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

GB/T 17937-2024

Replacing GB/T 17937-2009

Aluminums-clad steel wires for electrical purposes

电工用铝包钢线

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Foreword

This document is in accordance with the provisions of GB/T 1:1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting: This document replaces GB/T 17937-2009 "Aluminum clad steel wire for electrical use": Compared with GB/T 17937-2009, except for structural adjustment and In addition to logical changes, the main technical changes are as follows:

- Added grades and types (see Chapter 4);
- Added 25%IACS conductivity grade aluminum clad steel wire, 10%IACS and 14%IACS conductivity grade aluminum clad invar wire (see 4:1);
- Added the minimum aluminum layer thickness requirements for LB25, LBY10 and LBY14 (see 5:4);
- Changed the tensile strength, stress at 1% elongation and elongation of LB14 and LB20, changed the tensile strength and 1% elongation of LB
- 23 Long-term stress, increased tensile strength, 1% elongation stress, elongation and resistivity requirements for LB25, LBY10 and LBY14 (See Table 3, Table 4 of the:2009 edition);
- Added torsional performance requirements for aluminum-clad Invar wire (see 5:8);
- Added the requirements and test methods for the linear expansion coefficient of aluminum-clad Invar steel (see 5:10 and 6:9);
- Changed the requirements for joints (see 5:11, 4:11 of the:2009 edition);

- Added appearance test method (see 6:1);
- Added diameter test method (see 6:2);
- Changed some contents of the tensile strength test method (see 6:3, 6:3:1 of the:2009 edition);
- Added the initial values for determining the stress at 1% elongation and the total elongation at break (see 6:4);
- Added test methods for joints (see 6:10);

1 Scope

GB/T 17937-2024 is the Chinese national standard on aluminums-clad steel wires for electrical purposes, in the field of electrical engineering. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 25 April 2024 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 November 2024. Classification: ICS 29.060.10, CCS K11. 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 issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the classification, technical requirements, inspection rules, delivery length and packaging, acceptance and rejection of aluminum clad steel wire for electrical use: Corresponding test methods: This document is applicable to electrical hard-drawn bare aluminum-clad steel wires with different electrical and mechanical properties, including those used in overhead stranded wires and all aluminum Manufacturing, testing and application of aluminum-clad steel wire and aluminum-clad invar wire for steel stranded wire:

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document: For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document: GB/T 3048:

2 Test methods for electrical properties of wires and cables Part 2: Resistivity test of metallic materials

GB/T 4339 Determination of characteristic parameters of thermal expansion of metallic

materials GB/T 4909:

3 Terms and definitions

The following terms and definitions apply to this document: 3:

- 1 Invar An iron-nickel alloy with a low coefficient of linear expansion: 3:
- 2 Aluminum-clad steel wire A round wire consisting of a round steel (carbon steel or Invar) wire covered with a uniform and continuous layer of aluminum:

4 Categories

1 Level Aluminum clad steel wire is divided into LB14, LB20, LB23, LB25, LB27, LB30, LB35 and LB40 grades according to conductivity: The rates were 14%IACS, 20:3%IACS, 23%IACS, 25%IACS, 27%IACS, 30%IACS, 35%IACS and 40% respectively: IACS: Aluminum clad Invar wire is divided into LBY10 and LBY14 grades according to conductivity, and their corresponding conductivity is 10% IACS and 14% respectively: IACS:

Note: IACS stands for International Annealed Copper Standard: The calculation method of the conductivity of aluminum-clad steel wire is shown in A:3 in Appendix A: