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

GB/T 19443-2017

Replacing GB/T 19443-2004

**Insulators for overhead lines with a nominal voltage above 1
500 V - Ceramic or glass insulator units for d.c. systems -
Definitions, test methods and acceptance criteria
(English Translation)**

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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 19443-2004 "insulators for overhead lines with a nominal voltage higher than 1000V for DC systems, porcelain and glass Definition of glass insulator components, test methods and acceptance criteria ", and GB/T 19443-2004 compared to the main technical changes are as follows.

--- In order to meet the definition of high voltage of IEC 62217:2012, the standard name is changed to "direct current with nominal voltage higher than 1500V Insulators for overhead power lines ";

--- Due to a clear DC long rod insulator test by both supply and demand with reference to this standard agreement, Chapter 1 deleted the DC long rods Form insulator test description;

--- To coordinate with GB/T 20642-2006, the term "impact over-voltage breakdown withstand voltage" to "impact breakdown voltage, and repair Changed the definition. "At the same time, the title of chapter 17 was changed to" air impact breakdown test ";

--- Taking into account the DC engineering practice appears V-shaped suspension with the

insulator iron hat electrolytic corrosion phenomenon, in Chapter 6 provides iron cap Zinc ring should be added. At the same time in 35.1 provides that "the thickness of the zinc sleeve should be not less than 4mm, the exposed part of the length should not be less than 7mm, and about 50% of the total length of the zinc sheath. "In 36.1 provides that" the insulator iron cap should be provided with a zinc ring, zinc ring and insulation should be between Seal properly. For suspended suspension used in suspension insulators, zinc ring effective maximum thickness of not less than 2mm. Correct in non-suspended installation of the disc suspension insulator, zinc ring effective maximum thickness of not less than 6mm, the outer edge of the linear length should not be less than 7mm. For long rod insulators, the effective maximum thickness of the zinc ring should be not less than 6mm ", and increase Figure 7 shows Definition of "effective maximum thickness of zinc ring" and "length of straight edge of outer edge"

--- In order to standardize the operation and determine the results, in 35.2,35.3,36.2, an increase of zinc sleeve, zinc ring size measurement methods and criteria.

--- Chapter 7, in order to coordinate and standardize with JB/T 9683-2012, "IEC 60305 and contained in IEC 60433 Model can also be used "to" use the product model specified in JB/T 9683-2012 ";

--- Chapter 21 modified the DC artificial pollution test salt density, only to provide test data, and delete Appendix F of GB/T 19443-2004 "Percentage increase of maximum DC artificial pollution resistance voltage of insulators";

--- Chapter 22, the requirements of the porcelain insulator "one by one implementation of high-frequency or frequency spark discharge test" to "one by one implementation of high-frequency and industrial Frequency spark discharge test ";

--- Chapter 23, due to the ultra-high voltage or UHV engineering insulator string used more insulator, monolithic insulator creepage distance negative bias Poor accumulation will have a significant impact on the performance of the insulator string, the provisions of the average creeper insulators shall not be less than the nominal creepage distance;

--- To avoid duplication of text, GB/T 19443-2004 chapters 24 and 25 merged into Chapter 24 of this standard;

--- In Chapter 24, Chapter 25 and Chapter 26, according to our engineering practice, modify the mechanical and electrical (mechanical) damage load test connection Income constant

--- In Chapter 25, according to our engineering practice, the low temperature of the thermomechanical test was changed from -30 °C to -40 °C;

--- In Chapter 26, according to our engineering practice, to improve the residual mechanical strength test acceptance criteria quality index and requirements;

