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Corrosion-resistant Alloy Hot-rolled Sheets and Strips

耐蚀合金热轧薄板及带材

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Foreword

This Standard was drafted in accordance with the rules in GB/T 1.1-2009.

This Standard was proposed by China Iron and Steel Association.

This Standard shall be under the jurisdiction of National Technical Committee 183 on Iron and Steel of Standardization Administration of China (SAC/TC 183).

The drafting organizations of this Standard: Baoshan Iron & Steel Co., Ltd.; Pangang Group Changcheng Special Steel Co., Ltd.; SINOPEC Engineering Incorporation; Shanghai Eraum Alloy Materials Co., Ltd.; China Metallurgical Information and Standardization Institute.

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Corrosion-resistant Alloy Hot-rolled Sheets and Strips

1 Scope

This Standard stipulates the order content, dimensions, shapes, weights, technical requirements, test methods, inspection rules, packaging, marking and quality certificate of corrosion-resistant alloy hot-rolled sheets and strips.

This Standard is applicable to nickel-based, iron-nickel-based, pure nickel and nickel-copper-based corrosion-resistant alloy hot-rolled wide strips, and shear sheets and slitting strips with a nominal thickness of 2.5 mm ~ 8.0 mm and a nominal width of not more than 1,500 mm (hereinafter referred to as sheets and strips).

2 Normative References

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

GB/T 223.3 *Methods for Chemical Analysis of Iron, Steel and Alloy - The Diantipyryl Methane Phosphomolybdate Gravimetric Method for the Determination of Phosphorus Content*

GB/T 223.4 *Alloyed Steel - Determination of Manganese Content - Potentiometric or Visual Titration Method*

GB/T 223.5 *Steel and Iron - Determination of Acid-soluble Silicon and Total Silicon Content - Reduced Molybdsilicate Spectrophotometric Method*

GB/T 223.8 *Methods for Chemical Analysis of Iron, Steel and Alloy - The Sodium Fluoride Separation - EDTA Titration Method for the Determination of Aluminum Content*

GB/T 223.9 *Iron, Steel and Alloy - Determination of Aluminum Content - Chrome Azurol S Photometric Method*

GB/T 223.11 *Iron, Steel and Alloy - Determination of Chromium Content - Visual Titration or Potentiometric Titration Method*

GB/T 223.17 *Methods for Chemical Analysis of Iron, Steel and Alloy - The Diantipyrylmethane Photometric Method for the Determination of Titanium Content*

GB/T 223.20 *Methods for Chemical Analysis of Iron, Steel and Alloy - The Potentiometric Titration Method for the Determination of Cobalt Content*

GB/T 223.25 *Methods for Chemical Analysis of Iron, Steel and Alloy - The Dimethylglyoxime Gravimetric Method for the Determination of Nickel Content*

GB/T 223.28 *Methods for Chemical Analysis of Iron, Steel and Alloy - The α -benzoinoxime Gravimetric Method for the Determination of Molybdenum Content*

GB/T 223.29 *Iron, Steel and Alloy - Determination of Lead Content - Carrier Precipitation-xylenol Orange Spectrophotometric Method*

GB/T 223.30 *Methods for Chemical Analysis of Iron, Steel and Alloy - The Arsenazo III Spectrophotometric Method for the Determination of Zirconium Content after Separation by P-bromomandelic Acid*

GB/T 223.36 *Methods for Chemical Analysis of Iron, Steel and Alloy - The Neutral Titration Method for the Determination of Nitrogen Content after Distillation Separation*

GB/T 223.38 *Methods for Chemical Analysis of Iron, Steel and Alloy - The Anion-exchange Separation-gravimetric Method for the Determination of Niobium Content*

GB/T 223.40 *Iron, Steel and Alloy - Determination of Niobium Content by the Sulphochlorophenol S Spectrophotometric Method*

GB/T 223.42 *Methods for Chemical Analysis of Iron, Steel and Alloy - The Anion-exchange Separation-bromopyrogallol Red Photometric Method for the Determination of Tantalum Content*

GB/T 223.43 *Iron, Steel and Alloy - Determination of Tungsten Content - Gravimetric Method and Spectrophotometric Method*

GB/T 223.50 *Methods for Chemical Analysis of Iron, Steel and Alloy - The Phenylfluorone-CTMAB Direct Photometric Method for the Determination of Tin Content*

GB/T 223.65 *Steel, Iron and Alloy - Determination of Cobalt Content - Flame Atomic Absorption Spectrometric Method*

GB/T 223.72 *Iron, Steel and Alloy - Determination of Sulfur Content - Gravimetric Method*

GB/T 223.73 *Iron, Steel and Alloy - Determination of Iron Contents - Titanium Trichloride-potassium Dichromate Titration Method*

GB/T 223.76 *Methods for Chemical Analysis of Iron, Steel and Alloy - The Flame Atomic Absorption Spectrometric Method for the Determination of Vanadium Content*

GB/T 223.78 *Methods for Chemical Analysis of Iron, Steel and Alloy - Curcumin Spectrophotometric Method for the Determination of Boron Content*

