MADALPINGELISED ELEKTRIPAIGALDISED. OSA 4-42: KAITSEVIISID. KAITSE KUUMUSTOIME EEST

Low voltage electrical installations - Part 4-42: Protection for safety - Protection against thermal effects (IEC 60364-4-42:2010, modified + IEC 60364-4-42:2010/A1:2014)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-HD 60364-4-42:2011 +A1+A11:2021 sisaldab Euroopa standardi HD 60364-4-42:2011 ja selle muudatuste A1:2015 ja A11:2021 ingliskeelset teksti.	This Estonian standard EVS-HD 60364-4-42:2011 +A1+A11:2021 consists of the English text of the European standard HD 60364-4-42:2011 and its amendments A1:2015 and A11:2021.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas. Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 18.03.2011, muudatused A1 09.01.2015 ja A11 17.12.2021.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation. Date of Availability of the European standard is 18.03.2011, for A1 09.01.2015 and A11 17.12.2021.
Muudatusega A1 lisatud või muudetud teksti algus ja lõpp on tekstis tähistatud sümbolitega [A1] ⟨A1⟩. Muudatusega A11 lisatud või muudetud teksti algus ja lõpp on tekstis tähistatud sümbolitega [A11] ⟨A11⟩. Selles standardis on rahvusvahelise standardi ühismuudatused tähistatud püstkriipsuga teksti vasakul veerisel. Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The start and finish of text introduced or altered by amendment A1 is indicated in the text by tags [A1] ⟨A1⟩. The start and finish of text introduced or altered by amendment A11 is indicated in the text by tags [A11] ⟨A11⟩. In this document, the common modifications to the International Standard are indicated by a vertical line in the left margin of the text. 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.

ICS 29.120.50; 91.140.50

HARMONIZATION DOCUMENT

DOCUMENT D'HARMONISATION

HARMONISIERUNGSDOKUMENT

HD 60364-4-42 + A1 + A11

March 2011, January 2015, December 2021

ICS 29.120.50; 91.140.50

Supersedes HD 384.4.42 S1:1985 + A1:1992 + A2:1994

English Version

Low voltage electrical installations - Part 4-42: Protection for safety - Protection against thermal effects (IEC 60364-4-42:2010, modified + IEC 60364-4-42:2010/A1:2014)

Installations électriques basse tension - Partie 4-42: Protection pour assurer la sécurité - Protection contre les effets thermiques (IEC 60364-4-42:2010, modified + IEC 60364-4-42:2010/A1:2014)

Errichten von Niederspannungsanlagen - Teil 4-42: Schutzmaßnahmen - Schutz gegen thermische Einflüsse (IEC 60364-4-42:2010, modified + IEC 60364-4-42:2010/A1:2014)

This Harmonization Document was approved by CENELEC on 2011-02-14. Amendment A1 was approved by CENELEC on 2014-12-18. Amendment A11 was approved by CENELEC on 2021-07-13. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for implementation of this Harmonization Document and its amendments at national level.

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

This Harmonization Document and its Amendments A1 and A11 exist in three official versions (English, French, German).

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, Turkey and the United Kingdom.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. HD 60364-4-42:2011 + E
HD 60364-4-42:2011/A1:2015 E + HD 60364-4-42:2011/A11:2021 E

Foreword

The text of the International Standard IEC 60364-4-42:2010, prepared by IEC TC 64, Electrical installations and protection against electric shock, together with common modifications prepared by the Technical Committee CENELEC TC 64, Electrical installations and protection against electric shock, was submitted to the formal vote and was approved by CENELEC as HD 60364-4-42 on 2011-02-14.

– This European Standard supersedes HD 384.4.42 S1:1985 + A1:1992 + A2:1994.

The main changes with respect to HD 384.4.42 S1:1985 + A1:1992 + A2:1994 are listed below:

– The scope now includes protection against all thermal effects and flames in case of a fire hazard being propagated from electrical installations to other fire compartments segregated by barriers which are in the vicinity.

– Requirements associated with escape routes for evacuation in an emergency have been expanded/modified.

– Requirements associated with the nature of processed or stored materials have been expanded/modified.

– Requirements associated with combustible constructional materials have been expanded/modified.

– Requirements associated with fire propagating structures have been modified slightly.

– New requirements for the selection and erection of installations in locations which might endanger precious goods have been added.

– Protection against overheating now includes space heating appliances.

