonmetallic inclusion grading in accordance with Method A in GB/T 10561-2005. Various inclusions in high-pressure boiler tube and oil well pipe billet shall be respectively not more than Level-2.5 in the grading diagram; various inclusions in billet for drill pipe joint shall be respectively not more than Level-2.0.

## **5.6 Surface Quality**

### **5.6.1 Billet surface quality in non-peeling delivery state**

In terms of billet whose nominal diameter is not more than 230 mm, on the surface of billet, there shall be no visible cracks, crusts, folding, pinholes or slag inclusions. Scratches, concave surfaces, pitted surfaces and indentations whose depth is not more than the negative diameter deviation in practical dimension; cracks whose depth is not more than 0.2 mm; side handles whose height is not more than 0.5 mm are allowed to exist.

In terms of billet whose nominal diameter is more than 230 mm, on the surface of billet, there shall be no visible cracks, crusts, folding, pinholes or slag inclusions. Scratches, concave pits, pocking marks and roll marks whose depth does not 4 mm in practical dimension; cracks, inclusions, crusts, enfoldment and transverse fissures whose depth does not exceed 0.4 mm in practical dimension are allowed to exist. On the end face, no shrinkage cavities, airbags, stratification, tail holes or cutting cracks are allowed to exist.

On the surface of round billet, defects are allowed to be cleaned. The width of cleaning shall be not less than 6 times of the depth of cleaning. On the same cross section (single side), the depth of cleaning shall be not more than 3% of the nominal diameter. However, there shall be not more than 1 spot where the same cross section reaches the maximum depth of cleaning.

### **5.6.2 Billet surface quality in peeling delivery state**

On the surface of billet, there shall be no visible cracks, crusts, folding, side handles or inclusions. Scratches, concave surfaces and pitted surfaces whose depth is not more than 0.5 mm; small cracks and turning tool marks or grinding wheel marks whose depth is not more than 0.3 mm are allowed to exist.

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