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

GB/T 20139.1-2016

Replacing GB/T 20139-2006

**Electrical insulation systems -- Thermal evaluation of
modifications to an established electrical insulation system
(EIS) -- Part 1: Wire-wound winding EIS
(English Translation)**

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Foreword

GB/T .20139 "Electrical insulation system has been rated for electrical insulation system (EIS) component adjusted thermal evaluation" contains two section.

Part 1. scattered winding EIS;

Part 2. Forming Windings.

This part is part 1 of GB/T .20139.

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

This part of the GB/T .20139-2006 "electrical insulation structure has been determined on the level of scattered winding insulation structure components the overall thermal assessment method ", compared with GB/T .20139-2006 main technical changes are as follows.

- modified the standard name;
- full text "electrical insulation structure" to "electrical insulation system";
- modified the standard range (see Chapter 1, Chapter 1 of the 2006 edition);
- increase the "enamel winding wire" and other 11 terms (see 3.1 ~ 3.7 and 3.10 ~ 3.13);
- modified Figure 1 (see Figure 1, 2006 version of Figure 1);
- Figure 2 to Figure 7 (see Figure 2 to Figure 7);
- an increase of "phase or earth insulation alternative" (see Chapter 5);
- modified "winding wire replacement" (see Chapter 6, Chapter 6 of the 2006 edition);
- Added "compatibility between composite materials" (see Chapter 10);
- Added "complete thermal aging test" (see Chapter 12).

This part uses the translation method equivalent to the use of IEC 61858-1.:2014 "Electrical Insulation System has determined the level of electrical insulation system (EIS) component evaluation of heat assessment Part 1. scattered winding EIS ".

See Appendix NA for our documents in relation to the normative correspondence between the normative references in this section.

This part is made by China Electrical Equipment Industry Association.

This part of the National Electrical Insulation Materials and Insulation System Standardization Technical Committee (SAC/TC301) centralized.

This part is responsible for drafting units. Shanghai Electric Science Research Institute, Shenzhen Xu Sheng San Yi Technology Co., Ltd., Machinery Industry Beijing Electric Technology Institute of Economic Research.

This part participates in the drafting unit. Dongfang Electric Group Dongfeng Motor Co., Ltd., Suzhou Taihu Electric New Materials Co., Ltd., Shanghai Electrical equipment testing.

1 Scope

This part of GB/T .20139 specifies the required level of electrical insulation system (EIS) components to adjust the heat resistance assessment of the required test Inspection procedures.

This section applies to EIS with a diffuser winding electrical installation.

The test procedure in this section is to compare the performance of the insulation system to be evaluated with the reference insulation system. Insulation systems according to IEC 60505 Has proven operational experience, or has been evaluated according to a test procedure in the IEC 61857 series of standards.

2 Normative reference documents

The following documents are indispensable for the application of this document. For dated references, only the dated edition applies to this article Pieces. For undated references, the latest edition (including all modifications) applies to this document.

GB/T 11021-2014 Electrical insulation - Heat resistance and presentation method (IEC 60085.:2007, IDT) GB/T .20111.1-2015 Electrical insulation systems - Thermal evaluation procedures - Part 1. General requirements - Low pressure (IEC 61857-1.

2008, IDT)

Test method for determination of bond strength of enameled wire substrates by IEC 60172 (Testprocedureforthedeterminationofthetemperatureindexofenameledwindingwires IEC 60216-5 Electrical insulating materials - Heat resistance - Part 5. Determination of relative

heat resistance (RTE) of insulating materials [Electrical insulating materials-thermal endurance properties-Part 5. Determination of relative thermal endurance index (RTE) of an insulating material] IEC 60317-1 SPECIAL WIRE LINE SPECIFICATIONS Part 1. Class 105 Polyvinyl acetal enamelled round copper wire (Specifications for particular types of winding wires-Part 1. Polyvinyl acetal enamelled round copper wire, class 105) IEC 60317-2 Specification for special winding wires - Part 2. Self-adhesive, polyurethane for particular types of winding wires-Part 2. Solderable polyurethane enamelled round copper wire, class 130, with a bonding layer) IEC 60317-3 SPECIAL WIRE LINE SPECIFICATIONS Part 3. 155 grade polyester enamelled round wire (Specifications for particular types of winding wires-Part 3. Polyester enamelled round copper wire, class 155) IEC 60317-4 SPECIAL Winding Code Specification Part 4. 130-Welded Polyurethane Enamelled Copper Round (Specifications for particular types of winding wires-Part 4. Solderable polyurethane enamelled round copper wire, class 130) IEC 60317-8 Specification for special winding wires - Part 8. 180 grade polyester imine enamelled round particular types of winding wires-Part 8. Polyester imine enamelled round copper wire, class 180) IEC 60317-12 Specification for special winding wires - Part 6. 120 grade acetal enamelled round copper wire (Specifications for particular types of winding wires-Part 12. Polyvinyl acetal enamelled round copper wire, class 120) IEC 60317-13 Specification for special winding wires - Part 13. Class 200 polyamide imide composite polyester or polyester imine enamelled round copper wire (Specifications for particular types of winding wires-Part 13. Polyester or polyester imide