

**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 + IEC 60364-5-52:2009/AMD1:2024)

EESTI STANDARDI EESSÕNA**NATIONAL FOREWORD**

<p>See Eesti standard EVS-HD 60364-5-52:2011+A11+A12+A1:2025 sisaldab Euroopa standardi HD 60364-5-52:2011 ja selle muudatuste A11:2017, A12:2023 ja A1:2025 ingliskeelset teksti.</p>	<p>This Estonian standard EVS-HD 60364-5-52:2011+A11+A12+A1:2025 consists of the English text of the European standard HD 60364-5-52:2011 and its amendments A11:2017, A12:2023 and A1:2025.</p>
<p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 25.02.2011, muudatused A11 01.12.2017, A12 25.11.2022 ja A1 03.01.2025.</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 25.02.2011, for A11 01.12.2017, A12 25.11.2022 and A1 03.01.2025.</p>
<p>Muudatusega A11 lisatud või muudetud teksti algus ja lõpp on tekstis tähistatud sümbolitega A11 A11.</p> <p>Muudatusega A12 lisatud või muudetud teksti algus ja lõpp on tekstis tähistatud sümbolitega A12 A12.</p> <p>Muudatusega A1 lisatud või muudetud teksti algus ja lõpp on tekstis tähistatud sümbolitega A1 A1.</p> <p>Selles standardis on rahvusvahelise standardi ühismuudatused tähistatud püstkriipsuga teksti vasakul veerisel.</p> <p>Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.</p>	<p>The start and finish of text introduced or altered by amendment A11 is indicated in the text by tags A11 A11.</p> <p>The start and finish of text introduced or altered by amendment A12 is indicated in the text by tags A12 A12.</p> <p>The start and finish of text introduced or altered by amendment A1 is indicated in the text by tags A1 A1.</p> <p>In this document, the common modifications to the International Standard are indicated by a vertical line in the left margin of the text.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p>

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

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardimis- ja Akrediteerimiskeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardimis- ja Akrediteerimiskeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autoriõiguse kaitse kohta, võtke palun ühendust Eesti Standardimis- ja Akrediteerimiskeskusega: Koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation and Accreditation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation and Accreditation.

If you have any questions about standards copyright protection, please contact the Estonian Centre for Standardisation and Accreditation:

Homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

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 + IEC
60364-5-52:2009/AMD1:2024)**

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 + IEC 60364-5-
52:2009/AMD1:2024)

Errichten von Niederspannungsanlagen - Teil 5-52:
Auswahl und Errichtung elektrischer Betriebsmittel - Kabel-
und Leitungsanlagen (IEC 60364-5-52:2009, modifiziert +
corrigendum Feb. 2011 + IEC 60364-5-
52:2009/AMD1:2024)

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. Amendment A1 was approved by CENELEC on 2024-12-27. 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, A12 and A1 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, Türkiye 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 Sciences 23, B-1040 Brussels

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 subclause 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

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. **A12**

A1 Amendment A1 European foreword

The text of document 64/2675/FDIS, future edition 3 of IEC 60364-5-52/AMD1, prepared by TC 64 "Electrical installations and protection against electric shock" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as HD 60364-5-52:2011/A1:2025.

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) 2026-01-31
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2028-01-31

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.

Endorsement notice

The text of the International Standard IEC 60364-5-52:2009/AMD1:2024 was approved by CENELEC as a European Standard without any modification. **A1**



IEC 60364-5-52

Edition 3.1 2024-11
CONSOLIDATED VERSION

INTERNATIONAL STANDARD



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



THIS PUBLICATION IS COPYRIGHT PROTECTED
Copyright © 2024 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

IEC Secretariat
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

About the IEC

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

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

IEC publications search - webstore.iec.ch/advsearchform

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee, ...). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

IEC Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: sales@iec.ch.

IEC Products & Services Portal - products.iec.ch

Discover our powerful search engine and read freely all the publications previews, graphical symbols and the glossary. With a subscription you will always have access to up to date content tailored to your needs.

Electropedia - www.electropedia.org

The world's leading online dictionary on electrotechnology, containing more than 22 500 terminological entries in English and French, with equivalent terms in 25 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

preview generated by EVS



IEC 60364-5-52

Edition 3.1 2024-11
CONSOLIDATED VERSION

INTERNATIONAL STANDARD



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

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 13.260, 91.140.50

ISBN 978-2-8327-0055-6

Warning! Make sure that you obtained this publication from an authorized distributor.

