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

GB/T 22079-2019

Replacing GB/T 22079-2008

**HV polymeric insulators for indoor and outdoor use - General
definitions, test methods and acceptance criteria**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard replaces GB/T 22079-2008 "General indoor and outdoor polymer insulators for nominal voltages greater than 1000V.

Compared with GB/T 22079-2008, the main technical changes are as follows.

--- As the definition of "high voltage" is clear, the applicable product range of this standard includes polymer insulators for AC and DC systems (see

(Chapter 1, Chapter 1 of the.2008 edition);

--- Adjusted normative references (see Chapter 2, Chapter 2 of the.2008 edition);

--- Added terms and definitions of "high pressure" (see 3.1);

--- In order to maintain consistency with IEC 62217..2012 and reduce exclusivity, the 3.2 note is replaced by "connecting parts can be installed in the insulation

"Both ends" was changed to "connection parts can be installed at the ends of the insulation parts" (see Note 3.2, Note 3.1 of the.2008 edition);

--- Modified the title of Chapter 4 (see Chapter 4, Chapter 4 of the.2008 edition);

--- Modified the content of "creepage distance" (see Chapter 8, Chapter 8 of the.2008 edition);

--- Added 9.2.1 General (see 9.2.1);

--- Added 9.2.7.1 general rules (see 9.2.7.1);

--- Modified the procedure of "steep wave front impulse voltage test" and added "Note 1 and Note 2" (see 9.2.7.3.1, 9.2.6.2.1 of the.2008 version);

--- Modified the acceptance criteria of the "steep wave front impulse voltage test" (see 9.2.7.3.2,.2008. 9.2.6.2.2);

--- Revised the acceptance criteria for "dry power frequency voltage test" (see

9.2.7.4.2, 2008. 9.2.6.3.2);

--- Added the content of salt spray test at 1000h under DC voltage (see 9.3.3.6, 2008 version 9.3.3.1.1.6);

--- Increased the requirements of the flammability test criteria (see Table 3, 9.3.4.2 of the 2008 edition);

--- Added requirements for DC products in the tracking resistance and erosion test of umbrella cover materials (see 9.3.5);

--- Increased the requirements for the hydrophobicity test of composite insulators (suitable for silicone rubber umbrella cover materials) (see 9.3.6);

--- Modified the sample size and judgment criteria of the dye penetration test (see 9.4.1.1 and 9.4.1.2, 9.4.1.1 and 9.4.1.2 of the 2008 edition);

--- Removed Appendix A and Appendix B of the 2008 edition.

This standard uses the redrafting method to modify and adopt IEC 62217:2012 "high-voltage polymer insulators for indoor and outdoor use-general definition,

Test methods and acceptance criteria.

Compared with IEC 62217:2012, this standard has more structural changes. Appendix A lists this standard and IEC 62217:2012.

List of chapter and article numbers for comparison.

There are technical differences between this standard and IEC 62217:2012, and the terms related to these differences have passed through the margins on their outer margins.

The installed vertical single line (l) is marked, and a list of corresponding technical differences and their causes is given in Appendix B.

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

This standard is under the jurisdiction of the National Insulator Standardization Technical Committee (SAC/TC80).

This standard was drafted. Tsinghua University, Xi'an High Voltage Apparatus Research Institute Co., Ltd., China Electric Power Research Institute Co., Ltd.

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Introduction

The polymer insulator is composed of one kind of insulating material (resin insulator), two or more kinds of insulating materials (composite insulator). Insulation Materials

Organic compounds usually synthesized from carbon or silicon compounds are crosslinked and form insulators. Insulating materials can consist of different organic and inorganic components

Of organic materials such as fillers and additives. End fittings are used at the ends of the insulator to transfer mechanical loads. Despite these universal

Features, materials used by different manufacturers and structural details used may vary greatly.

For most insulator designs, materials, and their final applications, this standard gives general test items. To avoid in related products

The standards are repeated, and the procedures of different product standards are drafted or modified, and the test items are reorganized in this standard.

Most of these tests are combined into a design test. For insulators of the same design, they are performed only once. Design test

It is to eliminate parts of insulators that are not suitable for high voltage applications in design, materials or manufacturing processes. Time for complete polymer insulator

The influence of the electrical properties of the components and its components (core

material, jacket, interface, etc.) should be considered when determining the design test, the purpose is

Ensure that the insulator has a satisfactory service life under normal operating and environmental conditions.

The contamination test specified in GB/T 4585 or GB/T 22707 is not included in this standard, and the applicability of the method to composite insulators has not been confirmed.

The above-mentioned pollution test results of polymer insulators are inconsistent with actual operating experience. Pollution tests on polymer insulators

Considering.

The purpose of the screening test in the 1000h salt spray tracking and erosion test is to eliminate unsuitable materials or designs, not to predict the absolute

Long-term performance of margin design under cumulative operating stress. See Appendix C for more information.

The first edition of this standard (GB/T 22079-2008) also includes two optional tracking and erosion tests (one is 5000h multi-stress

Test, one is runner test), these methods are no longer a normative option.

Composite insulators have been widely used in AC and DC systems. China has carried out electric tracking and erosion resistance tests, tracking and erosion of umbrella cover materials

Damage test-1000h salt spray and other tests under the corresponding DC voltage test, the test procedure has been specified and accepted in the design test.

High-voltage polymer insulators for indoor and outdoor use

General definitions, test methods and acceptance criteria

1 Scope

This standard specifies common test classifications and test methods for polymer insulator design tests, as well as acceptance or non-conformance when applicable.

Guidelines. These tests and guidelines are to ensure a satisfactory use of the insulator under normal operating and environmental conditions (see Chapter 5).

life.

This standard defines the general term for polymer insulators.

This standard should be used in conjunction with relevant product standards.