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

GB/T 4585-2024

Replacing GB/T 4585-2004

**Artificial pollution tests on high-voltage ceramic and glass
insulators to be used on a. c. systems**

(English Translation)

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents"

Drafting.

This document replaces GB/T 4585-2004 "Artificial pollution test for high voltage insulators for AC systems" and is consistent with GB/T 4585-2004.

In addition to structural adjustments and editorial changes, the main technical changes are as follows.

- Extend the voltage level in the scope to UHV (see Chapter 1, Chapter 1 of the 2004 edition);
- Deleted the chapter "Purpose" (see Chapter 2 of the 2004 edition);
- Change the term "creepage distance of insulators" to "unified creepage distance" (see 3.3, 3.3 of the 2004 edition);
- Added the term "gray density" (see 3.17);
- Added the term "hydrophobic migrating material" (see 3.18);
- Added explanation on the purpose of pollution test (see 4.1);
- Added meteorological correction to the requirements for test equipment (see 4.4.2);
- Added the relationship curve between the gray density and gray scale of the dirty liquid (see 6.3);
- Added quantitative brushing method to the solid layer method (see 6.4.2);
- The general requirements for wetting of the dirt layer are detailed (see 6.6, Chapter 17 of the 2004 edition);
- Added common tolerance tests and acceptance criteria for Procedure A and Procedure B (see Chapter 7);
- Added the determination of 50% withstand voltage of insulators (see 7.2);
- Added "Supplementary information on artificial pollution test for HTM insulators" (see Appendix D).

This document is modified to adopt IEC 60507:2013 "Artificial pollution tests for high voltage porcelain and glass insulators for AC systems".

This document has made the following structural adjustments compared to IEC 60507:2013.

- Deleted 6.8 of IEC 60507:2013;
- Added Chapter 7;
- Appendix A corresponds to Appendix E of IEC 60507:2013;
- Appendix B corresponds to Appendix A of IEC 60507:2013;

- Appendix C corresponds to Appendix B of IEC 60507:2013;
- Added Appendix D;
- Appendix E corresponds to Appendix C of IEC 60507:2013;
- Appendix F corresponds to Appendix D of IEC 60507:2013.

The technical differences between this document and IEC 60507:2013 and their reasons are as follows.

- Added normative references GB/T 2900.8 (see Chapter 3) and DL/T 810-2012 (see 6.3);
- Changed the definition of unified creepage distance (see 3.3) to make it consistent with GB/T 26218.1-2008;
- The definition of the shape factor of the insulator has been changed (see 3.4) to make it conform to the actual usage habits in my country;
- Added the term "hydrophobic migration material" (see 3.18), taking into account the test content of HTM insulators;
- The normative reference GB/T 311.1-2012 replaces IEC 60071-1 (see 4.4.1) to apply my country's technical conditions and the actual situation of the power grid;
- The normative reference GB/T 26218.1-2010 replaces IEC/T S60815-1 (see 5.1, 6.1) to apply to my country's technical Technical conditions and actual power grid conditions;
- Added the relationship curve between the gray density and gray scale of the dirty liquid (see 6.3), based on my country's test experience;
- Added relevant statements on the test method for HTM insulators (see 6.4.1), based on my country's test experience;
- Added quantitative brushing method to the solid layer method (see 6.4.2). my country's testing agencies usually use the quantitative brushing method for testing;
- Added relevant provisions on the surface fog of the test sample (see 6.6), based on my country's test experience;
- Added the solid layer method tolerance test and acceptance criteria common to Procedure A and Procedure B (see Chapter 7), based on the relevant tests in my country the actual situation;
- The normative reference GB/T 16927.1-2011 replaces IEC 60060-1 (see 7.2, C.4) to apply to my country's technology conditions and grid realities;
- Added "Supplementary information on artificial pollution test for HTM insulators", considering the artificial pollution test of HTM insulators.

Requirements (see Appendix D).