

High-voltage test techniques Part 1: General definitions and test requirements (IEC 42/414/CDV)

Hinweis:

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OVE Österreichischer Verband für Elektrotechnik
Eschenbachgasse 9, 1010 Wien
E-Mail: verkauf@ove.at
Internet: <http://www.ove.at>
Webshop: www.ove.at/webshop
Tel.: +43 1 587 63 73

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Erläuterungen zum Entwurf

Die von IEC TC 42 ausgearbeitete Internationale Norm wurde als Entwurf zu einer Europäischen Norm **EN IEC 60060-1** den CENELEC-Mitgliedern zur Abstimmung vorgelegt. Im Falle eines positiven Abstimmungsergebnisses im Sinne der CENELEC-Regeln wird dieser Entwurf zu einer EN führen.

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Da eine Übersetzung in die deutsche Sprache zu diesem Zeitpunkt noch nicht vorhanden ist, wird – um die von CENELEC vorgegebene Einspruchsfrist einzuhalten – die englischsprachige Fassung des IEC 42/414/CDV zur Information und Stellungnahme vorgelegt.

Interessenten können das gegenständliche Dokument beim Österreichischen Verband für Elektrotechnik beziehen bzw. in den Text Einsicht nehmen.



42/414/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

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IEC TC 42 : HIGH-VOLTAGE AND HIGH-CURRENT TEST TECHNIQUES	
SECRETARIAT: Canada	SECRETARY: Mr Howard G. Sedding
OF INTEREST TO THE FOLLOWING COMMITTEES: TC 14,TC 17,SC 17A,SC 17C,SC 18A,TC 23,TC 32,TC 36,TC 37,TC 38,TC 122	PROPOSED HORIZONTAL STANDARD: ☒ Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: ☐ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☐ SAFETY	
☒ SUBMITTED FOR CENELEC PARALLEL VOTING Attention IEC-CENELEC parallel voting The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting. The CENELEC members are invited to vote through the CENELEC online voting system.	
☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING	

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- any relevant patent rights of which they are aware and to provide supporting documentation,
- any relevant "in some countries" clauses to be included should this proposal proceed. Recipients are reminded that the enquiry stage is the final stage for submitting "in some countries" clauses. See AC/22/2007.

TITLE:

High-voltage test techniques - Part 1: General definitions and test requirements

PROPOSED STABILITY DATE: 2027

NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

HIGH-VOLTAGE TEST TECHNIQUES –

Part 1: General definitions and test requirements

FOREWORD

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International Standard IEC 60060-1 has been prepared by IEC Technical Committee 42: High-voltage and high-current test techniques.

This fourth edition of IEC 60060-1 cancels and replaces the third edition, published in 2010, and constitutes a technical revision.

The significant technical changes with respect to the previous edition are as follows:

- a) The general layout and text were updated and improved to make the standard easier to use, particularly the chapters for combined and composite test voltages.
- b) The positive tolerance of the front time of lightning impulse was extended for $U_m > 800$ kV to 100 % (= 2,4 μ s)
- c) For switching impulse voltage, a front time was introduced, similar to lightning impulse voltage and with the new front time the standard switching impulse is defined as 170/2500 μ s.
- d) The requirements for precipitations were adjusted depending on U_m .
- e) Annex C "Procedure for manual calculation from graphical waveforms" was incorporated.

- 225 f) No examples for software were given in Annex D “Guidance for implementing software for
226 evaluation of lightning impulse voltage parameters”
- 227 g) Annex about “Background to the introduction of the test voltage factor for evaluation of
228 impulses with overshoot” was deleted.
- 229 h) A new informative Annex F “New definition of the front time of switching impulse voltage”
230 was incorporated.

FDIS	Report on voting
42/xx/FDIS	42/xx/RVD

232 Full information on the voting for the approval of this document can be found in the report on
233 voting indicated in the above table.

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

236 A list of all the parts in the IEC 60060 series, under the general title *High-voltage and high-*
237 *current test techniques*, can be found on the IEC website.

238 The committee has decided that the contents of this publication will remain unchanged until the
239 stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to
240 this specific publication. At this date, the publication will be:

- 241 • reconfirmed;
- 242 • withdrawn;
- 243 • replaced by a revised edition or
- 244 • amended.

HIGH-VOLTAGE TEST TECHNIQUES –

Part 1: General definitions and test requirements

1 Scope

This part of IEC 60060 is applicable to:

- dielectric tests with direct voltage;
- dielectric tests with alternating voltage;
- dielectric tests with impulse voltage;
- dielectric tests with combinations of the above.

This part is applicable to tests on equipment having its highest voltage for equipment U_m above 1 kV AC and 1,5 kV DC.

NOTE 1 Alternative test procedures may be required to obtain reproducible and significant results. The choice of a suitable test procedure is considered by the relevant Technical Committee.

NOTE 2 For voltages U_m above 800 kV some specified procedures, tolerances and uncertainties may not be achievable.

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 60060-2, High-voltage test techniques – Part 2: Measuring systems

IEC 60270, High-voltage test techniques – Partial discharge measurements

IEC 60507, Artificial pollution tests on high-voltage insulators to be used on a.c. systems

IEC 61083-1, Instruments and software used for measurements in high-voltage and high-current tests - Part 1: Requirements for instruments for impulse tests

IEC 61083-2, Instruments and software used for measurement in high-voltage and high-current tests - Part 2: Requirements for software for tests with impulse voltages and currents

IEC 61083-3, Instruments and software used for measurement in high-voltage and high-current tests - Part 3: Requirements for software for tests with impulse voltages and currents

IEC 62475, High-current test techniques: Definitions and requirements for test currents and measuring systems

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.