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Corrosion-resistant alloy U-bent tubes

耐蚀合金U形管

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1 H08800 NS1101 960°C~1060°C, rapid cooling

2 H08810 NS1102 1100°C~1180°C, rapid cooling

3 H01103 NS1103 980°C~1050°C, rapid cooling

4 H01401 NS1401 1000°C~1050°C, rapid cooling

5 H08825 NS1402 960°C~1080°C, rapid cooling

6 H06600 NS3102 980°C~1060°C, rapid cooling

7 H06690 NS3105 1000°C~1100°C, rapid cooling

8 H06625 NS3306 1050°C~1150°C, rapid cooling

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents". Drafting.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

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Corrosion-resistant alloy U-tube

1 Scope

This document provides the classification and designation of corrosion-resistant alloy
U-tubes, and specifies the ordering details, manufacturing process, technical requirements,
inspection rules, and packaging.

Packaging, markings, and quality certificates describe the corresponding test methods.

This document applies to nickel-based plastics with a nominal outer diameter not exceeding
38 mm, a wall thickness not exceeding 3.0 mm, and a bending radius not exceeding 2000
mm.

Iron-nickel based and other corrosion-resistant alloy U-shaped tubes (hereinafter referred to
as U-shaped tubes).

2 Normative references

GB/T 222

GB/T 223

GB/T 228.1

GB/T 228.2

GB/T 241

GB/T 242

GB/T 246

GB/T 2102

GB/T 2975

GB/T 5777-2019

GB/T 6394
GB/T 7735-2016
GB/T 10561-2023
GB/T 10610
GB/T 15260
GB/T 20066
GB/T 20123
GB/T 30062
GB/T 38939

3 Terms and Definitions

The terms and definitions defined in GB/T 30062 apply to this document.

4 Classification and Codes

4.1 U-shaped tubes are classified into the following two categories according to their delivery condition.

- a) Heat-treated U-shaped tube UH;
- b) Cold-rolled (drawn) U-shaped tube UC.

4.2 The symbols and corresponding explanations used in this document are shown in Table 1.

Table 1 Symbols and Explanations
Symbol Unit Explanation
D mm Nominal outer diameter
Dmax mm Maximum outer diameter
Dmin mm Minimum outer diameter
S mm Nominal wall thickness
Smin mm minimum wall thickness
R mm is the bending radius, the straight-line distance between the center of the bend and the centerline of the bend area.

b mm Straight pipe section spacing, vertical distance between the inner sides of two straight pipe sections at the bend tangent point.

lambda mm Straight pipe section spacing deviation
T mm. Minimum wall thickness in the bend region; minimum wall thickness at the outer arch of the bend region.

Ov % Out-of-roundness of the bend, referring to the ratio of the difference between the maximum and minimum outer diameters at any cross-section of the bend to the nominal outer diameter.
Lu mm U-shaped tube length
L mm Straight pipe section length
delta L mm represents the difference in length between two straight pipe sections, $|L_1 - L_2|$
delta L1/delta L2 mm is the deviation in straight pipe section length; it is the difference

between the lengths of the two straight pipe sections L1/L2 and the nominal straight pipe section length L.

P mm Flatness, the maximum vertical distance between various parts of the bend and the horizontal plane.

5 Order details

A contract or order placed in accordance with this document shall include at least the following.

- a) This document number;
- b) Product Name;
- c) Trademark or Uniform Numerical Code;
- d) Smelting methods;
- e) Delivery status;
- f) Dimensions (outer diameter x wall thickness, in millimeters);
- g) Product drawings (including bending radius and straight pipe section length);
- h) Quantity ordered (total length, total number of pieces, or total weight);
- i) Hydraulic test pressure;
- j) Special requirements (such as penetration).

6.1 Smelting Method

The alloy may be smelted by ladle refining or electroslog remelting, or other methods may be used. The smelting method should be specified in the quality certificate.

6.2 Tube Manufacturing Method

6.2.1 Alloy tube blanks shall be formed by hot rolling or hot forging.

6.2.2 Straight tubes shall be manufactured using a cold rolling (drawing) seamless method.

6.2.3 U-shaped tubes should be cold-bent into shape.

6.3 Delivery Status

6.3.1 U-shaped tubes are usually delivered as straight tubes after heat treatment in a protective atmosphere and then cold-bent. The recommended solution heat treatment regime for straight tubes is shown in Table 2.

6.3.2 U-shaped pipe bends with a bending radius not exceeding 10 times the nominal outer