

YB

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

YB/T 4163-2016

Replacing YB/T 4163-2007

Hot-rolled steel angles for tower structure

铁塔用热轧角钢

(English Translation)

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Table of Contents

Foreword
1 Scope
2 Normative references
3 Classification and designation
4 Order information
5 Dimension, shape, weight and permissible tolerance
6 Technical requirements
7 Test methods
8 Inspection rules
9 Packaging, marking and quality certificate

Foreword

This document was issued on 22 October 2016 by the Ministry of Industry and Information Technology of the People's Republic of China, and has applied since 1 April 2017.

It replaces YB/T 4163-2007.

Code of China lists YB/T 4163-2026 as the edition that succeeds this one.

It is a YB/T standard: a recommended industry standard of China's iron and steel industry.

1 Scope

This standard specifies the classification and designation, order information, dimension, shape, weight and permissible tolerance, technical requirements, test methods, inspection rules, and packaging, marking and quality certificate of hot-rolled steel angles for tower structure.

This standard is applicable to the hot-rolled steel angles for tower structure (hereinafter referred to as "steel angles").

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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 molybdsilicate spectrophotometric method

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

GB/T 223.12 Methods for chemical analysis of iron, steel and alloy - The sodium carbonate separation - Diphenyl carbazide photometric method for the determination of chromium content

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 223.16 Methods for chemical analysis of iron, steel and alloy - The chromotropic acid photometric method for the determination of titanium content

GB/T 223.23 Iron, steel and alloy - Determination of nickel content - The dimethylglyoxime spectrophotometric method

GB/T 223.26 Iron, steel and alloy - Determination of molybdenum content - The thiocyanate spectrophotometric method

GB/T 223.40 Iron, steel and alloy - Determination of niobium content by the sulphochlorophenol S spectrophotometric method

GB/T 223.53 Methods for chemical analysis of iron, steel and alloy - The flame atomic absorption spectrophotometric method for the determination of copper content

GB/T 223.59 Iron, steel and alloy - Determination of phosphorus content - Bismuth phosphomolybdate blue spectrophotometric method and antimony phosphomolybdate blue spectrophotometric method

GB/T 223.63 Methods for chemical analysis of iron, steel and alloy - The sodium (potassium) periodate photometric method for the determination of manganese content

GB/T 223.68 Methods for chemical analysis of iron, steel and alloy - The potassium iodate titration method after combustion in the pipe furnace for the determination of sulfur content

GB/T 223.69 Iron, steel and alloy - Determination of carbon contents - Gas-volumetric method after combustion in the pipe furnace

GB/T 223.72 Iron, steel and alloy - Determination of sulfur content - Gravimetric method

GB/T 228.1 Metallic materials - Tensile testing - Part 1: Method of test at room temperature

GB/T 229 Metallic materials - Charpy notch impact test

GB/T 232 Metallic materials - Bend testing method

GB/T 2101 General requirement of acceptance, packaging, marking and certification for section steel

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

GB/T 4336 Standard test method for spark discharge atomic emission spectrometric analysis of carbon and low-alloy steel (routine method)

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

YB/T 081 Rule for rounding off of numerical values and judgment of testing values for technical standards of metallurgy

3.1 Classification

The steel angles are classified into Grade 235, Grade 275, Grade 345, Grade 420 and Grade 460 according to the specified minimum yield strength.

3.2 Designation expression

The designation of a steel angle consists of four parts in order: the symbol "Q" representing the yield strength of steel, the specified minimum yield strength, the quality grade, and the first letter "T" of the Chinese Pinyin "Ta" (i.e., the tower).

Example: Q235AT.

Q - the symbol representing the yield strength of steel;

235 - the specified minimum yield strength, in N/mm²;

A, B, C, D, E - the quality grades respectively;

T - the first letter of the Chinese Pinyin "Ta" (i.e., the tower).