MADALPINGELISED ELEKTRIPAIGALDISED. OSA 5-52: ELEKTRISEADMETE VALIK JA PAIGALDAMINE. JUHISTIKUD

Low-voltage electrical installations - Part 5-52: Selection and erection of electrical equipment - Wiring systems (IEC 60364-5-52:2009, modified + corrigendum Feb. 2011)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-HD 60364-5-52:2011+A11 +A12:2023 sisaldab Euroopa standardi HD 60364-5-52:2011 ja selle muudatuste A11:2017 ja A12:2023 ingliskeelset teksti.	This Estonian standard EVS-HD 60364-5-52:2011+A11+A12:2023 consists of the English text of the European standard HD 60364-5-52:2011 and its amendments A11:2017 and A12:2023.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas. Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 25.02.2011, muudatused A11 01.12.2017 ja A12 25.11.2022.	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 25.02.2011, for A11 01.12.2017 and A12 25.11.2022.
Muudatusega A11 lisatud või muudetud teksti algus ja lõpp on tekstis tähistatud sümbolitega [A11⟩ ⟨A11]. Muudatusega A12 lisatud või muudetud teksti algus ja lõpp on tekstis tähistatud sümbolitega [A12⟩ ⟨A12]. 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 A11 is indicated in the text by tags [A11⟩ ⟨A11]. The start and finish of text introduced or altered by amendment A12 is indicated in the text by tags [A12⟩ ⟨A12]. 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 13.260; 91.140.50

HARMONIZATION DOCUMENT

DOCUMENT D'HARMONISATION

HARMONISIERUNGSDOKUMENT

HD 60364-5-52 + A11 + A12

February 2011, December 2017, November 2022

ICS 13.260; 91.140.50

Supersedes HD 384.5.52 S1:1995 + A1:1998 + corr. Sep.1998, HD 384.5.523 S2:2001

English Version

Low-voltage electrical installations - Part 5-52: Selection and erection of electrical equipment - Wiring systems (IEC 60364-5-52:2009, modified + corrigendum Feb. 2011)

Installations électriques à basse-tension - Partie 5-52: Choix et mise en oeuvre des matériels électriques – Canalisations (CEI 60364-5-52:2009, modifiée + corrigendum Feb. 2011

Errichten von Niederspannungsanlagen - Teil 5-52: Auswahl und Errichtung elektrischer Betriebsmittel - Kabel- und Leitungsanlagen (IEC 60364-5-52:2009, modifiziert + corrigendum Feb. 2011)

This Harmonization Document was approved by CENELEC on 2011-01-24. Amendment A11 was approved by CENELEC on 2017-10-18. Amendment A12 was approved by CENELEC on 2022-07-18. 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 A11 and A12 exist in three official versions (English, French, German).

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

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

Ref. No. HD 60364-5-52:2011 E + HD 60364-5-52:2011/A11:2017 E
+ HD 60364-5-52:2011/A12:2022 E

Foreword

The text of the International Standard IEC 60364-5-52:2009, 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 60364-5-52 on 2011-01-24.

This European Standard supersedes HD 384.5.52 S1:1995 + A1:1998 and HD 384.5.523 S2:2001.

The main changes with respect to HD 384.5.52 S1:1995 + A1:1998 are as follows:

– Subclause 521.4 introduces minor changes with regard to busbar trunking systems and powertrack systems.

– Subclause 523.6 introduces minor changes with regard to the sizing of cables where harmonic currents are present.

– A new sublause 523.9 concerning single-core cables with a metallic covering has been introduced.

– Clause 525 introduces changes in the maximum value of voltage drop permitted between the origin of the consumer's installation and the equipment which should not be greater than that given in the relevant annex.

– Clause 526 introduces minor changes to electrical connections including additional exceptions for inspection of connections and additional notes.

– Clause 528 introduces additional requirements with regard to proximity of underground power and telecommunication cables.

– Clause 529 introduces minor changes to selection and erection of wiring systems in relation to maintainability, including cleaning.

