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

GB/T 3048.2-2007

Replacing GB/T 3048.2-1994

**Test methods for electrical properties of electric cables and
wires -- Part 2: Test of electrical resistivity of metallic materials**

电线电缆电性能试验方法 第2部分:金属材料电阻率试验

(English Translation)

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Foreword

GB/T 3048 "electrical wire and cable performance test method" is divided into 14 parts.

--- Part 1. General;

--- Part 2. Test resistivity of metal materials;

--- Part 3. Semi-conductive rubber material volume resistivity test;

--- Part 4. DC resistance of conductors;

--- Part 5. Insulation resistance test;

--- Part 7. Tracking resistance test;

--- Part 8. AC voltage test;

--- Part 9. spark test of insulated cores;

--- Part 10. extruded jacket spark test;

- Part 11. dielectric loss tangent test;
- Part 12. Partial discharge test;
- Part 13. impulse voltage test;
- Part 14. DC voltage test;
- Part 16. Surface resistance test.

This section GB/T 3048 Part 2.

The partial modification of the use of IEC 60468. 1974 "Methods of measurement of resistivity of metallic materials" (in English).

This part of the structure in line with GB/T 1.1-2000 "Standardization Guide Part 1. Standard structure and drafting of the rules," and with GB/T 3048 coordinated with other parts. This section lists the reg number and IEC 60468 in Appendix A. 1974 Number of reg According to the list.

Taking into account the actual needs of the development of technology to detect and measure, in using IEC 60468. 1974 when this part has made several changes related Technical differences have been incorporated into the body and they are involved in the provision of the margin of a single vertical line identification; these technical differences are as follows.

--- According to the standard structure GB/T 1.1-2000 principles and provisions of the GB/T 3048 other parts of the harmonization of this section by Added Chapter 2, "Normative references" and Chapter 4, "test equipment";

--- IEC 60468. 1974 are listed in Table 1, in addition to the parameters measuring range of tolerance, the relevant part of the standard provisions also repeat Statements, which have been integrated in this section, in order to reduce unnecessary duplication;

--- Added 3.5 "Wheatstone bridge" and 3.6 "Kelvin Bridge" in Part 3 of this chapter, "Terms and definitions" in order to in this section

6.2.1 Resistance Measurement "two-point" and "four point" corresponds;

--- Increase in Chapter 4, "test equipment" to improve the resistance, length, mass, temperature measuring instruments and equipment. Also Supplemented with 4.1 "as the instrument other than the electricity bridge", mainly for the high-precision digital inclusion widely used in recent years, DC resistance tester;

--- 5.5 to supplement standard "reference test" in the handling of the samples prepared in this section Chapter 5, "Sample Preparation";

--- This section IEC 60468. 1974, respectively, expressed in Chapter 6, "a reference to" and Chapter 7, "conventional methods" chapters merger A chapter, that this part of Chapter 6,

"Test Procedure." This section uniformly in Chapter 6 of these were made two test methods Regulations;

--- Taking into account the actual operating conditions and the development of new technology tests, the following changes were made in this section.

1) Due to the current temperature control technology improves, 6.1.2 and 6.1.3 of this part of the IEC 60468. 1974 as specified in points Do the (15 to 25) "reference test" °C and (10 ~ 35) °C and the "routine testing" the test specimen temperature control range to do a more Big changes were changed (20 ± 0.1) °C and (20 ± 5) °C, making it closer to the standard temperature of 20 °C;

2) This section supplements 6.4.1.1 and 6.4.1.2, given a simple cross-section of the sample cross-sectional area is calculated, and provides for taking "pi" Value of significant digits;

Temperature coefficient of resistance is much smaller parameters in the formula may not be relevant will "gamma" included. Compared to 1974,. with IEC 60468 Clear "gamma" negligible, this applies to all related calculations, and with sufficient accuracy.

For ease of use, the IEC 60468. 1974, this section also made the following editorial changes.

--- With a decimal point instead of a comma as the decimal point, "";

--- Deleted international standards foreword;

--- Increase the informative appendix A guide to use.

This Part replaces GB/T 3048.2-1994 "electrical wire and cable performance test methods for metallic conductor resistivity test." this time Amended in accordance with GB/T 1.1-2000 this section have been adjusted.

Section compared with the GB/T 3048.2-1994 The main changes are as follows.

--- Standard Chinese name to "wire and cable electrical performance test methods - Part 2. Metal resistivity test";

--- Standard English name to

"Test methods for electrical properties of electric cables and wires - Part 2.

Test of electrical resistivity of metallic materials";

--- Overall structure and layout of this section according to GB/T 1.1-2000 modified.

1) Chapter 1 of "Range" (1994 edition Chapter 1; Chapter 1 of this edition);

2) Chapter 2 is "normative references" (1994 edition, Chapter 2; edition Chapter 2);

3) Chapter 3 as "Terms and Definitions" (1994 edition Chapter 3; Chapter 3 of this edition);

4) Chapter 4, to "test equipment" (1994 edition, Chapter 4; Chapter 4 of this edition);

5) Chapter 5 is "Sample Preparation" (1994 edition Chapter 5; Chapter 5 of this edition);

6) Chapter 6 is "Test Program" (1994 edition, Chapter 6; Chapter 6 of this edition);

7) Chapter 7 is "the test results and calculations" (1994 edition, Chapter 7; edition Chapter 7);

8) Chapter 8 of "test records" (1994 edition, Chapter 8; Chapter 8 of this edition);

--- In Chapter 1, "scope" to modify the scope of this section, the "arbitration test" and "routine test" to "benchmark test" and "Routine testing" (1994 edition Chapter 1; Chapter 1 of this edition);

--- In Chapter 3, "Terms and definitions" by GB/T 2900.4 "Electrical Electrical Alloy term" editorial changes and supplements Entry DC Bridge (1994 Edition Chapter 3; edition Chapter 3, 3.5, 3.6);

--- In Chapter 4, "test equipment" carried out the necessary integration (1994 edition 4.1,5.2.2; this edition 6.2.2,4.2);

--- In Chapter 5, "Sample Preparation" in the merged sample "shape" and "characteristics" are requirements, a uniform comprehensive regulations, and added a special mode of preparation of the sample (1994 edition Chapter 5; edition, Chapter 5, 5.5);

--- The following modifications were made in Chapter 6, "Test Program".

1) is no longer on the "routine tests" do individual requirements, and the "reference test" Merge unified comprehensive regulations (1994 edition Excerpts of chapter 6); Chapter 6;

2) supplemented with simple cross section conductor cross-sectional area of the sample is calculated (1994 edition no; this edition 6.4.1.2,6.4.1.3);

3) the temperature of the sample made more stringent rules (1994 edition 6.2.1,6.9.1; this edition 6.1.2,6.1.3);

--- In Chapter 7, "Experimental Results and Calculation" confirmation under the provisions of this part of the test temperature, the formula for calculating the temperature coefficient of linear expansion "Gamma" negligible with sufficient accuracy (1994 Version 7.3; 7.1 edition);

--- In Chapter 8, "trial record" to modify some of the requirements, delete the words "test report" was, for the standardized "test records" (1994 edition, Chapter 8, 8.2; edition Chapter 8, 8.2).

This section of the Appendix A, Appendix B, Appendix C and Appendix D is an informative annex.

This part is proposed by the China Electrical Equipment Industrial Association.

This part of the National Standardization Technical Committee of wire and cable.