CONTENTS

FOREWORD.....	6
▣ _{A1} Amendment A1 FOREWORD ▣ _{A1}	8
520 Introduction.....	10
520.1 Scope	10
520.2 Normative references	10
520.3 Terms and definitions	11
520.4 General.....	12
521 Types of wiring system.....	12
521.4 Busbar trunking systems and powertrack systems	12
521.5 AC circuits – Electromagnetic effects (prevention of eddy current)	12
521.6 Conduit systems, cable ducting systems, cable trunking systems, cable tray systems and cable ladder systems	13
521.7 Several circuits in one cable	13
521.8 Circuit arrangements	13
521.9 Use of flexible cables or cords	13
521.10 Installation of cables.....	13
522 Selection and erection of wiring systems in relation to external influences.....	14
522.1 Ambient temperature (AA)	14
522.2 External heat sources.....	14
522.3 Presence of water (AD) or high humidity (AB).....	14
522.4 Presence of solid foreign bodies (AE)	15
522.5 Presence of corrosive or polluting substances (AF)	15
522.6 Impact (AG).....	15
522.7 Vibration (AH)	15
522.8 Other mechanical stresses (AJ)	16
522.9 Presence of flora and/or mould growth (AK)	17
522.10 Presence of fauna (AL).....	17
522.11 Solar radiation (AN) and ultraviolet radiation	17
522.12 Seismic effects (AP)	17
522.13 Wind (AR)	18
522.14 Nature of processed or stored materials (BE)	18
522.15 Building design (CB).....	18
523 Current-carrying capacities	18
523.5 Groups containing more than one circuit	19
523.6 Number of loaded conductors	19
523.7 Conductors in parallel.....	20
523.8 Variation of installation conditions along a route.....	20
523.9 Single-core cables with a metallic covering	20
524 Cross-sectional areas of conductors.....	20
524.2 Cross-sectional area of the neutral conductor.....	21
▣ _{A1} 524.3 Cross-sectional area of live conductors with triplen harmonics ▣ _{A1}	21
525 Voltage drop in consumers' installations	22
526 Electrical connections	22
526.8 Connection of multi wire, fine wire and very fine wire conductors	23
527 Selection and erection of wiring systems to minimize the spread of fire	23

527.1	Precautions within a fire-segregated compartment	23
527.2	Sealing of wiring system penetrations	24
528	Proximity of wiring systems to other services	25
528.1	Proximity to electrical services	25
528.2	Proximity of communications cables	25
528.3	Proximity to non-electrical services	25
529	Selection and erection of wiring systems in relation to maintainability, including cleaning	26
Annex A (normative)	Methods of installations	27
Annex B (informative)	Current-carrying capacities	35
Annex C (informative)	Example of a method of simplification of the tables of Clause 523	64
Annex D	<i>deleted text</i>	68
Annex E (normative)	Effect of harmonic currents on balanced three-phase systems	69
Annex F (informative)	Selection of conduit systems	73
Annex G (informative)	Voltage drop in consumers' installations	74
Annex H (informative)	Examples of configurations of parallel cables	76
Annex I (informative)	List of notes concerning certain countries	79
Annex ZA (normative)	Normative references to international publications with their corresponding European publications	84
Annex ZB (normative)	Special national conditions	87
Annex ZC (informative)	A-deviations	110
Bibliography	115
Figure H.52.1	– Special configuration for 6 parallel single-core cables in a flat plane (see 523.7)	76
Figure H.52.2	– Special configuration for 6 parallel single-core cables above each other (see 523.7)	76
Figure H.52.3	– Special configuration for 6 parallel single-core cables in trefoil (see 523.7)	77
Figure H.52.4	– Special configuration for 9 parallel single-core cables in a flat plane (see 523.7)	77
Figure H.52.5	– Special configuration for 9 parallel single-core cables above each other (see 523.7)	77
Figure H.52.6	– Special configuration for 9 parallel single-core cables in trefoil (see 523.7)	78
Figure H.52.7	– Special configuration for 12 parallel single-core cables in a flat plane (see 523.7)	78
Figure H.52.8	– Special configuration for 12 parallel single-core cables above each other (see 523.7)	78
Figure H.52.9	– Special configuration for 12 parallel single-core cables in trefoil (see 523.7)	78
Table 52.1	– Maximum operating temperatures for types of insulation	18
Table 52.2	– Minimum cross-sectional area of conductors	21
Table A.52.1	– Methods of installation in relation to conductors and cables	27