GB/T 223.79 *Iron and Steel - Determination of Multi-element Contents - X-ray Fluorescence Spectrometry (routine method)*

GB/T 223.86 *Steel and Iron - Determination of Total Carbon Content - Infrared Absorption Method after Combustion in an Induction Furnace*

GB/T 228.1 *Metallic Materials - Tensile Testing - Part 1: Method of Test at Room Temperature*

GB/T 230.1 *Metallic Materials - Rockwell Hardness Test - Part 1: Test Method (scales A, B, C, D, E, F, G, H, K, N, T)*

GB/T 231.1 *Metallic Materials - Brinell Hardness Test - Part 1: Test Method*

GB/T 247 *General Rule of Acceptance, Package, Mark and Certification for Steel Plates (sheets) and Strips*

GB/T 709 *Dimension, Shape, Weight and Tolerances for Hot-rolled Steel Plates and Sheets*

GB/T 2039 *Metallic Materials - Uniaxial Creep Testing Method in Tension*

GB/T 2975 *Steel and Steel Products - Location and Preparation of Samples and Test Pieces for Mechanical Testing*

GB/T 6394 *Metal - Methods for Estimating the Average Grain Size*

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

GB/T 11170 *Stainless Steel - Determination of Multi-element Contents - Spark Discharge Atomic Emission Spectrometric Method (routine method)*

GB/T 15007 *Designations of Corrosion-resistant Alloy*

GB/T 15260 *Standard Test Method for Intergranular Corrosion of Nickel Alloys by Corrosion of Metals and Alloys*

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

GB/T 20123 *Steel and Iron - Determination of Total Carbon and Sulfur Content - Infrared Absorption Method after Combustion in an Induction Furnace (routine method)*

GB/T 20124 *Steel and Iron - Determination of Nitrogen Content - Thermal Conductimetric Method after Fusion in a Current of Inert Gas*

GB/T 36164 *High Alloy Steel - Determination of Multi-element Contents - X-ray Fluorescence Spectrometry (routine method)*

YB/T 4395 *Steel Determination of Molybdenum, Niobium and Tungsten Contents - Inductively Coupled Plasma Atomic Emission Spectrometric Method*

YS/T 325.2 *Methods for Chemical Analysis of Nickel-copper Alloy - Part 2: Determination of Copper Content - Electrolysis Weight Method*

3 Order Content

Contracts or orders placing orders in accordance with this Standard shall at least include the following content:

- a) Serial No. of this Standard;
- b) Product name (or trade name);
- c) Uniform digital code or alloy designation;
- d) Accuracy of dimensions and shapes (see Chapter 4);
- e) Weight or quantity;
- f) Smelting method (see 5.2);
- g) Delivery state (see 5.3);
- h) Special requirements (see 5.7).

4 Dimensions, Shapes and Weights

4.1 Thickness and Allowable Deviations

The thickness and allowable deviations of sheets and strips shall comply with the stipulations in Table 1.

width.

4.7 Tower Shape

Strips shall be firmly wound into a roll. In addition, the one-side tower shape of the roll shall be not more than 35 mm. If there are special requirements for the inner diameter of the roll, they shall be indicated in the contract.

4.8 Weight

Sheets and strips shall be delivered in accordance with the actual weight.

5 Technical Requirements

5.1 Chemical Composition

5.1.1 The designation and chemical composition (smelting analysis) of alloy shall comply with the stipulations in Table 5.

5.1.2 The allowable deviations of chemical composition of finished sheets and strips shall comply with the stipulations of GB/T 15007.

5.2 Smelting Method

Unless it is otherwise stipulated in the contract, smelting method shall be independently selected by the supply-side.

7.2 Principle of Group Batch

Sheets and strips shall receive acceptance inspection by batches. Each batch shall be constituted of sheets and strips of the same designation, the same furnace No., the same thickness and the same thermal treatment heats.

7.3 Sampling Size and Sampling Location

The sampling size and sampling location of sheets and strips shall comply with the stipulations in Table 9.

7.4 Re-inspection and Determination Rules

7.4.1 When the result of chemical composition analysis is disqualified, re-sampling is allowed, so as to conduct re-inspection of the disqualified elements. If the re-inspection result is still disqualified, then, this furnace batch shall be determined as disqualified.

7.4.2 When one of the test results of room-temperature tensile, average grain size, hardness, uniaxial tensile creep, intergranular corrosion and non-metallic inclusion is disqualified, then, from the same batch of sheets or strips (including sheets and strips in the previous inspection), take a double size of samples for re-inspection. The re-inspection results shall all comply with the requirements of this Standard. Otherwise, this batch of sheets or strips shall be determined as disqualified. The supply-side is allowed to re-conduct thermal treatment of the sheets or strips that are disqualified in the re-inspection (excluding non-metallic inclusion), then, submit them as a new batch for acceptance inspection.

7.4.3 When the inspection of surface quality, dimensions and shape is disqualified, then, the individual piece (or coil) of sheet or strip shall be determined as disqualified.

8 Packaging, Marking and Quality Certificate

The packaging, marking and quality certificate of sheets and strips shall comply with the stipulations of GB/T 247.

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