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

GB/T 12706.2-2020

**Power cables with extruded insulation and their accessories for rated voltages
from 1 kV ($U_m=1.2$ kV) up to 35 kV ($U_m=40.5$ kV) - Part 2: Cables for rated
voltages from 6 kV ($U_m=7.2$ kV) up to 30 kV ($U_m=36$ kV)**

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Foreword

GB/T 12706 "Extruded insulated power cable and accessories with rated voltage of 1kV ($U_m = 1.2\text{kV}$) to 35kV ($U_m = 40.5\text{kV}$)"

For 4 parts.

--- Part 1. rated voltage 1kV ($U_m = 1.2\text{kV}$) and 3kV ($U_m = 3.6\text{kV}$) cables;

--- Part 2. Cable with rated voltage of 6kV ($U_m = 7.2\text{kV}$) to 30kV ($U_m = 36\text{kV}$);

--- Part 3. Cable with rated voltage 35kV ($U_m = 40.5\text{kV}$);

--- Part 4. Test requirements for cable accessories with rated voltages of 6kV ($U_m = 7.2\text{kV}$) to 35kV ($U_m = 40.5\text{kV}$).

This part is part 2 of GB/T 12706.

This part replaces GB/T 12706.2-2008 "Extruded insulation of rated voltage 1kV ($U_m = 1.2\text{kV}$) to 35kV ($U_m = 40.5\text{kV}$)"

Power cables and accessories. Part 2. Rated voltage 6kV ($U_m = 7.2\text{kV}$) to 30kV ($U_m = 36\text{kV}$) cables.

Compared with GB/T 12706.2-2008, the main technical changes except for editorial changes are as follows.

--- Added halogen-free flame retardant (ST8) sheath material (see Table 4);

--- Added requirements for halogen-free flame-retardant cable insulation, inner lining and filling, isolation sleeve and outer sheath (see 6.1, 8.2.2, 13.3.3,

14.2 and Table 5);

--- Increased the nominal insulation thickness of the rated voltage 18/20 (24) kV cable (see Table 7 and Table 8);

--- Modify the requirements of the extruded inner liner and the wrapped inner liner (see 8.2,

8.1 in the.2008 edition);

--- Revised the regulations on the coverage rate of copper strips (see 10.2.3,.2008 version 10.2.3);

--- Modified the formula for calculating the nominal thickness of the lead sleeve (see Chapter 12, 12.1 of the.2008 edition);

--- Amended the provisions of the armor material (see 13.2, 13.2 of the.2008 edition);

--- Added the requirements for the diameter of the thick round wire and the nominal thickness of the insulating sleeve or inner liner under the armor (see 13.4, Table 10 and 13.6);

--- The thickness of the outer sheath has been modified (see 14.3, 14.3 of the.2008 edition);

--- Added the determination method of cable conductor temperature in the test (see 15.4 and Appendix C);

--- Increased the withstand voltage test of the outer sheath with semi-conductive layer (see 16.1 and 16.5);

--- Modified the thickness requirements for non-metallic sheaths (see 17.5.3 and 19.3,.2008 version 17.5.3 and 19.2);

--- Increasing the measurement of the wrapping rate of the wrapping tape and the gap rate of the metal tape (see 17.11);

--- Increasing the thickness measurement of the inner liner and/or tape cushion (see 17.12 and 19.26);

--- Amended the cylinder diameter for bending test (see 18.2.4, 18.1.3 of the.2008 edition);

--- Added the measurement requirements for the thickness of the lead sleeve (see 19.4);

--- Increasing the halogen-free flame retardant (ST8) jacket material mechanical properties, high temperature pressure, low temperature performance, combustion performance and water absorption performance test (see

19.6, 19.7, 19.9, 19.10, 19.16, 19.25, Table 21 and Table 25);

--- Modified the cable flame retardant test (see 19.16,.2008 version 19.14);

--- Modify the applicable object of carbon black content test of black polyethylene sheath (see 19.17.1,.2008 version 19.15.1);

--- Modified the electrical test requirements after cable installation (see 20.3.1,.2008 version 20.2.1);

--- Removed the heat extension test load time (see Table 15 and Table 16, the.2008 version

of Table 19 and Table 23);

- Modified the electrical test requirements for insulation (see Table 17, Table 15 of the 2008 edition);
- Increased the rule of rounding off the specified value (see B.3);
- Increased the polyolefin outer sheath code (see G.1.1);
- Added the product representation method of flame retardant cables (see G.1.3);
- Increased delivery length and marking requirements for finished cables (see G.2.2 and G.2.3);
- Added the recommended ambient temperature for halogen-free flame-retardant sheathed cable installation (see G.3.1).