〚A12〉 The main changes with respect to the previous edition are listed below:

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

NOTE The CPR harmonises the methods of assessment and test, the means of declaration of product performance and the system of conformity assessment of construction products, but NOT national building regulations. The choice of required classes for the particular intended use is left to the regulators and public / private sector procurers at the national level. However, it is essential that such required classes are expressed in a consistent manner (technical language) as used in the harmonized technical specifications. 〈A12〛

The following dates were fixed:

– latest date by which the existence of the HD has to be announced at national level	(doa)	2011-07-24
– latest date by which the HD has to be implemented at national level by publication of a harmonized national standard or by endorsement	(dop)	2012-01-24
– latest date by which the national standards conflicting with the HD have to be withdrawn	(dow)	2014-01-24

Endorsement notice

The text of the International Standard IEC 60364-5-52:2009 was approved by CENELEC as a Harmonization Document with agreed common modifications as given below.

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

IEC 60332-3 series	NOTE Harmonized in EN 60332-3 series (partially modified).
IEC 60332-3-24	NOTE Harmonized as EN 60332-3-24.
IEC 60364-4-43:2008	NOTE Harmonized as HD 60364-4-43:2010 (modified).
IEC 60364-5-51:2005	NOTE Harmonized as HD 60364-5-51:2009 (modified).
IEC 60364-7-715	NOTE Harmonized as HD 60364-7-715.
IEC 61000 series	NOTE Harmonized in EN 61000 series (partially modified).
IEC 61386-24	NOTE Harmonized as EN 61386-24.
IEC 61535	NOTE Harmonized as EN 61535.
IEC 62305 series	NOTE Harmonized in EN 62305 series (partially modified).

A11 Amendment A11 European foreword

This document (HD 60364-5-52:2011/A11:2017) 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)	2018-10-18
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2020-10-18

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. A11

A12 Amendment A12 European foreword

This document (HD 60364-5-52:2011/A12:2022) 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)	2023-05-25
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2025-11-25

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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. A12

IEC 60364-5-52

Edition 3.0 2009-10

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Low-voltage electrical installations –
Part 5-52: Selection and erection of electrical equipment – Wiring systems

Installations électriques à basse tension –
Partie 5-52: Choix et mise en œuvre des matériels électriques – Canalisations

IEC 60364-5-52:2009

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The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

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La Commission Electrotechnique Internationale (CEI) est la première organisation mondiale qui élabore et publie des normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

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IEC 60364-5-52

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Low-voltage electrical installations –
Part 5-52: Selection and erection of electrical equipment – Wiring systems

Installations électriques à basse tension –
Partie 5-52: Choix et mise en œuvre des matériels électriques – Canalisations

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CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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LOW-VOLTAGE ELECTRICAL INSTALLATIONS –

Part 5-52: Selection and erection of electrical equipment – Wiring systems

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 60364-5-52 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 as follows:

- Subclause 521.4 introduces minor changes with regard to busbar trunking systems and powertrack systems.
- Subclause 523.6 introduces minor changes with regard to the sizing of cables where harmonic currents are present.
- A new sublause 523.9 concerning single-core cables with a metallic covering has been introduced.

- Clause 525 introduces changes in the maximum value of voltage drop permitted between the origin of the consumer's installation and the equipment which should not be greater than that given in the relevant annex.
- Clause 526 introduces minor changes to electrical connections including additional exceptions for inspection of connections and additional notes.
- Clause 528 introduces additional requirements with regard to proximity of underground power and telecommunication cables.
- Clause 529 introduces minor changes to selection and erection of wiring systems in relation to maintainability, including cleaning.

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

FDIS	Report on voting
64/1685/FDIS	64/1705/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 I 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 the parts in the IEC 602364 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 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.

The contents of the corrigendum of February 2011 have been included in this copy.