- According to our engineering practice, the standard connection marks 28 and 32 operating test value by the note into Table 3;
- Because of the standard glass insulators have to withstand temperature cycling test, the 29th chapter of the "porcelain insulator" to "insulator." Taking into account the high alumina cement may not be suitable for experiencing the test temperature exceeds 75 °C, increase "Note. When the insulator using high-alumina cement Glue, the test hot water temperature to be maintained below 75 °C, see GB/T 22709-2008A.2 ";
- Chapter 31, due to environmental protection requirements, and in accordance with IEC/TC36 standards issued in recent years to coordinate, the porosity test with dye Materials from 1% of magenta alcohol solution to red or purple 3% methine dye methanol or ethanol solution;
- Chapter 32 galvanized test, a clear surface exposed should not be visually visible zinc deficiency, and deleted to allow zinc deficiency carried out Remedial note, and direct reference to JB/T 8177;
- Coordinated with the existing engineering practice, the visual inspection of the glass insulators in Chapter 33 direct reference to JB/T 9678-2012;
- Remove GB/T 19443-2004 Table 5 "long rod-shaped porcelain insulator reference table", clear A type insulator test, except the provisions of this standard, the other test requirements and the number of test products should refer to Table 4 of this standard and by the supply and demand both parties agreement;
- Appendix C, an increase of three umbrella products and and 530kN, 550kN grade products, according to the rules JB/T 9683-2012 Write insulator model
- Removed Appendix E "SF6, volume resistance, heat engine and other tests and shaft (diameter), the angular displacement measurement, the maximum thickness of the insulator to determine Icon ", the figure inserted into the text.

This standard uses redrafted law to amend the use of IEC 61325:1995 "Overhead Line Insulators with a nominal voltage higher than 1000V DC system with porcelain or glass insulator string components definition, test methods and acceptance criteria. " this standard compared with IEC 61325:1995, in the standard structure to delete the international standard section number for structural division and Section title, according to the requirements of GB/T 1.1, in accordance with the provisions of Chapter Code division standard content, Appendix A lists this standard and IEC 61325.

1995 reg number control list.

This standard compared with IEC 61325:1995 there are technical differences, the provisions of these differences have been passed in the outer margin of the page margin the vertical single line (|) is marked, and Appendix B shows a list of these technical

differences and their causes.

This standard proposed by the China Electrical Equipment Industry Association.

This standard by the National Standardization Technical Committee insulator (SAC/TC80) centralized.

This standard was drafted unit. China Electric Power Research Institute, Xi'an High Voltage Electric Research Institute Co., Ltd., the national insulator arrester Quantity Supervision and Inspection Center, Suzhou Ceramics Co., Ltd., Dalian Ceramics Group Co., Ltd., NGK Tangshan Ceramics Co., Ltd., Southern Power Network Institute of Science and Technology Co., Ltd., Tsinghua University, Shenzhen Graduate School, Nanjing Electric (Group) Co., Ltd., Yibin, Sichuan Province, Universal Group Co., Ltd., Zigong Cedeville Tempered Glass Insulator Co., Ltd., Chongqing University.

Introduction

The issuing authority of this document draws attention to the fact that statements in compliance with this document may relate to Chapter 36 of the Zinc Ring-related patents use. The patent number/patent application number of the three patents are respectively .201310094428.2,.201310094429.7 and.201320134536.3.

The issuing authority of the document has no position regarding the authenticity, validity and scope of the patent. The patent holder has sent this document the fabric agency pledged that he is willing to negotiate a patent license with any applicant on reasonable and non-discriminatory terms and conditions. The patent the holder's statement has been filed with the issuing authority of this document. Related information can be obtained through the following contact.

Patent holder name China Southern Power Grid Research Institute Co., Ltd., Tsinghua University, Shenzhen Graduate School Contact name. Zhang Fuzeng Address. Yuexiu District, Guangzhou City, Guangdong Dongfeng Road Shuigang Kong on the 8th Please note that in addition to the above patents, some of the contents of this document may still involve patents. The issuing agencies of this document are not responsible for identifying these specializations Lee's responsibility.

Overhead lines with nominal voltages higher than 1500V Insulator DC system with porcelain or glass insulators String element definition, test methods and acceptance criteria

1 Scope

This standard specifies the characteristics of DC overhead power lines with porcelain or glass insulator string components (hereinafter referred to as insulators), and test this Conditions and acceptance criteria for the value of these characteristics.

This standard specifies the GB/T 1001.1 similar to the basic characteristics of the test. In