

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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INTERNATIONAL ELECTROTECHNICAL COMMISSION

LOW-VOLTAGE ELECTRICAL INSTALLATIONS –

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

FOREWORD

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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 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.

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.

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*

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*

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 60364-5-54, *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*

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

520.3.2

busbar

low impedance conductor to which several electric circuits can be separately connected

[IEV 605-02-01]

520.4 General

Consideration shall be given to the application of the fundamental principles of IEC 60364-1 as it applies to

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).