

Radio interference test on high-voltage insulators

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>See Eesti standard EVS-EN IEC 60437:2024 sisaldab Euroopa standardi EN IEC 60437:2024 ingliskeelset teksti.</p> <p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 26.01.2024.</p> <p>Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.</p>	<p>This Estonian standard EVS-EN IEC 60437:2024 consists of the English text of the European standard EN IEC 60437:2024.</p> <p>This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.</p> <p>Date of Availability of the European standard is 26.01.2024.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p>
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English Version

Radio interference test on high-voltage insulators
(IEC 60437:2023)

Essai de perturbations radioélectriques des isolateurs pour
haute tension
(IEC 60437:2023)

Funkstörprüfungen an Hochspannungsisolatoren
(IEC 60437:2023)

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European foreword

The text of document 36/585/FDIS, future edition 3 of IEC 60437, prepared by IEC/TC 36 "Insulators" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60437:2024.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2024-10-19
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INTERNATIONAL STANDARD

NORME INTERNATIONALE



Radio interference test on high-voltage insulators

Essai de perturbations radioélectriques des isolateurs pour haute tension



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INTERNATIONAL STANDARD

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Radio interference test on high-voltage insulators

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RADIO INTERFERENCE TEST ON HIGH-VOLTAGE INSULATORS**FOREWORD**

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IEC 60437 has been prepared by IEC technical committee 36: Insulators. It is an International Standard.

This third edition cancels and replaces the second edition published in 1997. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) Composite station post and composite hollow core station post insulators have been included;
- b) All paragraphs of Samples test were actualized;
- c) Sample test fast procedure was introduced.

The text of this International Standard is based on the following documents:

Draft	Report on voting
36/585/FDIS	36/591/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

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INTRODUCTION

The first edition of IEC 60437 presented the available information on a radio interference test on high-voltage insulators as a technical report. This allowed further experience in conducting the test and the interpretation of results to be gained.

The second edition incorporated that experience in the form of an International Standard, which gave the recommended procedures for a radio interference test on high-voltage insulators.

This third edition incorporates clarification of test arrangements and the number of insulators to be tested for composite station posts, composite hollow core station posts and hybrid insulators. This edition also incorporates clarification on the fast method for the sample test.

RADIO INTERFERENCE TEST ON HIGH-VOLTAGE INSULATORS

1 Scope

This International Standard specifies the procedure for a radio interference (RI) test carried out in a laboratory on clean and dry insulators at a frequency of 0,5 MHz or 1 MHz or, alternatively, at other frequencies between 0,5 MHz and 2 MHz.

This document applies to insulators for use on AC or DC overhead power lines and overhead traction lines with a nominal voltage greater than 1 000 V.

In service the RI characteristics of an insulator may be modified by the ambient conditions, particularly rainfall and other moisture, and by pollution. It is not considered feasible to specify reproducible test conditions to simulate a range of ambient conditions. Hence only tests on clean and dry insulators are specified in this document.

NOTE The effects of insulator surface conditions, including pollution, are presented in CISPR 18-2:2017, clause 6.3.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60060-1:2010, *High-voltage test techniques – Part 1: General definitions and test requirements*

IEC 60137:2017, *Insulated bushings for alternating voltages above 1 000 V*

IEC 60168:1994, *Tests on indoor and outdoor post insulators of ceramic material or glass for systems with nominal voltages greater than 1 000 V*

IEC 60168:1994/AMD1:1997

IEC 60168:1994/AMD2:2000

IEC 60383-1:2023, *Insulators for overhead lines with a nominal voltage above 1 000 V – Part 1: Ceramic or glass insulator units for a.c. systems – Definitions, test methods and acceptance criteria*

IEC 60383-2:1993, *Insulators for overhead lines with a nominal voltage above 1 000 V – Part 2: Insulator strings and insulator sets for a.c. systems – Definitions, test methods and acceptance criteria*

IEC 61109:2008, *Insulators for overhead lines – Composite suspension and tension insulators for a.c. systems with a nominal voltage greater than 1 000 V – Definitions, test methods and acceptance criteria*

IEC 61462:2007, *Composite hollow insulators – Pressurized and unpressurized insulators for use in electrical equipment with rated voltage greater than 1 000 V – Definitions, test methods, acceptance criteria and design recommendations*

IEC 61952:2008, *Insulators for overhead lines – Composite line post insulators for A.C. systems with a nominal voltage greater than 1 000 V – Definitions, test methods and acceptance criteria*

IEC 62231:2006, *Composite station post insulators for substations with a.c. voltages greater than 1 000 V up to 245 kV – Definitions, test methods and acceptance criteria*

CISPR 16-1-1:2019, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 1-1: Radio disturbance and immunity measuring apparatus – Measuring apparatus*

CISPR 18-2:2017, *Radio interference characteristics of overhead power lines and high-voltage equipment – Part 2: Methods of measurement and procedure for determining limits*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

4 Measurement frequency

The reference measurement frequency is 0,5 MHz. It is recommended that measurements are made at a frequency of 0,5 MHz \pm 10 %. Alternatively, by agreement between purchaser and manufacturer, other frequencies between 0,5 MHz and 2 MHz may be used.

NOTE Although CISPR 18-2 gives the reference measurement frequency for the measurement of RI characteristics as 0,5 MHz, the existing standard practice in some countries is to use 1 MHz or 2 MHz when measuring radio interference characteristics of insulators.

The frequencies of 0,5 MHz or alternatively 1 MHz are preferred because, usually, the level of radio noise at this part of the spectrum is representative of the higher levels and also because 0,5 MHz lies between the low and medium frequency radio broadcast bands.

The RI characteristics of insulators do not normally affect television broadcasts.

5 Radio noise limits and test voltage

This document does not specify a limiting value for the radio interference characteristic of insulators or the test voltage.

When RI tests are required, the relevant values shall be found in the relevant IEC standard or shall be agreed between the purchaser and manufacturer.

NOTE Guidance for establishing limit values is given in CISPR 18-2:2017.

6 Measuring instruments

6.1 Standard CISPR measuring apparatus

Unless otherwise agreed, the standard CISPR measuring apparatus, as specified in CISPR 16-1-1, shall be used for all measurements of RI characteristics of insulators.