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

GB/T 3048.12-2025

Replacing GB/T 3048.12-2007

**Test methods for electrical properties of electric cables and
wires - Part 12: Partial discharge test**

电线电缆电性能试验方法 第12部分：局部放电试验

(English Translation)

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Appendix A (Informative) This document corresponds to the structural numbering of IEC 60885-3:2015.10

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 12 of GB/T 3048 "Test Methods for Electrical Properties of Wires and Cables". GB/T 3048 has published the following...

part.

---Part 1: General Provisions;

---Part 2: Resistivity Testing of Metallic Materials;

---Part 3: Volume Resistivity Tests for Semiconducting Rubber and Plastic Materials;

---Part 4: Conductor DC Resistance Test;

---Part 5: Insulation Resistance Test;

---Part 7: Tracking Resistance Test;

- Part 8: AC Voltage Test;
- Part 9: Spark Test of Insulated Wire Cores;
- Part 10: Spark Test for Extruded Sheaths;
- Part 11: Dielectric Loss Tangent Test;
- Part 12: Partial Discharge Tests;
- Part 13: Impulse Voltage Test;
- Part 14: DC Voltage Test;
- Part 16: Surface Resistance Test.

This document supersedes GB/T 3048.12-2007 "Test Methods for Electrical Properties of Wires and Cables - Part 12: Partial Discharge Test", and is consistent with...

Compared with GB/T 3048.12-2007, apart from structural adjustments and editorial changes, the main technical changes are as follows.

- The detection sensitivity has been changed (see 4.2.6, 2007 version 4.2.6);
- The expression of measurement results has been changed (see 4.2.6, 6.2.2, 6.3.2, 6.3.3, 6.4.2, 6.4.3.2, and 4.2.6 and 6.2.2 in the 2007 edition).
- 6.2.3, 6.3.2, 6.3.3, 6.4.2, 6.4.3.2).

This document is modified to adopt IEC 60885-3:2015 "Test methods for electrical properties of cables - Part 3: Partial discharge of whole extruded power cables".

Test Methods.

This document has undergone significant structural adjustments compared to IEC 60885-3:2015. A comparison of the structural numbering changes between the two documents is provided below.

See Appendix A for the table.

The technical differences between this document and IEC 60885-3:2015, and the reasons therefor, are as follows.

- The normative reference GB/T 3048.1 (see 3.5.1) has been added to adapt to my country's technical conditions and increase operability;
- Chapter 4 of IEC 60885-3:2015, which contained a description of partial discharge, has been deleted;
- The normative reference GB/T 3048.8-2025 (see 6.6.1, 7.2) has been added to increase the operability of the test;
- The normative reference JB/T 10435 (see 7.4, Chapter 8) has been added to adapt to my

country's technical conditions and increase operability;

---Change 5.6 of IEC 60885-3:2015 to Appendix B because the "requirements for terminating impedance" are mainly based on theoretical estimations and are relatively few.

The measurement method used;

---Change 5.5 of IEC 60885-3:2015 to Annex C, because "drawing a double-pulse diagram" is not necessary for cable partial discharge testing.

The steps are for the verification of test circuits only;

---The types and requirements for test terminals have been expanded (see 5.2) because cable terminals without partial discharge are essential for partial discharge testing techniques.

An important component;

---Added precautions (see Chapter 7) to improve cable partial discharge testing techniques.

The following editorial changes have been made to this document.

---To align with existing standards, the standard title has been changed to "Test Methods for Electrical Properties of Wires and Cables - Part 12: Partial Discharge Test";

---Added Appendix A (information) "Comparison of chapter and clause numbers in this document with those in IEC 60885-3:2015".

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

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

This document is under the jurisdiction of the National Technical Committee on Standardization of Wires and Cables (SAC/TC213).

Introduction

Wires and cables are widely used in power transmission and signal transmission, and various types of products are available depending on the application scenario. Electrical performance is a key evaluation criterion.

GB/T 3048 is an important general indicator of the performance of electrical wires and cables, and is of great significance for ensuring the design and use objectives of electrical wires and cables.

GB/T 3048 establishes universal fundamental test methods applicable to the electrical performance testing of different types of wires and cables. It is proposed that these methods be developed by the following 14 departments.

Composition.

---Part 1: General Provisions. This document aims to define the terminology, definitions, and general provisions for testing the electrical properties of wires and cables.

---Part 2: Resistivity Testing of Metallic Materials. The purpose is to specify the testing methods and requirements for the resistivity of metallic materials in wires and cables.

---Part 3: Volume Resistivity Test for Semiconducting Rubber and Plastic Materials. The purpose is to determine the volume resistivity of semiconducting rubber and plastic materials used in wires and cables.

Test methods and requirements for resistivity.

---Part 4: DC Resistance Test for Conductors. The purpose is to specify the test methods and requirements for the DC resistance of conductors in wires and cables.

---Part 5: Insulation Resistance Test. The purpose is to specify the test methods and requirements for the insulation resistance of wires and cables.

---Part 7: Tracking Resistance Test. The purpose is to specify the test methods and requirements for the tracking resistance of wires and cables.

---Part 8: AC Voltage Test. The purpose is to specify the test methods and requirements for AC voltage of wires and cables.

---Part 9: Spark Test of Insulated Cores. The purpose is to specify the test methods and requirements for spark testing of insulated cores in electrical wires and cables.

---Part 10: Spark Test for Extruded Sheaths. The purpose is to specify the test method and procedures for the spark test when extruding the corrosion-resistant sheath of wires and cables.

Require.

---Part 11: Dielectric Loss Tangent Test. The purpose is to specify the test method for the dielectric loss tangent of wires and cables.

Require.

---Part 12: Partial Discharge Tests. The purpose is to specify the test methods and requirements for partial discharge in wires and cables.

---Part 13: Impulse Voltage Test. The purpose is to specify the test methods and requirements for impulse voltage of wires and cables.

---Part 14: DC Voltage Test. The purpose is to specify the test methods and requirements for DC voltage of wires and cables.

---Part 16: Surface Resistance Test. The purpose is to specify the test methods and