

ELEKTRIPAIGALDISTE KÄIT. OSA 1: ÜLDNÕUDED

Operation of electrical installations - Part 1: General requirements

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>See Eesti standard EVS-EN 50110-1:2023 sisaldab Euroopa standardi EN 50110-1:2023 ingliskeelset teksti.</p> <p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 23.06.2023.</p> <p>Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.</p>	<p>This Estonian standard EVS-EN 50110-1:2023 consists of the English text of the European standard EN 50110-1:2023.</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 23.06.2023.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p>
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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.

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Contents	Page
European foreword	5
Introduction	6
1 Scope	7
2 Normative references	7
3 Terms and definitions	8
3.1 General	8
3.2 Personnel, organization and communication	9
3.3 Working zone	10
3.4 Working	11
3.5 Protective devices	12
3.6 Voltages	13
3.7 Distances	13
3.8 Symbols	15
4 Basic principles	16
4.1 Safe operation	16
4.2 Personnel	16
4.3 Organization	16
4.3.1 General	16
4.3.2 The installation manager (<i>IM</i>)	17
4.3.3 The operation controller (<i>OC</i>)	17
4.3.4 The work controller (<i>WC</i>)	17
4.3.5 The worker (<i>W</i>)	17
4.3.6 Complexity of work activity	17
4.3.7 Objections for safety	18
4.4 Communication (transmission of information)	18
4.5 Work location	18
4.6 Tools, equipment and devices	18
4.7 Drawings and records	19
4.8 Signs	19
4.9 Emergency arrangements	19
4.10 Types of supervision	20
4.11 Determination of distances	20
4.11.1 General	20
4.11.2 Limit distances	20
4.11.3 Determination of working distances	23
5 Operational procedures	23
5.1 General	23
5.2 Operating activities	23
5.3 Measurement	24
5.4 Testing	24
5.5 Inspection	25

6	Working procedures.....	26
6.1	General.....	26
6.1.1	General requirements.....	26
6.1.2	Specific requirements in case of induction.....	27
6.1.3	Specific requirements according to weather conditions.....	27
6.2	Dead working.....	27
6.2.1	General.....	27
6.2.2	Disconnect completely.....	28
6.2.3	Secure against re-connection.....	28
6.2.4	Verify absence of operating voltage.....	28
6.2.5	Earthing and short-circuiting.....	29
6.2.6	Protection against adjacent live parts.....	30
6.2.7	Permission to start work.....	30
6.2.8	Re-energizing after work.....	31
6.3	Live working.....	31
6.3.1	General.....	31
6.3.2	Training and qualification.....	32
6.3.3	Maintenance of personnel ability.....	32
6.3.4	Working methods.....	32
6.3.5	Working instructions.....	32
6.3.6	Tools, equipment and devices.....	33
6.3.7	Environmental conditions.....	33
6.3.8	Organization of work.....	33
6.3.9	Specific requirements for extra-low voltage installations.....	34
6.3.10	Specific requirements for low voltage installations.....	34
6.3.11	Specific requirements for high voltage installations.....	34
6.3.12	Specific works on live parts.....	34
6.4	Working within the vicinity zone.....	34
6.4.1	General.....	34
6.4.2	Protection by screen, barrier, enclosure or insulating covering.....	35
6.4.3	Protection by safe distance and supervision.....	35
6.5	Working outside the vicinity zone.....	36
6.5.1	General.....	36
6.5.2	Specific requirements for non-electrical work, e.g. construction work, and electrical work.....	36
7	Maintenance procedures.....	37
7.1	General.....	37
7.2	Personnel.....	37
7.3	Repair work.....	38
7.4	Replacement work.....	38
7.4.1	Replacement of fuses.....	38
7.4.2	Replacement of lamps and accessories.....	38
7.5	Temporary interruption of maintenance work.....	39
7.6	End of maintenance work.....	39
	Annex A (informative) Guidance for distances in air for working procedures.....	40
A.1	Limit distances.....	40

A.2 Working distances	40
Annex B (informative) Additional information for safe working.....	43
B.1 Example for responsibility levels	43
B.2 Example of application of live working.....	44
B.3 Atmospheric conditions that are part of environmental conditions to be assessed	44
B.4 Fire protection – Fire fighting	45
B.5 Work location presenting explosion risks.....	45
B.6 Arc hazard.....	46
B.7 Emergency arrangements	47
Annex C (informative) Terms and definitions in alphabetic order.....	48
C.1 English.....	48
C.2 French	49
C.3 German	51
Bibliography	53
Figures	
Figure 1 — Distances in air and zones.....	21
Figure 2 — Example of eliminating limit zones by the use of an insulating protective device.....	21
Figure 3 — Example of eliminating limit zones by the use of a barrier (insulating or non-insulating)	22
Figure 4 — Flowchart “Planning working procedure”.....	26
Figure B.1 — Responsibility levels	43
Tables	
Table 1 — Estimated values for distances D_L and D_V	22

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 installations*.

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