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

GB/T 1179-2017

Replacing GB/T 1179-2008

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

(English Translation)

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Foreword

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

This standard replaces GB/T 1179-2008 "round wire concentric stranded overhead conductor", compared with GB/T 1179-2008 main technical changes as follows.

--- Removed the relevant description of the specification number, using the nominal section representation method (see Appendix D of the 2008 version);

--- Merged Appendix D and Appendix E of the 2008 version, removed the unusual specifications, increased the domestic common model specifications, and formed a new Appendix A.

(See Appendix A, Appendix D and Appendix E of the 2008 edition);

--- Modified the common specifications of aluminum alloy stranded wire JLHA (1, 2), increased the recommended wire size and wire performance of JLHA (3, 4) (See Table 1 and Appendix A);

---Modified the common specifications of aluminum clad steel stranded wire JLB (14, 20A), and increased the recommended wire of aluminum clad steel stranded wire JLB (27, 35, 40) Dimensions and wire properties (see Table 1 and Appendix A);

- All galvanized steel wire (including reinforcing core and steel strand), removed the B-grade galvanized layer (see 1.1 and Appendix A, 2008 version 1.1 and Appendix D);
- Increased wire size and wire performance recommended by steel strand JG (4, 5) A (see Table 1 and Appendix A);
- Increased wire size and wire performance recommended by steel core aluminum stranded wire JL (1, 2, 3)/G (1, 2, 3) A (see Table 1 and Appendix A);
- Modified the common specifications of steel core aluminum alloy stranded wire JLHA (1, 2)/G (1, 2, 3) A, increase the power JLHA (3, 4)/G (1, 2, 3) A recommended wire size and wire performance (see Table 1 and Appendix A);
- Increased wire sizes recommended by aluminum-clad steel core aluminum stranded wires JL/LB14, JL (1, 2, 3)/LB14 and JL (1, 2, 3)/LB20A Wire performance (see Table 1 and Appendix A);
- Increased wire size and wire performance recommended by aluminum-clad steel core aluminum alloy stranded wire JLHA (1, 2)/LB14, modified JLHA (1, 2)/LB20A common specifications (see Table 1 and Appendix A);
- Increased wire size and wire performance recommended by aluminum alloy core aluminum stranded wire JL (1, 2, 3)/JLHA (1, 2) (see Table 1 and Appendix A);
- Added part of the "standard increment caused by the twist" (see Table 4 and Table 5, Table 4 of the 2008 version);
- Revised the rated breaking force (RTS) calculation method (see 5.7, 4.7 of the 2008 version);
- Added "creep test" and "strand resistance" as type test items (see 6.2.1 and 6.5.5, 6.5.6);
- Added "single line performance after twisting" as a sampling test project (see 6.2.2);
- Increased the "stretching force test" arbitration test method (see 6.5.3);
- Added the informational Appendix C "Elastic Modulus and Linear Expansion Coefficient of Round Wire Concentric Stranded Aerial Wire Products" (see Appendix C);
- Added the informative Appendix G "Technical differences and causes of this standard and IEC 61089:1991" (see Appendix G).

This standard uses the redrafting method to modify the use of IEC 61089:1991 "round wire concentric stranded overhead conductor" and its amendment 1 (1997).

This standard has more structural adjustments than IEC 61089:1991. This standard and IEC 61089:1991 are listed in Appendix F.

The chapter number is compared to the list.

There are technical differences between this standard and IEC 61089:1991, 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 G. IEC 61089:1991 Amendment 1 (1997) of the Round Wire Concentric Twisted Overhead Wire has been directly incorporated into this standard, and the provisions relating to these contents have been passed on the outside.

The vertical double line (||) of the margin position is marked 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).

1 Scope

1.1

This standard specifies the electrical and mechanical properties of round wire concentric stranded conductors. Round wire concentric stranded overhead wire by any of the following Metal single wire combination.

a) Aluminum and aluminum alloy wire L-shaped hard aluminum wire, in line with GB/T 17048-2017;

L1 type hard aluminum wire, in line with GB/T 17048-2017;

L2 type hard aluminum wire, in line with GB/T 17048-2017;

L3 type hard aluminum wire, in line with GB/T 17048-2017;

LHA1 type aluminum alloy wire, in line with GB/T 23308-2009;

LHA2 type aluminum alloy wire, in line with GB/T 23308-2009;

LHA3 type aluminum alloy wire, in line with NB/T 42042-2014;

LHA4 type aluminum alloy wire, in line with NB/T 42042-2014.

b) Galvanized steel wire for overhead stranding G1A steel wire, in line with GB/T 3428-2012;

G2A steel wire, in line with GB/T 3428-2012;

G3A steel wire, in line with GB/T 3428-2012;

G4A steel wire, in line with GB/T 3428-2012;

G5A steel wire, in line with GB/T 3428-2012;

Note 1: G1B or G2B steel wire in GB/T 3428-2012 can be used when special engineering is required.

c) Aluminum clad steel wire LB14 aluminum clad steel wire, in line with GB/T 17937-2009;
LB20A aluminum clad steel wire, in line with GB/T 17937-2009;
LB27 aluminum clad steel wire, in line with GB/T 17937-2009;
LB35 aluminum clad steel wire, in line with GB/T 17937-2009;
LB40 aluminum clad steel wire, in line with GB/T 17937-2009.

Note 2: The resistivity of single-wire metals is arranged in ascending order as follows.

L3. 27.586nohm·m (corresponding to 62.5% IACS) L2. 27.808nohm·m (corresponds to 62% IACS) L1. 28.034nohm·m (corresponding to 61.5% IACS) L. 28.264nohm·m (corresponding to 61% IACS) LHA3. 29.472nohm·m (corresponds to 58.5% IACS) LHA4. 30.247nohm·m (corresponds to 57% IACS) LHA2. 32.530nohm·m (corresponds to 53% IACS) LHA1. 32.840nohm·m (corresponding to 52.5% IACS) LB40. 43.10nohm·m (corresponding to 40% IACS) LB35. 49.26nohm·m (corresponding to 35% IACS) LB27. 63.86nohm·m (corresponds to 27% IACS) LB20A. 84.80nohm·m (corresponding to 20.3% IACS) LB14. 123.15nohm·m (corresponds to 14% IACS) G1A. 191.57nohm·m (corresponding to 9% IACS) G2A. 191.57nohm·m (corresponding to 9% IACS) G3A. 191.57nohm·m (corresponding to 9% IACS) G4A. 191.57nohm·m (corresponding to 9% IACS) G5A. 191.57nohm·m (corresponding to 9% IACS)

Note 3: The density of single-line metals is arranged in ascending order as follows.

Aluminum or aluminum alloy. 2.703g/cm³ Aluminum clad steel wire. LB40. 4.64g/cm³ LB35. 5.15g/cm³ LB27. 5.91g/cm³ LB20A. 6.59g/cm³ LB14. 7.14g/cm³ Galvanized steel wire. 7.78g/cm³

Note 4: Both the supply and demand sides agree. a small amount of mixed rare earth may be added to the hard aluminum wire; the coated metal of the galvanized steel wire may also be a special galvanized layer, such as. zinc-5% Aluminium-rare earth alloy plating layer, 55% aluminum-zinc alloy plating layer, etc., which have a higher corrosion resistance than a general galvanized layer. Using the above specific single line combination Lines should be specified when ordering.

1.2

The model representations of various types of round wire concentric stranded overhead conductor products included in this standard are as follows. For the model and name of each type of product, see

Table 1.