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

GB/T 3048.13-2025

Replacing GB/T 3048.13-2007

**Test methods for electrical properties of electric cables and
wires - Part 13: Impulse voltage test**

电线电缆电性能试验方法 第13部分：冲击电压试验

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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 13 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 Test of 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 replaces GB/T 3048.13-2007 "Test Methods for Electrical Properties of Wires and Cables - Part 13.Impulse Voltage Test", and is consistent with...

Compared with GB/T 3048.13-2007, apart from structural adjustments and editorial changes, the main technical changes are as follows.

- The peak oscillation and overshoot requirements have been modified (see 4.1.1.1, 2007 version 4.1.1.1);
- Added graphical illustrations of the test voltage waveform (see 4.1.2.1 and 4.1.2.2);
- The operating impulse voltage waveform has been modified (see 4.1.2.2, 2007 version 4.1.2.2);
- Added requirements for stacked impact tests (see 4.1.1.3, 4.1.2.3, 4.3.1.3, and 9.1.5);
- A superimposed impulse voltage test has been added (see Chapter 8);
- The description of the validity of the experimental data has been revised (see 9.3.1 and 9.3.2, 6.3 in the 2007 edition);
- The description of the impulse voltage margin test has been revised (see 9.4, 6.4 in the 2007 edition);
- The description of the fast overcurrent protection device for the impulse voltage generator in the precautions has been deleted (see section 8.1 of the 2007 edition);
- The description of atmospheric calibration has been revised (see 11.4, 8.5 in the 2007 edition);
- The requirements for test records have been changed (see Chapter 12, Chapter 9 of the 2007 edition).

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).

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The release history of this document and the document it replaces is as follows.

- First published in 1992 as GB/T 3048.13-1992, and first revised in 2007 as GB/T 3048.13-2007;
- This is the second revision.

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 requirements for the surface resistance of wires and cables.

Note. The original GB/T 3048 standard system had 16 parts, but GB/T 3048.5-2007 replaced GB/T 3048.5-1994 and GB/T 3048.6- GB/T 3048.9-2007 replaced GB/T 3048.9-1994 and GB/T 3048.15-1994, therefore the current GB/T 3048 standard system has fewer standards. Parts 6 and 15.

Test methods for electrical properties of wires and cables Part 13. Impulse Voltage Test

1 Scope

This document describes the test method for impulse voltage of wires and cables, including sample preparation, test procedure, test results and evaluation, and precautions. Items and test records.

This document applies to impulse voltage tests on various types of power cables and their accessories with a maximum rated voltage U_m of 1kV and above.

2 Normative references

GB/T 311.6

GB/T 2900.19