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

GB/T 11026.3-2025

Replacing GB/T 11026.3-2017

**Electrical insulating materials - Thermal endurance properties -
Part 3: Instructions for calculating thermal endurance
characteristics
(English Translation)**

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents". Drafting.

This document is Part 3 of GB/T 11026 "Heat Resistance of Electrical Insulation Materials". GB/T 11026 has already published the following parts.

- Part 1: Aging Procedures and Evaluation of Test Results;
- Part 2: Selection of Test Judgment Criteria;
- Part 3: Procedures for calculating heat resistance characteristic parameters;
- Part 4: Aging Oven - Single Chamber Oven;
- Part 5: Precision ovens with aging temperatures up to 300°C;
- Part 6: Aging Ovens - Multi-chamber Ovens;
- Part 7: Determining the Relative Temperature Index (RTI) of Insulating Materials;
- Part 8: Determining the heat resistance index (TI and RTI) of insulating materials using the fixed time limit method;
- Part 9: Guidelines for calculating heat resistance using simplified procedures;
- Part 10: Guidelines for accelerating the determination of the relative heat resistance index (RTEA) based on activation energy calculations using analytical testing methods.

This document replaces GB/T 11026.3-2017 "Electrical Insulation Materials - Heat Resistance Part 3: Calculation of Heat Resistance Characteristic Parameters".

Compared with GB/T 11026.3-2017, the main technical changes in the "Code" are as follows, except for structural adjustments and editorial modifications.

- a) Added "fixed aging temperature and variable aging time" and "illustrated the calculation procedure with examples and recommended appropriate computers". The procedure is for computation (see Chapter 1);
- b) The definition of the term "order statistic" has been changed (see 3.1.2, 2017 version 3.1.2);
- c) The symbol " τ_g " has been added (see 3.2);
- d) Added "Due to certain restrictions, it is permissible to extrapolate the linear mean plot to the endpoint level" (see 4.2.4);
- e) Added "Figure 1. Example of a selected group" (see Figure 1 in 6.1.4);
- f) Added "TI report format for derivation times other than 20000h" (see 7.3.4);

g) The "Heat Resistance Chart" has been changed (see Figure D.1, Figure D.1 in the 2017 edition).

This document is modified to adopt IEC 60216-3:2021 "Electrical insulating materials - Heat resistance - Part 3: Calculation of characteristic parameters of heat resistance".

The technical differences between this document and IEC 60216-3:2021, and the reasons therefor, are as follows.

- a) GB/T 11026.2 has replaced IEC 60216-2 (see Chapter 1), increasing operability;
- b) Change "5.5 of GB/T 11026.1-2016" to "Exposure temperature and time specified in GB/T 11026.1" (see Appendix B), increase operability.

The following editorial changes have been made to this document.

- a) Where there are no technical differences, GB/T 11026.1 replaces IEC 60216-1 (see 5.1.1) and IEC 60216-1:2013. (See Appendix B);
- (b) In the absence of technical differences, GB/T 21223.1 replaces IEC 60943 (see 4.1).

Introduction

GB/T 11026 aims to establish test procedures, test judgment criteria, aging ovens, and relative standards for the heat resistance of electrical insulation materials. Procedures for evaluating heat resistance index, etc. Currently, GB/T 11026 consists of the following 10 parts.

---Part 1: Aging Procedures and Evaluation of Test Results. The aim is to establish aging procedures for evaluating the heat resistance of insulating materials and to improve... How to evaluate the results of aging tests.

---Part 2: Selection of Test Judgment Criteria. The purpose is to propose criteria for judging the endpoint of thermal aging tests on insulating materials.

---Part 3: Procedures for calculating heat resistance characteristic parameters. The purpose is to establish the method for obtaining heat resistance characteristic parameters using GB/T 11026.1 and GB/T 11026.2.

The experimental data were used to derive a calculation program for the heat resistance characteristic parameters.

---Part 4: Aging Oven - Single-chamber oven. The purpose is to specify that the temperature used for heat resistance aging tests should be 20°C higher than ambient temperature.

A single-chamber oven that operates over the entire or a portion of the temperature range of 500°C.

---Part 5: Precision ovens with aging temperatures up to 300°C. The purpose is to specify the environmental conditions used in heat resistance aging tests.

A precision drying oven that operates within a temperature range of 20°C to 500°C, either in the entire range or in part of it.

---Part 6: Aging Oven - Multi-chamber Oven. The purpose is to specify that the temperature used for heat resistance aging tests should be 20°C higher than ambient temperature.

A multi-chamber oven that operates over the entire or a portion of the 500°C temperature range.

---Part 7: Determination of the Relative Temperature Index (RTI) of Insulation Materials. The aim is to establish the use of GB/T 11026.1 and... The test and calculation procedures for deriving the relative temperature index from the test data obtained in GB/T 11026.2.

---Part 8: Determining the Heat Resistance Index (TI and RTI) of Insulating Materials Using the Fixed Time Limit Method. The aim is to establish the use of fixed time limits... The experimental and calculation procedures for deriving the heat resistance index were developed.

---Part 9: Guidelines for Calculating Heat Resistance Using Simplified Procedures. The aim is to establish simplified procedures for obtaining the heat resistance properties of insulating materials.

---Part 10: Guidelines for accelerating the determination of the relative heat resistance index (RTEA) based on activation energy calculations using analytical experimental methods. Objective The goal is to establish a thermal degradation activation energy obtained through thermal analysis and a lifetime point obtained through conventional thermal aging tests, and to evaluate the insulation performance.

The procedure for determining the relative heat resistance index of insulating materials.

1 Scope

This document specifies the methods used in GB/T 11026.1 and GB/T 11026.2[1] for aging at fixed temperatures and variable aging conditions.

Based on the experimental data obtained, a calculation procedure for heat resistance characteristic parameters was derived.

Test data can be obtained through non-destructive testing, destructive testing, or inspection testing, but data obtained from non-destructive testing or inspection testing... The data may be incomplete because the experiment was terminated sometime after the median time during the testing process.

This document illustrates the calculation procedure with examples and recommends