LOW-VOLTAGE ELECTRICAL INSTALLATIONS –

Part 5-52: Selection and erection of electrical equipment – Wiring systems

520 Introduction

520.1 Scope

Part 5-52 of IEC 60364 deals with the selection and erection of wiring systems.

NOTE 1 This standard also applies in general to protective conductors, while IEC 60364-5-54 contains further requirements for those conductors.

NOTE 2 Guidance on Part 5-52 of IEC 60364 is given in IEC 61200-52.

〈A12〉 Requirements for the selection of cables with respect to the classification provided in EN 13501-1 on reaction to fire in order to comply with the Construction Products Regulation (CPR) of the EU are also provided.

NOTE 3 Whilst the CPR requires the manufacturer to declare the reaction to fire performance of the cable in accordance with procedures and classification that are common across the EU, it is the responsibility of the Member State to determine which class according to EN 13501-6 is required for any particular application or installation. National statutory requirements could therefore override the classes required by this publication. 〈A12〉

520.2 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 60228, *Conductors of insulated cables*

IEC 60287 (all parts), *Electric cables – Calculation of the current rating*

IEC 60287-2-1, *Electric cables – Calculation of the current rating – Part 2-1: Thermal resistance –Calculation of thermal resistance*[1]

IEC 60287-3-1, *Electric cables – Calculation of the current rating – Part 3-1: Sections on operating conditions – Reference operating conditions and selection of cable type*[2]

IEC 60332-1-1, *Tests on electric and optical fibre cables under fire conditions – Part 1-1: Test for vertical flame propagation for a single insulated wire or cable – Apparatus*

IEC 60332-1-2, *Tests on electric and optical fibre cables under fire conditions – Part 1-2: Test for vertical flame propagation for a single insulated wire or cable – Procedure for 1 kW pre-mixed flame*

IEC 60364-1:2005, *Low-voltage electrical installations – Part 1: Fundamental principles, assessment of general characteristics, definitions*

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1 A consolidated edition 1.2 exists (2006) that includes IEC 60287-2-1 (1994) and its amendments 1 and 2 (1999 and 2006).

2 A consolidated edition 1.1 exists (1999) that includes IEC 60287-3-1 (1995) and its amendment 1 (1999).

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

IEC 60364-4-42, *Electrical installations of buildings – Part 4-42: Protection for safety – Protection against thermal effects*

IEC 60364-5-54, *Electrical installations of buildings – Part 5-54: Selection and erection of electrical equipment – Earthing arrangements, protective conductors and protective bonding conductors*

IEC 60439-2, *Low-voltage switchgear and controlgear assemblies – Part 2: Particular requirements for busbar trunking systems (busways)*[3]

IEC 60449, *Voltage bands for electrical installations of buildings*

IEC 60502 (all parts), *Power cables with extruded insulation and their accessories for rated voltages from 1 kV (U_m = 1,2 kV) up to 30 kV (U_m = 36 kV)*

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*[4]

IEC 60570, *Electrical supply track systems for luminaires*

IEC 60702 (all parts), *Mineral insulated cables and their terminations with a rated voltage not exceeding 750 V*

IEC 60947-7 (all parts 7), *Low-voltage switchgear and controlgear – Part 7: Ancillary equipment*

IEC 60998 (all parts), *Connecting devices for low-voltage circuits for household and similar purposes*

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), *Powertrack systems*

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

ISO 834 (all parts), *Fire-resistance tests – Elements of building construction*

▌A12⟩ EN 13501-6, *Fire classification of construction products and building elements - Part 6: Classification using data from reaction to fire tests on electric cables* ⟨A12▐

520.3 Terms and definitions

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

520.3.1
wiring system
assembly made up of bare or insulated conductors or cables or busbars and the parts which secure and if necessary enclose the cables or busbars

3 A consolidated edition 3.1 exists (2005) that includes IEC 60439-2 (1995) and its amendment 1 (2005).

4 A consolidated edition 2.1 exists (2001) that includes IEC 60529 (1989) and its amendment 1 (1999).