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

GB/T 46017-2025

Copper bar for charging pile connector

充电桩连接器用铜棒

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1 Scope

This document specifies the classification and marking, technical requirements, test methods, inspection rules, marking, packaging, transportation, storage, and accompanying documents and order forms of copper bars for charging pile connectors.

This document applies to the production and trade of copper bars for charging pile connectors (hereinafter referred to as the "bars").

2 Normative References

GB/T 231.1

GB/T 351

GB/T 2828.1

GB/T 4340.1

GB/T 5121

GB/T 5231

GB/T 8170

GB/T 8888

GB/T 23606

GB/T 26303.2

GB/T 32791

GB/T 34505

3 Terms and Definitions

This document does not have terms or definitions that need to be defined.

4.1 Product Classification

The designation, code, state and specifications of the bars shall conform to the provisions of Table 1.

Table 1 -- Designation, Code, State and Specifications of the Bars

4.2 Product Marking

Product marking shall be expressed in the following order. product name, serial No. of this document, designation (or code), state and specifications.

5.1 Chemical Composition

The chemical composition of the bars shall conform to the requirements of GB/T 5231.

5.2.1 Diameter and permissible deviation

The diameter of the bars and its permissible deviation shall conform to the provisions of Table 2.

Table 2 -- Diameter of the Bars and Its Permissible Deviation

5.2.2 Length and permissible deviation

The permissible deviation for fixed or multiple lengths of the bars is +5 mm. For multiple lengths, the sawing amount during sawing segmentation shall be included, with each sawing amount being 5 mm. Fixed or multiple lengths shall be within the range of random lengths and specified in the order forms; otherwise, the products will be supplied in accordance with random lengths.

5.2.3 Bevel

The ends of the bars shall be cleanly sawn. Provided that the bar length does not exceed the permissible deviation, the maximum bevel of the cut shall not exceed 0.25 mm.

5.2.4 Straightness

The straightness of the bars shall conform to the provisions of Table 3.

5.5 Oxygen Content

The metallographic examination results of oxygen content for bars of designations TU0, TU1 and TU2 shall conform to the provisions of Figure A.1 and Figure A.2 in YS/T 335-2009.

5.6 Hydrogen Embrittlement Test

Bars of designations TUA0.05 and TUA0.1 may undergo a hydrogen embrittlement test. After the closed bending test, no cracks shall appear on the outer surface of the specimen.

5.7 Internal Quality

Bars of designations TTe0.3 and TTe0.5 shall undergo fracture surface inspection. The fracture surface of the bars shall be dense and without tailing, and defects such as porosity, delamination and inclusions exceeding those specified in YS/T 336 are not permitted.

5.8 Surface Quality

The surface of the bars shall be smooth and clean and shall not have defects that may affect their use.

6.1 Chemical Composition

The chemical composition analysis of the bars shall be performed in accordance with the provisions of GB/T 5121 (all parts) or YS/T 482. Arbitration shall be conducted in accordance with the provisions of GB/T 5121 (all parts).

6.2 Overall Dimensions and Permissible Deviations

The overall dimensions of the bars and their permissible deviations shall be measured in accordance with the provisions of GB/T 26303.2.

6.3.1 Tensile test

The tensile test of the bars shall be conducted in accordance with the provisions of GB/T 34505.

6.3.2 Hardness

The Brinell hardness test of the bars shall be conducted in accordance with the provisions of GB/T 231.1, and the Vickers hardness test shall be conducted in accordance with the provisions of GB/T 4340.1.

6.4 Electrical Properties

The electrical properties of the bars shall be tested in accordance with the provisions of GB/T 351 or GB/T 32791. Arbitration shall be conducted in accordance with the provisions of GB/T 351.

6.5 Oxygen Content

The oxygen content of the bars shall be tested in accordance with the provisions of YS/T 335- 2009.

6.6 Hydrogen Embrittlement Test

The hydrogen embrittlement test of the bars shall be conducted in accordance with the provisions of GB/T 23606.

6.7 Internal Quality

The fracture surface inspection of the bars shall be conducted in accordance with the provisions of YS/T 336.

6.8 Surface Quality

The surface quality of the bars shall be visually inspected.

7.1 Inspection and Acceptance

7.1.1 The bars shall be inspected by the supply-side or a third party, and the product quality shall conform to the provisions of this document and the order forms.

7.1.2 The demand-side may re-inspect the received products in accordance with the provisions

of this document and the order forms. If the re-inspection results do not conform to the provisions of this document or the order forms, it shall be proposed to the supply-side within 3 months from the date of receipt of the products, and the matter shall be resolved through negotiation between the supply-side and the demand-side. If arbitration is required, the arbitration sampling shall be jointly conducted by both the supply-side and the demand-side.

7.2 Batching

The bars shall be submitted for acceptance in batches. Each batch shall consist of bars of the same designation, state and specifications, and the weight of each batch shall not exceed 5,000 kg.