

## **High voltage test techniques Part 3: Definitions and requirements for on-site tests**

High voltage test techniques Part 3: Definitions and  
requirements for on-site tests

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 60060-3:2006 sisaldab Euroopa standardi EN 60060-3:2006 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 13.04.2006 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 60060-3:2006 consists of the English text of the European standard EN 60060-3:2006.</p> <p>This document is endorsed on 13.04.2006 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b> Applicable to the following on-site test voltages and in service stresses, which are in relation to IEC 60060-1: direct voltage; alternating voltage; lightning impulse voltage of aperiodic or oscillating shape: switching impulse voltage of aperiodic or oscillating shape.</p>	<p><b>Scope:</b> Applicable to the following on-site test voltages and in service stresses, which are in relation to IEC 60060-1: direct voltage; alternating voltage; lightning impulse voltage of aperiodic or oscillating shape: switching impulse voltage of aperiodic or oscillating shape.</p>
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ICS 17.220.20, 19.080

Võtmesõnad:

**High voltage test techniques**  
**Part 3: Definitions and requirements for on-site tests**  
(IEC 60060-3:2006)

Techniques des essais à haute tension  
Partie 3: Définitions et prescriptions  
pour des essais sur site  
(CEI 60060-3:2006)

Hochspannungs-Prüftechnik  
Teil 3: Begriffe und Anforderungen  
für Vor-Ort-Prüfungen  
(IEC 60060-3:2006)

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## Foreword

The text of document 42/203/FDIS, future edition 1 of IEC 60060-3, prepared by IEC TC 42, High-voltage testing techniques, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60060-3 on 2006-02-01.

The following dates were fixed:

- latest date by which the EN has to be implemented  
at national level by publication of an identical  
national standard or by endorsement (dop) 2006-11-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2009-02-01

This European Standard makes reference to International Standards. Where the International Standard referred to has been endorsed as a European Standard or a home-grown European Standard exists, this European Standard shall be applied instead. Pertinent information can be found on the CENELEC web site.

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## Endorsement notice

The text of the International Standard IEC 60060-3:2006 was approved by CENELEC as a European Standard without any modification.

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# INTERNATIONAL STANDARD

**IEC**  
**60060-3**

First edition  
2006-02

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## High-voltage test techniques –

### Part 3: Definitions and requirements for on-site testing



Reference number  
IEC 60060-3:2006(E)

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# INTERNATIONAL STANDARD

**IEC**  
**60060-3**

First edition  
2006-02

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## High-voltage test techniques –

### Part 3: Definitions and requirements for on-site testing

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PRICE CODE

**V**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## HIGH-VOLTAGE TEST TECHNIQUES –

## Part 3: Definitions and requirements for on-site testing

## FOREWORD

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International Standard IEC 60060-3 has been prepared by IEC technical committee 42: High-voltage testing techniques.

The text of this standard is based on the following documents:

FDIS	Report on voting
42/203/FDIS	42/204/RVD

Full information on the voting for the approval of this standard 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.

Terms used throughout this standard which have been defined in Clause 3 are written in **bold type**.

IEC 60060 consists of the following parts, under the general title *High-voltage test techniques*:

Part 1: General definitions and test requirements

Part 2: Measuring systems

Part 3: Definitions and requirements for on-site testing

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

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

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

## INTRODUCTION

The requirements specified in IEC 60060-1 and IEC 60060-2 cannot always be achieved during on-site tests, due to a variety of external factors not present in factory and laboratory tests such as external electric and magnetic fields, weather conditions, etc.

On-site high-voltage tests are required:

- as withstand tests as part of a commissioning procedure on equipment to demonstrate that transport from manufacturer to site, and the erection on-site complies with manufacturer's specification;
- as withstand tests after on-site repair, to demonstrate that the equipment has been successfully repaired, and is in a suitable condition to return to service;
- for diagnostic purposes, e.g. PD measurement, to demonstrate if the insulation is still free from dangerous defects, and as an indication of life expectation.

## HIGH-VOLTAGE TEST TECHNIQUES –

### Part 3: Definitions and requirements for on-site testing

#### 1 Scope

This part of IEC 60060 is applicable to the following on-site test voltages and in service stresses, which are in relation to IEC 60060-1:

- direct voltage;
- alternating voltage;
- lightning impulse voltage of aperiodic or oscillating shape;
- switching impulse voltage of aperiodic or oscillating shape.

For special tests the following voltages are used:

- very low frequency voltage;
- damped alternating voltage.

This standard is applicable to equipment with a highest voltage  $U_m$  greater than 1 kV. The selection of on-site test voltages, test procedures and test voltage levels for apparatus, equipment or installations is under the responsibility of the relevant technical committee. For special applications, on-site test voltages different from those described in this standard may be specified by the relevant technical committee.

NOTE 1 The different voltage waveforms listed above do not necessarily provide equal stress on the test object.

NOTE 2 The selection of the test voltage levels should take the larger tolerances and measuring uncertainties into account.

#### 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 60060-1:1989, *High-voltage test techniques – Part 1: General definitions and test requirements*

IEC 60060-2:1994, *High-voltage test techniques – Part 2: Measuring systems*

IEC 60071-1:1993, *Insulation co-ordination – Part 1: Definitions, principles and rules*

#### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply. For all other definitions relating to testing procedures, see IEC 60060-1, and for those relating to measuring systems, see IEC 60060-2. Definitions of parameters are given in the relevant clauses of this standard.

##### 3.1

##### on-site test

test at the place of use of the apparatus, equipment or installation that is to be tested, and with the test object as far as possible in its service condition