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

GB/T 17048-2017

Replacing GB/T 17048-2009

Hard-drawn aluminium wire for overhead line conductors

架空绞线用硬铝线

(English Translation)

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Table of Contents

Preface
1 Scope
2 Normative references
3 Electrical properties
4 Material
5 Surface quality
6 Diameter and diameter deviation
7 Length and length deviation
8 Connector
9 Sample
10 Test site
11 Mechanical properties test
12 Resistivity test
13 Certificate
Appendix A (Informative) Overhead stranded hard aluminum wire with product model means
Appendix B (informative) This standard and IEC 60889:1987 subsection number control list

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard replaces GB/T 17048-2009 "overhead strand with a hard aluminum wire", compared with the GB/T 17048-2009 main technical changes as follows.

--- The scope of an increase of hard aluminum resistance level and cross-sectional shape (see Chapter 1, 2009 edition 1.1);

--- Increase the resistivity and temperature coefficient of resistance at 20 °C for different resistance grades of hard aluminum (see Chapter 3);

--- Increased the equivalent diameter and equivalent diameter of hard aluminum line deviation (see Chapter 6);

--- Increasing the mechanical properties of different types of hard aluminum round wire and hard aluminum wire (see 11.1);

--- Modify A.1 in Appendix A, "code" for the "type code", delete A.1.1 and A.1.2; modified aluminum round line representation Act and examples, an increase of hard aluminum line representation and examples (see Appendix A, 2009 edition of Appendix A).

This standard uses redrafted Law Amendment uses "IEC 60889:1987" overhead stranded hard aluminum wire. " this standard compared with IEC 60889:1987, there are more structural adjustments. Appendix B lists the standard and IEC 60889.

1987 reg number control list.

The technical differences between this standard and IEC 60889:1987 are as follows to meet the actual needs of China's power industry.

--- Chapter 1 increased the resistance level of hard aluminum wire, an increase of hard aluminum wire and its corresponding diameter range;

--- Added Chapter 2 Normative references;

--- Chapter 3 adds a hard aluminum resistance level and the corresponding electrical performance requirements;

--- Chapter 6 increased the duralumin aluminum hard-aluminum wire equivalent diameter and equivalent diameter deviation requirements;

--- 11.1 increased the mechanical properties of hard aluminum line;

--- Added Appendix A "Overhead Stranded with hard aluminum product line that" to facilitate the use of this standard.

This standard proposed by the China Electrical Equipment Industry Association.

This standard by the National Bare Wire Standardization Technical Committee (SAC/TC422) centralized.

1 Scope

This standard specifies the nominal diameter range of 1.25mm ~ 5.00mm hard aluminum round wire and nominal equivalent diameter range of 2.00mm ~ Mechanical and electrical properties of 6.00 mm hard aluminum wire. Hard aluminum is divided into four resistance levels, respectively, with L, L1, L2, L3 said. section Shape is divided into two types of round lines and profiles.

This standard applies to the overhead transmission wire with hard aluminum wire.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article Pieces. For undated references, the

latest edition (including all amendments) applies to this document.

Test methods for electrical properties of electric wire and cable - Part 2. Electrical resistivity test on metallic materials (IEC 60468-1.

1974, MOD)

Bare wires - Test methods - Part 2. Dimensional measurements GB/T 4909.2-2009 Bare wires - Test methods - Part 3. Tensile test GB/T 4909.3-2009 Bare wires - Test methods - Part 7. Winding test

3 Electrical properties

The electrical properties of hard aluminum should comply with the provisions of Table 1. See the Appendix A for the method of expressing the type of hard aluminum wire.

Table 1 20 °C DC resistivity and temperature coefficient of resistance

model

DC resistivity at 20 °C, the maximum value ohm · mm²/m (% IACS) 20 °C when the temperature coefficient of resistance 1/°C L, LX1, LX2 0.028264 (61.0) 0.00403 L1, L1X1, L1X2 0.028034 (61.5) 0.00407 L2, L2X1, L2X2 0.027808 (62.0) 0.00410 L3, L3X1, L3X2 0.027586 (62.5) 0.00413 Calculation, the hard aluminum 20 °C when the physical data should take the following values.

--- Density .703kg/dm³;

--- Linear expansion coefficient .23 x 10⁻⁶ (1/°C).

4 Material

Hard aluminum should be made of aluminum with an aluminum content of not less than 99.5% purity in order to achieve the mechanical and electrical properties specified in this standard.