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

GB/T 20141-2018

Replacing GB/T 20141-2006

**Formed wire concentric lay overhead electrical stranded
conductors**

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Table of Contents

Foreword

1 Scope

Foreword

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

This standard replaces GB/T 20141-2006 "type line concentric stranded overhead conductor", compared with GB/T 20141-2006 main technical changes

The following is as follows.

--- Added L1, L2, L3 hard aluminum profiles, increased LHA3, LHA4 aluminum alloy profiles, and removed grade B galvanized steel

Core, added LB14, LB20A aluminum clad steel wire (see 1.1, Chapter 1 of the.2006 edition);

--- Increased the model and name of the type of concentric stranded overhead conductor (see 1.2);

--- Removed the definition of aluminum (3.1 version of.2006);

--- Revised the definition of the twisted direction and merged the two definitions (see 3.3, 3.4 of the.2006 edition);

--- Removed the definition of the compaction factor (see 3.6 of the.2006 edition);

--- Increased cross-sectional shape definition (see 3.7);

--- Increased the resistivity of L1, L2, L3, LHA3, LHA4 (see 4.1, 5.1 of the.2006 edition);

--- Removed the marking system (Chapter 4 of the.2006 edition);

--- Removed the production process of the forming line (5.2 of.2006 edition);

--- Revised the representation of the pitch-to-diameter ratio of the steel strand and the conductor strand, and modified the column into a tabular form (see 4.5.3,.2006 edition)

5.5.3 and 5.5.4);

--- Revised the provisions of the joint production method (see 4.6.6,.2006 version of 5.6.6);

--- Added joint strength specification for aluminum alloy wire, deleted Note 1 and Note 2 in the.2006 edition (see 4.6.7, 5.6.6 of.2006 edition);

---Modified some of the standard increments caused by the twisting (see Table 4, Table 2 of the.2006 edition);

--- Increased the twisting increment of aluminum alloy core aluminum wire strands (see Table 5);

--- Calculate the breaking force of steel (aluminum-clad steel) core type stranded wire when adding 4 layers of aluminum (aluminum alloy) stranded wire (see 4.8.2,.2006 edition)

5.8.2);

--- Increased the calculation method of DC resistance (see 4.9);

--- Increased the DC resistance requirements of the wire (see 5.2.1,.2006 edition of 6.2.1);

--- Increased wire DC resistance test method (see 5.5.5);

--- Added inspection of single line resistivity (see 5.6.7).

This standard uses the redrafting method to modify the use of IEC 62219.2002 "overhead wire type concentric stranded wire".

This standard has more structural adjustments than IEC 62219.2002. Appendix A lists this standard and IEC 62219.2002.

The chapter number change comparison checklist.

There are technical differences between this standard and IEC 62219.2002, and the terms involved in these differences have been passed on the outer margins of the margins.

The vertical single line (|) is marked, and a list of the corresponding technical differences and their causes is given in Appendix B.

This standard has made the following editorial changes.

--- Change the standard name to "Lineline Concentric Stranded Aerial Wire";

---4.1 added the resistivity of L1, L2, L3, LHA3, LHA4;

--- Change the form of the twisted joint diameter of the wire in IEC 62219.2002 from the form expressed in the text to the form expressed in the table;

--- Amendment IEC 62219.2002 Appendix D is Appendix C of this standard, deletes D.1 of Appendix D of IEC 62219.2002 and

D.2; Revised the recommended wire size and performance table for aluminum wire strands and steel core aluminum stranded wires, and added aluminum alloy wire strands

Wire, aluminum alloy core aluminum wire stranded wire, steel core aluminum alloy wire stranded wire, aluminum clad steel core aluminum wire stranded wire and aluminum clad steel core aluminum alloy wire

Wire size and performance table of the stranded wire;

--- Added Appendix D.

This standard was proposed by the China Electrical Equipment Industry Association.

This standard is under the jurisdiction of the National Bare Wire Standardization Technical Committee (SAC/TC422).