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

The following dates were fixed:

– latest date by which the HD has to be implemented at national level by publication of a harmonized national standard or by endorsement	(dop)	2012-02-14
– latest date by which the national standards conflicting with the HD have to be withdrawn	(dow)	2014-02-14

Annexes ZA to ZD have been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 60364-4-42:2010 was approved by CENELEC as a Harmonization Document with agreed common modifications.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

[2] IEC 60079-14:1996	NOTE	Harmonized as EN 60079-14:1997 (not modified).
[5] IEC 60332-1-2:2004	NOTE	Harmonized as EN 60332-1-2:2004 (not modified).
[6] IEC 60332-3-21:2000	NOTE	Harmonized as EN 60332-3-21:2009 (modified).
[7] IEC 60332-3-22:2000	NOTE	Harmonized as EN 60332-3-22:2009 (not modified).
[8] IEC 60332-3-23:2000	NOTE	Harmonized as EN 60332-3-23:2009 (not modified).
[9] IEC 60332-3-24:2000	NOTE	Harmonized as EN 60332-3-24 (not modified).
[10] IEC 60332-3-25:2000	NOTE	Harmonized as EN 60332-3-25:2009 (not modified).
[11] IEC 60364-4-43	NOTE	Harmonized as HD 60364-4-43.
[13] IEC 60364-5-52	NOTE	Harmonized as HD 60364-5-52.
[16] IEC 60598 series	NOTE	Harmonized in EN 60598 series (partially modified).
[17] IEC 60598-1:2003	NOTE	Harmonized as EN 60598-1:2004 (modified).
[18] IEC 60598-1:2008	NOTE	Harmonized as EN 60598-1:2008 (modified).
[19] IEC 60670-1	NOTE	Harmonized as EN 60670-1.
[20] IEC 60695-4	NOTE	Harmonized as EN 60695-4.
[21] IEC 60702-1	NOTE	Harmonized as EN 60702-1.
[22] IEC 60947-2	NOTE	Harmonized as EN 60947-2.
[23] IEC 61034-2	NOTE	Harmonized as EN 61034-2.
[25] IEC 61386-1	NOTE	Harmonized as EN 61386-1.
[26] IEC 61439-1	NOTE	Harmonized as EN 61439-1.
[27] IEC 62020	NOTE	Harmonized as EN 62020.
[28] IEC 62305 series	NOTE	Harmonized in EN 62305 series (partially modified).

A1 Amendment A1 foreword

The text of document 64/1974/FDIS, future IEC 60364-4-42:2010/A1, prepared by IEC/TC 64 "Electrical installations and protection against electric shock" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as HD 60364-4-42:2011/A1:2015.

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) 2015-09-18
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2017-12-18

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

Endorsement notice

The text of the International Standard IEC 60364-4-42:2010/A1:2014 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

ISO 1182	NOTE	Harmonized as EN ISO 1182.
ISO 1716	NOTE	Harmonized as EN ISO 1716.
IEC 60898-1	NOTE	Harmonized as EN 60898-1.
IEC 61009-1	NOTE	Harmonized as EN 61009-1.
IEC 60269	NOTE	Harmonized in EN/HD 60269 series (modified).
IEC 61008-1	NOTE	Harmonized as EN 61008-1.
IEC 62423	NOTE	Harmonized as EN 62423.

A1

A11 Amendment A11 European foreword

This document (HD 60364-4-42:2011/A11:2021) has been prepared by CLC/TC 64 “Electrical installations and protection against electric shock”.

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)	2022-06-17
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2024-12-17

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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. A11

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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LOW-VOLTAGE ELECTRICAL INSTALLATIONS –

Part 4-42: Protection for safety – Protection against thermal effects

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 60364-4-42 has been prepared by IEC technical committee 64: Electrical installations and protection against electric shock.

This third edition cancels and replaces the second edition, published in 2001, and constitutes a technical revision.

The main changes with respect to the previous edition are listed below:

– The scope now includes protection against all thermal effects and flames in case of a fire hazard being propagated from electrical installations to other fire compartments segregated by barriers which are in the vicinity.
– Requirements associated with escape routes for evacuation in an emergency have been expanded/modified.
– Requirements associated with the nature of processed or stored materials have been expanded/modified.

– Requirements associated with combustible constructional materials have been expanded/modified.
– Requirements associated with fire propagating structures have been modified slightly.
– New requirements for the selection and erection of installations in locations which might endanger precious goods have been added.
– Protection against overheating now includes space heating appliances.