Table A.52.3 – Examples of methods of installation providing instructions for obtaining current-carrying capacity.....	28
Table B.52.1 – Installation reference methods forming basis of tabulated current-carrying capacities.....	40
Table B.52.2 – Current-carrying capacities in amperes for methods of installation in Table B.52.1 – PVC insulation/two loaded conductors, copper or aluminium – Conductor temperature: 70 °C, ambient temperature: 30 °C in air, 20 °C in ground	42
Table B.52.3 – Current-carrying capacities in amperes for methods of installation in Table B.52.1 – XLPE or EPR insulation, two loaded conductors/copper or aluminium – Conductor temperature: 90 °C, ambient temperature: 30 °C in air, 20 °C in ground	43
Table B.52.4 – Current-carrying capacities in amperes for methods of installation in Table B.52.1 – PVC insulation, three loaded conductors/copper or aluminium – Conductor temperature: 70 °C, ambient temperature: 30 °C in air, 20 °C in ground	44
Table B.52.5 – Current-carrying capacities in amperes for methods of installation in Table B.52.1 – XLPE or EPR insulation, three loaded conductors/copper or aluminium – Conductor temperature: 90 °C, ambient temperature: 30 °C in air, 20 °C in ground.....	45
Table B.52.6 – Current-carrying capacities in amperes for installation method C of Table B.52.1 – Mineral insulation, copper conductors and sheath – PVC covered or bare exposed to touch (see note 2) – Metallic sheath temperature: 70 °C, reference ambient temperature: 30 °C	46
Table B.52.7 – Current-carrying capacities in amperes for installation method C of Table B.52.1 – Mineral insulation, copper conductors and sheath – Bare cable not exposed to touch and not in contact with combustible material Metallic sheath temperature: 105 °C, reference ambient temperature: 30 °C	47
Table B.52.8 – Current-carrying capacities in amperes for installation methods E, F and G of Table B.52.1 – Mineral insulation, copper conductors and sheath/PVC covered or bare exposed to touch (see note 2) – Metallic sheath temperature: 70 °C, reference ambient temperature: 30 °C.....	48
Table B.52.9 – Current-carrying capacities in amperes for installation methods E, F and G of Table B.52.1 – Mineral insulation, copper conductors and sheath – Bare cable not exposed to touch (see note 2) – Metallic sheath temperature: 105 °C, reference ambient temperature: 30 °C.....	49
Table B.52.10 – Current-carrying capacities in amperes for installation methods E, F and G of Table B.52.1 – PVC insulation, copper conductors – Conductor temperature: 70 °C, reference ambient temperature: 30 °C	50
Table B.52.11 – Current-carrying capacities in amperes for installation methods E, F and G of Table B.52.1 – PVC insulation, aluminium conductors – Conductor temperature: 70 °C, reference ambient temperature: 30 °C	51
Table B.52.12 – Current-carrying capacities in amperes for installation methods E, F and G of Table B.52.1 – XLPE or EPR insulation, copper conductors – Conductor temperature: 90 °C, reference ambient temperature: 30 °C	52
Table B.52.13 – Current-carrying capacities in amperes for installation methods E, F and G of Table B.52.1 – XLPE or EPR insulation. aluminium conductors – Conductor temperature: 90 °C, reference ambient temperature: 30 °C	53
Table B.52.14 – Correction factor for ambient air temperatures other than 30 °C to be applied to the current-carrying capacities for cables in the air	54
Table B.52.15 – Correction factors for ambient ground temperatures other than 20 °C to be applied to the current-carrying capacities for cables in ducts in the ground	55
Table B.52.16 – Correction factors for cables buried direct in the ground or in buried ducts for soil thermal resistivities other than 2,5 K · m/W to be applied to the current-carrying capacities for reference method D.....	55
Table B.52.17 – Reduction factors for one circuit or one multi-core cable or for a group of more than one circuit, or more than one multi-core cable, to be used with current-carrying capacities of Tables B.52.2 to B.52.13	56

Table B.52.18 – Reduction factors for more than one circuit, cables laid directly in the ground – Installation method D2 in Tables B.52.2 to B.52.5 – Single-core or multi-core cables	57
Table B.52.19 – Reduction factors for more than one circuit, cables laid in ducts in the ground – Installation method D1 in Tables B.52.2 to B.52.5	58
Table B.52.20 – Reduction factors for group of more than one multi-core cable to be applied to reference current-carrying capacities for multi-core cables in free air – Method of installation E in Tables B.52.8 to B.52.13	60
Table B.52.21 – Reduction factors for groups of one or more circuits of single-core cables to be applied to reference current-carrying capacity for one circuit of single-core cables in free air – Method of installation F in Tables B.52.8 to B.52.13	62
Table C.52.1 – Current-carrying capacity in amperes	65
Table C.52.2 – Current-carrying capacities in amperes	66
Table C.52.3– Reduction factors for groups of several circuits or of several multi-core cables (to be used with current-carrying capacities of Table C.52.1)	67
Table E.52.1 – Reduction factors	70
Table F.52.1 – Suggested characteristics for conduit (classification according to IEC 61386)	73
Table G.52.1 – Voltage drop	74
Table 01 – Minimum permissible bending radius for fixed installation	108
Table 101 – Maximum distance between fixing means	108

Preview generated by EVS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

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 subclause 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.

A1 Amendment A1 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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at <https://patents.iec.ch>. IEC shall not be held responsible for identifying any or all such patent rights.

Amendment 1 to IEC 60364-5-52:2009 has been prepared by IEC technical committee 64: Electrical installations and protection against electrical shock.

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

Draft	Report on voting
64/2675/FDIS	64/2703/RVD

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

The language used for the development of this Amendment is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications/.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised. A1

This document is a preview generated by EVS

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*

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*

▣^{A1} IEC 60364-4-43:2023, *Low-voltage electrical installations – Part 4-43: Protection for safety – Protection against overcurrent* ▣^{A1}

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.

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).