ELEKTRIPAIGALDISTE KÄIT. OSA 1: ÜLDNÕUDED

Operation of electrical installations - Part 1: General requirements

EESTI STANDARDIMIS- JA AKREDITEERIMISKESKUS
ESTONIAN CENTRE FOR STANDARDISATION AND ACCREDITATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 50110-1:2023 sisaldab Euroopa standardi EN 50110-1:2023 ingliskeelset teksti.	This Estonian standard EVS-EN 50110-1:2023 consists of the English text of the European standard EN 50110-1:2023.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 23.06.2023.	Date of Availability of the European standard is 23.06.2023.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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EUROPEAN STANDARD

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English Version

Operation of electrical installations - Part 1: General requirements

Exploitation des installations électriques - Partie 1: Exigences générales

Betrieb von elektrischen Anlagen - Teil 1: Allgemeine Anforderungen

This European Standard was approved by CENELEC on 2023-05-29. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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European foreword

This document (EN 50110-1:2023) has been prepared by CLC/BTTF 62-3 “Operation of electrical installations”.

The following dates are fixed:

• latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2024-05-29
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2026-05-29

This document supersedes EN 50110-1:2013 and all of its amendments and corrigenda (if any).

EN 50110-1:2023 includes the following significant technical and editorial changes with respect to EN 50110-1:2013:

— simplification of the terms concerning the definitions of persons responsible and level of responsibility;

— improvement of terms and definitions of Clause 3;

— introduction and clarification of supervision;

— improvement of structure of Clause 5 “Operational procedures” ;

— improvement of 6.1.1 – general requirement for working procedures;

— improvement of 6.2 – dead working;

— improvement of 6.3 – live working;

— improvement of 6.4 – Working within the vicinity zone;

— improvement of 6.5 – Working outside the vicinity zone;

— Transfer of Table A.1 from informative Annex A into normative subclause 4.11.2 as Table 1;

— adjunction of Clause A.4 Ergonomic considerations;

— introduction of alphabetic list of defined terms;

— update of the normative references and of the Bibliography.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Any feedback and questions on this document should be directed to the users’ national committee. A complete listing of these bodies can be found on the CENELEC website.

Introduction

There are many national laws, standards and internal rules dealing with the matters coming within the scope of EN 50110 and these practices have been taken as a basis for this work.

EN 50110 consists of two parts:

— Part 1 of EN 50110 contains minimum requirements valid for all CENELEC countries and some additional informative annexes dealing with safe working on, with, or near electrical installations;

— Part 2 of EN 50110 consists of a set of normative annexes (one per country) which either specify the present safety requirements or give the national supplements to these minimum requirements.

This concept, following Directive 89/391/EEC, promotes the alignment of the safety levels associated with the operation of, work activity on, with, or near electrical installations in Europe. This document acknowledges the present different national requirements for safety. The intention is, over the course of time, to promote a gradual alignment in Europe of the safety levels against the electrical risk.

Even the best rules and procedures are of no value unless all persons working on, with, or near electrical installations are thoroughly conversant with them and with all legal requirements and comply strictly with them.

1 Scope

This document is applicable to all operation of and work activity on, with, or near electrical installations. These are electrical installations operating at voltage levels from and including extra-low voltage up to and including high voltage.

This latter term includes those levels commonly referred to as medium and extra-high voltage.

These electrical installations are designed for the generation, transmission, conversion, distribution and use of electrical power. Some of these electrical installations are permanent and fixed, such as a distribution installation in a factory or office complex, others are temporary, such as on construction sites and others are mobile or capable of being moved either whilst energised or whilst not energised nor charged. Examples are electrically driven excavating machines in quarries or open-cast coal sites.

This document sets out the requirements for the safe operation of and work activity on, with, or near these electrical installations. The requirements apply to all operational, working and maintenance procedures. They apply to all non-electrical work such as building work near to overhead lines or underground cables as well as electrical work, when there is a risk of electrical danger.

This document does not apply to ordinary persons when using installations and equipment, provided that the installations and equipment comply with relevant standards and are designed and installed for use by ordinary persons.

This document has not been developed specifically to apply to the electrical installations listed below. However, if there are no other rules or procedures, the principles of this document could be applied to them:

— on any aircraft and hovercraft moving under its own power, (these are subject to International Aviation laws which take precedence over national laws in these situations);

— on any sea going ship moving under its own power, or under the direction of the master, (these are subject to International Marine laws which take precedence over national laws in these situations);

— electronic telecommunications and information systems;

— electronic instrumentation, control and automation systems;

— at coal or other mines;

— on off-shore installations subject to International Marine laws;

— on vehicles;

— on electric traction systems;

— on experimental electrical research work.

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.

EN 50191, *Erection and operation of electrical test equipment*

EN 61219, *Live working - Earthing or earthing and short-circuiting equipment using lances as short-circuiting device - Lance earthing (IEC 61219)*

EN 61230, *Live working - Portable equipment for earthing or earthing and short-circuiting (IEC 61230)*

EN 61243 (all parts), *Live working – Voltage detectors (IEC 61243, all parts)*

EN 62271-1, *High-voltage switchgear and controlgear - Part 1: Common specifications for alternating current switchgear and controlgear (IEC 62271-1)*

EN IEC 62271-102, *High-voltage switchgear and controlgear - Part 102: Alternating current disconnectors and earthing switches (IEC 62271-102)*

EN IEC 62271-213, *High-voltage switchgear and controlgear - Part 213: Voltage detecting and indicating system (IEC 62271-213)*

3 Terms and definitions

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

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

3.1 General

3.1.1
electrical installation
assembly of electrical equipment which is used for the generation, transmission, conversion, distribution and use of electrical energy

Note 1 to entry: The *electrical installation* includes energy sources such as batteries, capacitors and all other sources of stored electrical energy.

Note 2 to entry: This entry was numbered 651-01-04 in IEC 60050-651:1999

[SOURCE: IEC 60050-651:2014, 651-26-01]

3.1.2
operation
combination of activities including *work activities* necessary to permit an *electrical installation* to function

Note 1 to entry: The *operation* includes such matters as switching, controlling, monitoring, verification of the *electrical installation*, inspection and maintenance as well as both electrical work and non-electrical work.

Note 2 to entry: This entry was numbered 651-01-05 in IEC 60050-651:1999. It has been modified as follows: the reference to IEC 60050-151 has been added.

[SOURCE: IEC 60050-651:2014, 651-26-02 modified, the term “verification of the electrical installation” was added in Note 1 to entry.]

3.1.3
risk
combination of the probability of occurrence of harm and the severity of that harm

Note 1 to entry: The term “harm” in this context relates to damage to either persons and/or *electrical installation*s.

[SOURCE: IEC 60050-351:2013, 351-57-03 modified, Note 1 to entry was added.]