This standard was drafted. Shanghai Cable Research Institute Co., Ltd., Shanghai National Cable Testing Center Co., Ltd., Jiangsu Zhongtian Technology Co., Ltd.

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1 Scope

1.1 This standard specifies the electrical and mechanical properties of the profiled concentric stranded conductors. This standard applies to the type of concentric stranded overhead conductors.

The profiled concentric stranded overhead conductor is composed of one of the following metal single wires in a), or a combination of two metal single wires;

A metal single wire can be combined with any single metal wire of b), c).

a) Aluminum and aluminum alloys.

L, L1, L2, L3 hard aluminum wire, in line with the requirements of GB/T 17048-2017;

LX (1, 2), L1X (1, 2), L2X (1, 2), L3X (1, 2) hard aluminum wire before twisting, in line with GB/T 17048-2017 equivalent

Single wire diameter hard aluminum wire requirements;

LHA1, LHA2 aluminum alloy wire, in line with the requirements of GB/T 23308-2009;

LHA1X (1, 2), LHA2X (1, 2) twisted aluminum alloy wire, in line with the equivalent single wire diameter of GB/T 23308-2009

Alloy wire requirements;

LHA3, LHA4 aluminum alloy wire, in line with the requirements of NB/T 42042-2014;

LHA3X (1, 2), LHA4X (1, 2) twisted front aluminum alloy wire, in line with NB/T 42042-2014 equivalent single wire diameter aluminum

Alloy wire requirements.

b) G1A, G2A, G3A steel wire, in line with the requirements of GB/T 3428-2012.

c) LB14, LB20A aluminum-clad steel wire, in line with the requirements of GB/T 17937-2009.

1.2 The model and name of each type of wire concentric stranded overhead conductor product included in this standard are shown in Table 1.

Table 1 Model and name of the wire

Model Name

JLX1, JLX2, JL1X1, JL1X2, JL2X1, JL2X2, JL3X1, JL3X2 aluminum wire strand

JLHA1X1, JLHA1X2, JLHA2X1, JLHA2X2

JLHA3X1, JLHA3X2, JLHA4X1, JLHA4X2

Aluminum alloy wire strand

JLX1/LHA1, JLX2/LHA1, JLX1/LHA2, JLX2/LHA2

JL1X1/LHA1, JL1X2/LHA1, JL1X1/LHA2, JL1X2/LHA2

JL2X1/LHA1, JL2X2/LHA1, JL2X1/LHA2, JL2X2/LHA2

JL3X1/LHA1, JL3X2/LHA1, JL3X1/LHA2, JL3X2/LHA2

Aluminum alloy core aluminum wire strand

JLX1/G1A, JLX2/G1A, JLX1/G2A, JLX2/G2A, JLX1/G3A, JLX2/G3A

JL1X1/G1A, JL1X2/G1A, JL1X1/G2A, JL1X2/G2A, JL1X1/G3A, JL1X2/G3A

JL2X1/G1A, JL2X2/G1A, JL2X1/G2A, JL2X2/G2A, JL2X1/G3A, JL2X2/G3A

JL3X1/G1A, JL3X2/G1A, JL3X1/G2A, JL3X2/G2A, JL3X1/G3A, JL3X2/G3A

Steel core aluminum wire strand

JLHA1X1/G1A, JLHA2X1/G1A, JLHA3X1/G1A, JLHA4X1/G1A

JLHA1X2/G1A, JLHA2X2/G1A, JLHA3X2/G1A, JLHA4X2/G1A

JLHA1X1/G2A, JLHA2X1/G2A, JLHA3X1/G2A, JLHA4X1/G2A

JLHA1X2/G2A, JLHA2X2/G2A, JLHA3X2/G2A, JLHA4X2/G2A

JLHA1X1/G3A, JLHA2X1/G3A, JLHA3X1/G3A, JLHA4X1/G3A

JLHA1X2/G3A, JLHA2X2/G3A, JLHA3X2/G3A, JLHA4X2/G3A

Steel core aluminum alloy wire strand