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

GB 1499.1-2024

Replacing GB/T 1499.1-2017

**Steel for the reinforcement of concrete - Part 1: Hot rolled plain
bars**

钢筋混凝土用钢 第1部分：热轧光圆钢筋

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Table of Contents

1	Scope
2	Normative references
3	Terms and definitions
4	Designation
5	Size, shape, weight and allowable deviation
5.3	Section shape and allowable size deviation of steel bar
5.4	Delivery type and allowable deviation
5.5	Bending degree and ends
5.6	Weight and allowable deviation
6	Smelting and performance
6.2	Chemical composition
6.3	Mechanical and process properties
6.4	Surface quality
6.4.3	When the steel bars with surface defects other than those specified in
7	Test methods
7.1	Inspection items
7.2	Tensile, bending tests
7.4	Measurement of weight deviation
8	Inspection rules
8.2	Characteristic value inspection
8.3	Delivery inspection
8.3.2	Batching rules
9	Packaging, marks and quality certificates

Foreword

This document was drafted in accordance with the rules given in GB/T 1.1-2020 "Directives for standardization - Part

1.Rules for the structure and drafting of standardizing documents". This document is Part 1 of GB 1499 "Steel for the reinforcement of concrete". The following parts of GB 1499 have been released. - Part

1 Scope

Part 1 of GB 1499 is the product standard for hot rolled plain reinforcing bar - the smooth round bar used for stirrups, links and light reinforcement. It sets the designation, the dimensions, shape, weight and tolerances, the steelmaking and the mechanical and technological properties, the test methods, the inspection rules including the characteristic-value rules in Annex A, and the packaging, marking and quality certificate. The status changed with this edition: the previous text was GB/T 1499.1-2017, recommended, while this one is a GB without the /T and is therefore mandatory - which for a structural material is the point. Issued on 25 June 2024, in force since 25 September 2024. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the edition it replaces are taken from there. The clause text, the tables and the numeric limits are not reproduced on this page - they are in the document itself, which is delivered in full in English translation.

This document specifies the designation, size, shape, weight and allowable deviation, smelting and performance, test methods, inspection rules, packaging, marks and quality certificates for the hot rolled plain bars the reinforcement of concrete (hereinafter referred to as steel bars). This document is applicable to hot rolled straight strips or coils of reinforced concrete. This document is not applicable to regenerative steel bars for reinforcement made of finished steel.

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 molybdosilicate spectrophotometric method

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, Iron, steel and alloy -- Determination of manganese content - Sodium (potassium) periodate spectrophotometric method

GB/T 223.85, Steel and iron -- Determination of sulfur content -- Infrared absorption method after combustion in an induction furnace

GB/T 223.86, Steel and iron -- Determination of total carbon content -- Infrared absorption

method after combustion in an induction furnace

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

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

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 28900, Test methods of steel for reinforcement of concrete YB/T 081, Rule for rounding off of numerical values and judgement of testing values for technical standards of metallurgy

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1 hot rolled plain bars The finished bars that after the hot rolling form, the cross -section is usually round, smooth surface.

3.2 characteristic value In the unlimited inspection, the division value corresponding to the probability of a certain regulation.

4 Designation

4.1 The yield strength feature value of the bar is 300.

4.2 See Table 1 for the composition and meaning of bar designation.

5 Size, shape, weight and allowable deviation

5.1 Nominal diameter range The nominal diameter of the steel bar is 6 mm ~ 25 mm.

5.2 Nominal cross-sectional area and theoretical unit weight The nominal cross-sectional area and theoretical unit weight of steel bar shall meet the requirements of Table 2.

5.4 Delivery type and allowable deviation

5.4.1 Straight steel bars shall be delivered according to the specified length. The delivery

length shall be specified. The allowable deviation for length is mm.

5.4.2 Steel bars not exceeding 16 mm are allowed to be delivered in coils. When delivering, the head and tail shall be cut. The weight of each coil shall not be less than 500 kg. The weight of each plate shall not be less than 1000 kg.

5.5 Bending degree and ends

5.5.1 The bending degree of straight steel bars shall not affect normal use. The curvature per meter shall not exceed 4 mm. The total curvature shall not exceed 0.4% of the total length of the steel bar.

5.5.2 The end of the steel bar shall be cut straight. Local deformation shall not affect use.

5.6 Weight and allowable deviation

5.6.2 The allowable deviation between the actual weight and theoretical weight of steel bars shall comply with the provisions of Table 4.

6 Smelting and performance

6.1 Smelting method Steel shall be smelted using a converter or electric arc furnace.

6.2 Chemical composition

6.2.1 The chemical composition of steel bars (melting analysis) shall comply with the provisions of Table 5.

6.2.2 The allowable deviation of the chemical composition of finished steel bars shall comply with the provisions of GB/T 222.

6.3 Mechanical and process properties

6.3.1 The mechanical property characteristic values of steel bars, such as lower yield strength R_{eL} , tensile strength R_m , elongation at break A , and maximum total elongation at break A_{gt} , shall comply with the provisions of Table

6. The mechanical performance characteristic values listed in Table 6 shall be used as the minimum guaranteed values for delivery inspection.

6.4 Surface quality

6.4.1 Steel bars shall have no harmful surface defects.

6.4.2 When the weight, size, cross-sectional area, mechanical properties, and process performance of the steel bars brushed by the wire brush meet the requirements of Chapter 5 and 6.3, rust scale, uneven surface, or oxidized iron scale shall not be considered as