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Electrical insulating materials – A.C. voltage endurance evaluation – Introduction

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Technical specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC/TS 61251, which is a technical specification, has been prepared by IEC technical committee 112: Evaluation and qualification of electrical insulating materials and systems.

This second edition cancels and replaces the first edition which was issued in 1993. It constitutes a technical revision.

The main changes with respect to the previous edition are listed below:

- extension of the scope to cover electrical insulating material and insulation systems;
- removal of references to short time dielectric breakdown strength measurements as an indicator of voltage endurance;

The text of this technical specification is based on the following documents:

Enquiry draft	Report on voting
112/88/DTS	112/95/RVC

Full information on the voting for the approval of this technical specification can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- transformed into an International standard,
- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

ELECTRICAL INSULATING MATERIALS – A.C. VOLTAGE ENDURANCE EVALUATION – INTRODUCTION

1 Scope

This technical specification explains many of the factors involved in voltage endurance tests on electrical insulating materials and systems. It describes the voltage endurance graph, lists test methods illustrating their limitations and gives guidance for evaluating the a.c. voltage endurance of insulating materials and systems from the results of the tests.

The terminology to be used in voltage endurance is defined and explained. It should be emphasized that where this technical specification is concerned with materials, the results may not be directly applicable to the performance of insulating systems.

Voltage endurance tests are used to compare and evaluate insulating materials with regard to their various applications in electrical systems. Determining the ability of electrical insulating materials and systems to endure a.c. voltage stress is complex. The results of voltage endurance tests are influenced by many factors so this technical specification should only be considered as an attempt to present a unified view of voltage endurance for simplified planning and analysis. Some documents for the various practical cases exist and others are being developed.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60243 (all parts), *Electric strength of insulating materials – Test methods*

IEC 62539, *Guide for the statistical analysis of electrical insulation dielectric breakdown data (IEEE Standard 930:2004)*