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

GB/T 34497-2017

**Copper and copper alloy strip and foil for terminals and
connectors**

端子连接器用铜及铜合金带箔材

(English Translation)

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1 Scope

This Standard specifies the terms and definitions, requirements, test methods, inspection rules, signs, packaging, transportation, storage, quality certificates and purchase order (or contract) content for copper and copper alloy strip and foil for terminals and connectors.

This Standard is applicable to copper and copper alloy strip and foil for terminals and connectors (hereinafter referred to as the strip and foil).

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 228.1-2010, Metallic materials - Tensile testing - Part 1. Method of test at room temperature

GB/T 232, Metallic materials - Bend test

GB/T 351, Metallic materials - Resistivity measurement method

GB/T 4340.1, Metallic materials - Vickers hardness test - Part 1. Test method

GB/T 5121 (all parts), Methods for chemical analysis of copper and copper alloys

GB/T 5231, Designation and chemical composition of wrought copper and copper alloys

GB/T 8888, Wrought heavy non-ferrous metal products-packing, marking, transportation, storing and certificate of quality

GB/T 26303.3, Measuring methods for dimensions and shapes of wrought copper and copper alloys - Part 3.Sheets and strips

YS/T 478, Method for electrical conductivity measurement of copper and copper alloys by use of eddy current

YS/T 482, Methods for analysis of copper and copper alloys - The atomic emission spectrometry

YS/T 483, Methods for analysis of copper and copper alloys - X-Ray fluorescence spectrometric (wavelength dispersive)

YS/T 668, Sampling method of physical and chemical testing for copper and copper alloys

YS/T 815, Preparation Method of Test Pieces for Mechanical and Technological Properties of Copper and Copper Alloys

3 Terms and definitions

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

3.1

sheet shape

The presence and degree of wave or buckling of the strip and foil.

4.1.1 Designations, states and specifications

The designations, states and specifications of the strip and foil shall comply with the provisions of Table 1.

The surface of the strip and foil shall be smooth and clean. There shall be no defects that affect the use.

5.1 Chemical composition

The analysis of the chemical composition of the strip and foil is carried out according to the regulations of GB/T 5121 (all parts) or YS/T 482 or YS/T 483.

The arbitration shall be conducted in accordance with the provisions of GB/T 5121 (all parts).

5.2.1 The thickness and allowable deviation, width and allowable deviation of

the strip and foil, side curvature, burr, longitudinal curl, and twist are tested in accordance with the provisions of GB/T 26303.3.

5.2.2 The sheet shape detection method for the strip and foil is cutting method.

Slit the strip and foil with a unit length of 1m into 10mm wide strips evenly along the longitudinal direction. After slitting, each strip in the width direction will lose its restraint and recover elastically. It is manifested as elongation or contraction.

Its longitudinal length will no longer be the same. Multiply the ratio of the difference between the longest bar and the shortest bar to the unit length by

105, and it shall be the sheet shape of the strip and foil, as shown in Figure 2.

Calculate according to formula (1).

Figure 2 -- Schematic diagram of the elastic recovery of each slit after slitting in the width direction where,

I - sheet shape of the strip and foil, in millimeters per millimeter (mm/mm), expressed as (I -unit);

ΔL - difference between the longest longitudinal slitting length and the shortest longitudinal slitting length of the foil along the width direction, in millimeters (mm);

L' - Longest longitudinal slitting length with the strip and foil, in millimeters (mm);

L'' - Shortest longitudinal slitting length with the strip and foil, in millimeters (mm);

L - Specified unit length of the strip and foil, in millimeters (mm).

5.3 Mechanical properties

The tensile test of the strip and foil is carried out according to the regulations of

GB/T 228.1-2010. The specimen number is P02 or P04 in Table B.1 of Annex

B of GB/T 228.1-2010. The Vickers hardness test of strip foil is carried out in accordance with the provisions of GB/T 4340.1.

5.4 Bending test

The bending test of the strip and foil is carried out in accordance with the provisions of GB/T 232.

5.5 Electrical properties

The electrical performance test of the strip and foil shall be carried out in accordance with the provisions of YS/T 478 or GB/T 351.

5.6 Bending stress relaxation test

The test method for bending stress relaxation of the strip and foil shall be negotiated and determined by the supplier and the purchaser.

5.7 Surface quality

The surface quality of the strip and foil shall be inspected visually.

6.1 Inspection and acceptance

6.1.1

The strip and foil shall be inspected by the supplier's technical supervision department, so as to ensure that the quality of the product meets the requirements of this Standard and the purchase order (or contract). The supplier's technical supervision department shall fill in the quality certificate.

6.1.2

The purchaser shall re-inspect the received product in accordance with the provisions of this Standard. If the inspection result does not conform to the requirements of this Standard and the purchase order (or contract), it shall be submitted to the supplier in written form and the supplier and the purchaser shall negotiate and resolve. Objections that belong to surface quality and dimensional deviations shall be raised within 1 month from the date of receipt of the product. Other quality objections shall be raised within 3 months after receiving the product. If arbitration is required, arbitration sampling shall be conducted jointly by both the supplier and the purchaser.

6.2 Batching

The strip and foil shall be submitted for acceptance in batches. Each batch consists of the products of the same designation, state and specification. The weight of each batch shall be no more than 4500kg (if the batch is the same melting time, the batch size may not be limited).

6.3 Inspection items

6.3.1

Each batch of the strip and foil shall be inspected for chemical composition, external dimensions and allowable deviations and surface quality.

6.3.2

Each batch of strip and foil shall be inspected for mechanical properties (tensile test or hardness test). Choose either tensile test or hardness test. When not specified in the contract, a tensile test shall be carried out. When the tensile test is selected, if the purchaser requires a hardness test and it is specified in the contract, the hardness test shall also be carried out. Hardness test results are for reference only. When the hardness test is selected, if the purchaser requires a tensile test and it is specified in the contract, the tensile test shall also be carried out. The tensile test results are for reference only.