〈A11〉

– For cables, the provisions of the Construction Products Regulation ((EU) No. 305/2011 (CPR)) came fully into force on 1st July 2017 in respect of Reaction to Fire. These requirements are now expressed by reference to the relevant class according to EN 13501-6.

NOTE See also Note 3 in the Scope. 〈A11〉

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

FDIS	Report on voting
64/1725/FDIS	64/1729/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.

The reader's attention is drawn to the fact that Annex A lists all of the "in-some-country" clauses on differing practices of a less permanent nature relating to the subject of this standard.

A list of all parts in the IEC 60364 series, under the general title *Low-voltage electrical installations*, can be found on the IEC website.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated at the time of the next edition.

The committee has decided that the contents of this publication will remain unchanged until the stability 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.

AMENDMENT A1 FOREWORD

This amendment has been prepared by IEC technical committee 64: Electrical installations and protection against electric shock.

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

FDIS	Report on voting
64/1974/FDIS	64/1982/RVD

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

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the stability 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.

LOW-VOLTAGE ELECTRICAL INSTALLATIONS –

Part 4-42: Protection for safety – Protection against thermal effects

420.1 Scope

This part of IEC 60364 applies to electrical installations with regard to measures for the protection of persons, livestock and property against

– thermal effects, combustion or degradation of materials, and risk of burns caused by electrical equipment,

– flames in case of a fire hazard being propagated from electrical installations to other fire compartments segregated by barriers which are in the vicinity, and

– the impairment of the safe functioning of electrical equipment including safety services.

NOTE 1 For protection against thermal effects, national statutory requirements may be applicable.

NOTE 2 Protection against overcurrent is dealt with in IEC 60364-4-43.

〈A11〉 In respect of cables and their reaction to fire, these protective measures can be expressed by reference to the Construction Products Regulation (CPR), and the relevant classes according to EN 13501-6.

NOTE 3 Whilst the CPR requires the manufacturer to declare the reaction to fire performance of the cable in accordance with procedures and classifications that are common across the EU, it is the responsibility of the Member State to determine which classification is required for any particular application or installation. National statutory requirements could therefore override the levels quoted here. 〈A11〉

420.2 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 60332 (all parts), *Tests on electric and optical fibre cables under fire conditions*

IEC 60364-4-41:2005, *Low-voltage electrical installations – Part 4-41: Protection for safety – Protection against electric shock*

IEC 60364-5-51:2005, *Electrical installations of buildings – Part 5-51: Selection and erection of electrical equipment – Common rules*

IEC 61084 (all parts), *Cable trunking and ducting systems for electrical installations*

IEC 61386 (all parts), *Conduit systems for cable management*

IEC 61534 (all parts), *Power track systems*

IEC 61537, *Cable management – Cable tray systems and cable ladder systems*

IEC 60598-2-24, *Luminaires – Part 2-24: Particular requirements – Luminaires with limited surface temperatures*

〈A1〉 IEC 62606, *General requirements for arc fault detection devices* 〈A1〉

〈A11〉 EN 13501-6, *Fire classification of construction products and building elements - Part 6: Classification using data from reaction to fire tests on power, control and communication cables*

EN 60670-1, *Boxes and enclosures for electrical accessories for household and similar fixed electrical installations - Part 1: General requirements (IEC 60670-1)* 〈A11〉

420.3 Terms and definitions

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

420.3.1
combustible
capable of burning

420.3.2
fire
– a process of combustion characterized by the emission of heat and effluent accompanied by smoke, and/or flame and/or glowing
– rapid combustion spreading uncontrolled in time and space

420.3.3
flammability
ability of a material or product to burn with a flame under specified test conditions

420.3.4
ignitability
measure of the ease with which a specimen can be ignited due to the influence of an external source, under specified test conditions

420.3.5
ignition
initiation of combustion

NOTE For more information see IEC 60695-4.

420.3.6
non-flame propagating component
component which is liable to ignite, as a result of an applied flame, but in which the flame does not propagate and which extinguishes itself within a limited time after the flame is removed

[IEC 60050-442:1998, 442-01-12]

421 Protection against fire caused by electrical equipment

421.1 General requirements

Persons, livestock and property shall be protected against damage or injury caused by heat or fire which may be generated or propagated in electrical installations by taking into account the requirements of this standard and the instructions of equipment manufacturers.

The heat generated by electrical equipment shall not cause danger or harmful effects to adjacent fixed material or to material which may foreseeably be in proximity to such equipment. Electrical equipment shall not present a fire hazard to adjacent materials.