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**Sulfuric acid dew-point corrosion resistance steel plate and
strip**

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Sulfuric acid dew-point corrosion resistance steel plate and strip

1 Scope

This document specifies the designation presentation, order contents, size, shape, weight, technical requirements, test methods, inspection rules, packaging, marking and quality certificate of sulfuric acid dew-point corrosion resistance steel plate and strip.

This document applies to sintering machine head, environmental protection flue gas treatment equipment, chimney and air preheater of power plant, desulfurization device in metallurgical industry, barn in tobacco industry, transmission tower, railway vehicle, steel structure in acid corrosion area, and other sulfuric acid dew-point corrosion resistance hot-rolled single-rolled steel plates whose thickness is not more than 50 mm, and hot continuous-rolled steel strips and continuous-rolled steel plates whose thickness is not more than 25.4 mm (hereinafter referred to as steel plates and strips).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the version corresponding to that date is applicable to this document; for undated references, the latest version (including all amendments) is applicable to this document.

GB/T 222, Permissible tolerances for chemical composition of steel products

GB/T 223.5, Steel and iron - Determination of acid-soluble silicon and total silicon content - Reduced molybdosilicate spectrophotometric method

GB/T 223.11, Iron, steel and alloy - Determination of chromium content - Visual titration or potentiometric titration method

GB/T 223.14, Methods for chemical analysis of iron, steel and alloy - The N-benzoyl-N-phenylhydroxylamine extraction photometric method for the determination of vanadium content

GB/T 223.17, Methods for chemical analysis of iron, steel and alloy - The dianthipyrylmethane photometric method for the determination of titanium content

GB/T 223.18, Methods for chemical analysis of iron steel and alloy - The sodium thiosulfate separation iodometric method for the determination of copper content

GB/T 709, Dimension shape weight and tolerances for hot-rolled steel plates and sheets

GB/T 2970, Method for ultrasonic testing of thicker steel plates

GB/T 2975, Steel and steel products - Location and preparation of samples and test pieces for mechanical testing

GB/T 4336, Carbon and low-alloy steel - Determination of multi-element contents - Spark discharge atomic emission spectrometric method (routine method)

GB/T 8170, Rules of rounding off for numerical values & expression and judgment of limiting values

GB/T 17505, Steel and steel products - General technical delivery requirements

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 20125, Low-alloy steel - Determination of multi-element contents - Inductively coupled plasma atomic emission spectrometric method

GB/T 20126, Unalloyed Steel - Determination of low carbon content - Part 2: Infrared absorption method after combustion in an in an induction furnace (With preheating)

JB/T 7901, Metals materials - Uniform corrosion - Methods of laboratory immersion testing

3 Terms and definitions

The following terms and definitions are applicable to this document.

3.1

sulfuric acid dew-point corrosion resistance

Add a certain content of alloying elements to the steel, to increase the corrosion resistance of the sulfuric acid generated by the combination of SO₂, SO₃ and H₂O below the dew point, when the steel is exposed to sulfuric gas (such as a steel chimney that emits sulfur-containing waste gas).

4 Designation representation

The designation of steel consists of three parts -- the first letter “Q” of the Chinese pinyin “Qu” for the word yield in “yield strength”, the specified minimum upper yield strength value and the first letter “NS” of the Chinese pinyin “Nai Suan” for the word acid corrosion in sulfuric acid dew-point corrosion resistance.

Example 1: Q355NS. Where:

Q – the first letter of the Chinese pinyin “Qu” for yield in yield strength;

355 – the specified minimum upper yield strength value, in megapascals (MPa);

NS – the first letter of the Chinese pinyin “Nai Suan” for acid resistance;

When the quality grade of steel is required, the steel quality grade symbol (B, C, D, E) shall be added after the above designation.

Example 2: Q355NSD.

5 Order contents

5.1 The contract or order ordered according to this document shall include the following contents:

- a) reference to this document;
- b) product name (single-rolled steel plate, continuous-rolled steel plate, steel strip);
- c) designation;
- d) quality grade (if required);
- e) specifications and dimensions, unevenness accuracy;
- f) edge state (cut edge EC, mill edge EM);
- g) delivery status;
- h) weight;
- i) other requirements.

5.2 The edge state, thickness and unevenness accuracy of steel plates and strips, if not specified in the contract, shall be chosen by the supplier.

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