This section uses the redrafting method to modify the use of IEC 60502-2:2014 "rated voltage 1kV ($U_m = 1.2\text{kV}$) to 30kV ($U_m =$

36kV) Extruded insulated power cables and accessories Part 2. Rated voltage 6kV ($U_m = 7.2\text{kV}$) to 30kV ($U_m = 36\text{kV}$)

cable".

Compared with IEC 60502-2:2014, this part has some changes in structure, mainly as follows.

- According to the requirements of GB/T 1.1-2009, the suspension section of 17.9 was adjusted;

- Added Table 5 and Table 25;

- Adjusted the number of the table in the order mentioned, starting from Table 6, the correspondence between the table of this part and the table of IEC 60502-2:2014

Table 6 corresponds to Table 5, Table 7 corresponds to Table 6, Table 8 corresponds to Table 7, Table 9 corresponds to Table 8, Table 10 corresponds to Table 9, Table 11 corresponds to Table 10,

Table 12 corresponds to Table 11, Table 13 corresponds to Table 12, Table 14 corresponds to Table 13, Table 15 corresponds to Table 19, Table 16 corresponds to Table 23, Table 17 pairs

Table 15, Table 18 corresponds to Table 14, Table 19 corresponds to Table 16, Table 20 corresponds to Table 17, Table 21 corresponds to Table 20, Table 22 corresponds to Table 21,

Table 23 corresponds to Table 18, Table 24 corresponds to Table 22;

- Removed 12.1 and 12.2;

--- Increased 17.11, 17.12, 19.25 and 19.26;

--- Added Chapter 21;

--- Deleted Appendix B, added Appendix G, so that the appendix number has changed. Appendix B of this part corresponds to IEC 60502-2..2014

Appendix C, Appendix C corresponds to Appendix G of IEC 60502-2..2014.

There are technical differences between this part and IEC 60502-2..2014. The main technical differences and their causes are as follows.

--- With regard to normative quotation documents, this part has been adjusted with technical differences to adapt to my country's technical conditions and adjustments

The situation is reflected in Chapter 2 "Regulatory Reference Documents", with specific adjustments as follows.

* Replaced IEC 60038 (see 4.1) with GB/T 156 modified to adopt international standards;

* Replaced IEC 60811-201, IEC 60811-202 with GB/T 2951.11-2008 equivalent to international standards

IEC 60811-203 and IEC 60811-501 (see 17.5.1, 17.8, 19.2.2, 19.3.2, 19.4.2, 19.5.3, 19.6.1, 19.6.3, 19.21.1, Table 16, Table 20 and Table 21);

* Replaced IEC 60811-401 with GB/T 2951.12-2008 equivalent to international standards (see 19.5.2, 19.6.2,

19.7, Table 20 and Table 21);

* Replaced IEC 60811-402, IEC 60811-502 with GB/T 2951.13-2008 equivalent to international standards

IEC 60811-503 and IEC 60811-606 (see 19.15.1, 19.18.1, 19.22.1, 19.25.1, Table 15, Table 23, Table 24

And Table 25);

* Replaced IEC 60811-504, IEC 60811-505 and IEC 60811-504 with GB/T 2951.14-2008 equivalent to adopting international standards

IEC 60811-506 (see 19.10, Table 22, Table 23 and Table 25);

* Replaced IEC 60811-403, IEC 60811-404 and IEC 60811-403 with GB/T 2951.21-2008 equivalent to adopting international standards

IEC 60811-507 (see 17.10.1, 19.12, 19.14.1, Table 15 and Table 16);

* Replace IEC 60811-508 and IEC 60811-509 with GB/T 2951.31-2008 equivalent to the international standard (see