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

GB/T 23308-2009

**Aluminium-magnesium-silicon alloy wire for overhead line
conductors**

架空绞线用铝-镁-硅系合金圆线

(English Translation)

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Foreword

This standard is equivalent to the use of IEC 60104-1987 "overhead wire with aluminum - magnesium - silicon alloy round" (English version).

The main differences between this standard and IEC 60104-1987 are as follows.

- in accordance with the Chinese language used to modify some of the format;
- the preamble of the international standard was removed;
- the "normative reference document" in the preamble to adjust the international standard is 1.2;
- adjust the diameter range from 4.50mm to 4.80mm;
- Added Appendix A Aerial Strand with aluminum-magnesium-silicon alloy round wire product model design method.

Appendix A to this standard is an informative appendix.

This standard is proposed by China Electrical Equipment Industry Association.

This standard by the National Wire and Cable Standardization Technical Committee (SAC/TC213) centralized.

This standard is responsible for drafting units. Shanghai Cable Research Institute.

This standard participates in the drafting unit. Hangzhou Cable Co., Ltd., Wuhan Cable Group Co., Ltd., Shanghai Zhongtian Aluminum Co., Ltd., Guangdong male Force double benefit cable Co., Ltd., Xinhui three new electrical equipment Co., Ltd., Shanghai Yalong Industrial Co., Ltd.

1.1 Scope

This standard applies to two types of aluminum-magnesium-silicon alloy round wire with different mechanical and electrical properties for the production of overhead Electric wire. And the mechanical properties and electrical properties of aluminum-magnesium-silicon alloy round wire with diameter range of 1.50mm ~ 4.80mm are specified.

These two models are LHA1 and LHA2, respectively.

1) corresponds to type A and type B as specified in IEC 60104.

See Appendix A for product representation.

1.2 Normative references

The terms of the following documents are hereby incorporated by reference into this standard. Whichever is the date of the reference file, which is followed by all (Not including corrigenda) or revisions are not applicable to this standard, however, encourage the parties to reach an agreement under this section to study Whether you can use the latest version of these files. For undated references, the latest edition applies to this standard.

GB/T 3048.2-2007 Test methods for electrical performance of wire and cable - Part 2. Resistivity test of metallic conductor materials (IEC 60648. 1974, MOD) GB/T 4909.3 Test methods for bare wires - Part 3. Tensile test Test methods for bare wires - Part 7. Coiling test GB/T 4909.7 IEC 60028. 1925 International Standard for Copper Resistance Calculation parameters of aluminum - magnesium - silicon alloy round wire Calculation should be used in line with this standard aluminum - magnesium - silicon alloy round wire values shown in Table 1.

Table 1 Calculation parameters of aluminum-magnesium-silicon alloy round wire

LHA1 LHA2

Resistivity at 20 ° C, max/(nohm · m) 32.840a 32.530b Density at 20 ° C/(g/cm³) 2.703 2.703 Linear expansion coefficient (1/° C) 23 x 10⁻⁶ 23 x 10⁻⁶ Resistance coefficient at 20 ° C (1/° C) 0.0036 0.0036 a is equivalent to 52.5% IACS (see IEC 60028. 1925).

b is equivalent to 53.0% IACS.

3 Material

The alloy round wire should be made of heat-treated aluminum-magnesium-silicon alloy material, the composition should be with the LHA1 and LHA2 type of mechanical and electrical performance.

4 Surface quality

The surface of the alloy round wire should be smooth and should not have any defects such as cracks, burrs, cracks, inclusions, etc. that are not commensurate with good merchandise.

5 Diameter and Diameter Tolerance

The nominal diameter of the alloy round wire (mm) is accurate to two digits after the decimal point. The difference between each measured value and the nominal value shall not be greater than that in Table 2 Column value.

GB/T 23308-2009/IEC 60104. 1987