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

GB/T 31838.3-2019

**Solid insulating materials -- Dielectric and resistive properties --
Part 3: Resistive properties (DC methods) -- Surface resistance
and surface resistivity**

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Foreword

GB/T 31838 "Dielectric and Electrical Properties of Solid Insulation Materials" currently publishes the following sections.

--- Part 1. General;

--- Part 2. Resistance characteristics (DC method) Volume resistance and volume resistivity;

---Part 3. Resistance characteristics (DC method) Surface resistance and surface resistivity;

--- Part 4. Resistance characteristics (DC method) Insulation resistance.

This part is the third part of GB/T 31838.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This section uses the translation method equivalent to IEC 62631-3-2.2015 "Dielectric and electrical resistance properties of solid insulating materials Part 3-2.

Determining the resistance characteristics (DC method) The general method of surface resistance and surface resistivity.

The documents of our country that have a consistent correspondence with the international documents referenced in this part are as follows.

---GB/T 10580-2015 Standard conditions for the use of solid insulating materials before and during testing (IEC 60212.2010,

IDT);

--- GB/T 31838.2-2019 Dielectric and resistive properties of solid insulating materials - Part 2. Resistance characteristics (DC method)

Volume resistance and volume resistivity (IEC 62631-3-1..2016, IDT);

--- GB/T 31838.4-2019 Dielectric and resistive properties of solid insulating materials - Part 4. Resistance characteristics (DC method)

Insulation resistance (IEC 62631-3-3..2015, IDT).

This section has made the following editorial changes.

--- Change the standard name to "Solid and dielectric properties of solid insulating materials - Part 3. Resistance characteristics (DC method)

Resistance and surface resistivity.

This part was proposed by China Electrical Equipment Industry Association.

This part is under the jurisdiction of the National Technical Committee for Standardization of Electrical Insulation Materials and Insulation Systems (SAC/TC301).

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1 Scope

This part of GB/T 31838 specifies the test method for determining the surface resistance and surface resistivity of solid insulating materials under DC voltage.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

Standard conditions for the pre-test and test of IEC 60212 solid electrical insulating materials (Standard conditions for use prior

To and during the testing of solid electrical insulating materials)

IEC 62631-3-1 Dielectric and resistive properties of solid insulating materials - Part 3-1. Determination of resistance characteristics (DC method)

And volume resistivity general method

[Dielectric and resistive properties of solid insulating materials - Part 3-1.

Determination of resistive properties (DC Methods) - Volume resistance and volume resistivity - General

method]

IEC 62631-3-3 Dielectric and resistive properties of solid insulating materials - Part 3-3. Determination of resistance characteristics (DC method) Insulation resistance

[Dielectric and resistive properties of solid insulating materials - Part 3-3. Determination of resistive properties (DC Methods) - Insulation resistance]

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

Electrode device

A conductor device that is in contact with the surface of the sample being measured.

Note. The placement of the electrodes should ensure adequate contact with the surface of the material (for example, by conductive coating) and/or application of mechanical forces to the electrodes and materials.

The location where the material surface is in contact.

3.2

Spring electrode spring loaded electrodes

Wire electrode systems, usually with a spring structure with a sharp corner, two parallel metal blade electrodes with a certain gap.

3.3

Wire electrode line electrodes

A parallel line electrode with a certain gap applied to the surface of the material to be tested.

3.4

Ring electrode annularelectrodes

The center is a circular electrode with a space around the ring electrode.

Note. Similar to the shape of the guard electrode defined in IEC 62631-3-1, when measuring the surface resistance, the ring electrode is no longer used as a protective electrode, and the protection function is