

INTERNATIONAL STANDARD

NORME INTERNATIONALE

BASIC SAFETY PUBLICATION

PUBLICATION FONDAMENTALE DE SÉCURITÉ

Low-voltage electrical installations –

**Part 5-54: Selection and erection of electrical equipment – Earthing
arrangements and protective conductors**

Installations électriques basse-tension –

**Partie 5-54: Choix et mise en œuvre des matériels électriques – Installations de
mise à la terre et conducteurs de protection**



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IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland
Email: inmail@iec.ch
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CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
541 General	7
541.1 Scope.....	7
541.2 Normative references	7
541.3 Terms and definitions	8
542 Earthing arrangements	9
542.1 General requirements.....	9
542.2 Earth electrodes	10
542.3 Earthing conductors	12
542.4 Main earthing terminal.....	13
543 Protective conductors	13
543.1 Minimum cross-sectional areas	13
543.2 Types of protective conductors.....	15
543.3 Electrical continuity of protective conductors	16
543.4 PEN, PEL or PEM conductors	16
543.5 Combined protective and functional earthing conductors	18
543.6 Currents in protective earthing conductors	19
543.7 Reinforced protective earthing conductors for protective earthing conductor currents exceeding 10mA.....	19
543.8 Arrangement of protective conductors	19
544 Protective bonding conductors	19
544.1 Protective bonding conductors for connection to the main earthing terminal.....	19
544.2 Protective bonding conductors for supplementary bonding	20
Annex A (normative) Method for deriving the factor k in 543.1.2 (see also IEC 60724 and IEC 60949).....	21
Annex B (informative) Example of earthing arrangements and protective conductors	25
Annex C (informative) Erection of concrete-embedded foundation earth electrodes	27
Annex D (informative) Erection of soil-embedded earth electrodes.....	30
Annex E (informative) List of notes concerning certain countries.....	34
Bibliography.....	40
Figure 54.1 – Examples of a PEN conductor connection	18
Figure B.54.1 – Examples of earthing arrangements for foundation earth electrode, protective conductors and protective bonding conductors	26
Table 54.1 – Minimum size of commonly used earth electrodes, embedded in soil or concrete used to prevent corrosion and provide mechanical strength.....	11
Table 54.2 – Minimum cross-sectional area of protective conductors (where not calculated in accordance with 543.1.2)	14
Table A.54.1 – Value of parameters for different materials.....	21
Table A.54.2 – Values of k for insulated protective conductors not incorporated in cables and not bunched with other cables.....	22
Table A.54.3 – Values of k for bare protective conductors in contact with cable covering but not bunched with other cables	22

Table A.54.4 – Values of k for protective conductors as a core incorporated in a cable or bunched with other cables or insulated conductors	23
Table A.54.5 – Values of k for protective conductors as a metallic layer of a cable, e.g. armour, metallic sheath, concentric conductor, etc.....	24
Table A.54.6 – Values of k for bare conductors where there is no risk of damage to any neighbouring material by the temperature indicated	24
Table D.54.1 – Resistivity for types of soil	31
Table D.54.2 – Variation of the resistivity for different types of soil	31

INTERNATIONAL ELECTROTECHNICAL COMMISSION

LOW-VOLTAGE ELECTRICAL INSTALLATIONS –

Part 5-54: Selection and erection of electrical equipment – Earthing arrangements and protective conductors

FOREWORD

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International Standard IEC 60364-5-54 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 2002, and constitutes a technical revision.

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

- clarification of the definition of protective conductor;
- improved specification of mechanical characteristics of the earth electrode;
- introduction of earth electrode for protection against electric shock and lightning protection;
- annexes describing concrete-embedded foundation earth electrodes and soil-embedded earth electrode.

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

FDIS	Report on voting
64/1755/FDIS	64/1766/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.

It has the status of a basic safety publication in accordance with IEC Guide 104.

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 E 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.

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.

INTRODUCTION

Clause numbering is sequential, preceded by the number of this Part. Numbering of figures and tables takes the number of this part followed by a sequential number, i.e. Table 54.1, 54.2, etc. Numbering of figures and tables in annexes takes the letter of the annex, followed by the number of the part, followed by a sequential number, e.g. A.54.1, A.54.2, etc.

LOW-VOLTAGE ELECTRICAL INSTALLATIONS –

Part 5-54: Selection and erection of electrical equipment – Earthing arrangements and protective conductors

541 General

541.1 Scope

This part of IEC 60364 addresses the earthing arrangements and protective conductors including protective bonding conductors in order to satisfy the safety of the electrical installation.

541.2 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 60364-4-41:2005, *Low-voltage electrical installations – Part 4-41: Protection for safety – Protection against electric shock*

IEC 60364-4-44:2007, *Low-voltage electrical installations – Part 4-44: Protection for safety – Protection against voltage disturbances and electromagnetic disturbances*

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

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

IEC 61439-1, *Low-voltage switchgear and controlgear assemblies – Part 1: General rules*

IEC 61439-2, *Low-voltage switchgear and controlgear assemblies – Part 2: Power switchgear and controlgear assemblies*

IEC 60724, *Short-circuit temperature limits of electric cables with rated voltages of 1 kV ($U_m = 1,2$ kV) and 3 kV ($U_m = 3,6$ kV)*

IEC 60909-0, *Short-circuit currents in three-phase a.c. systems – Part 0: Calculation of currents*

IEC 60949, *Calculation of thermally permissible short-circuit currents, taking into account non-adiabatic heating effects*

IEC 61140:2001, *Protection against electric shock – Common aspects for installation and equipment*

IEC 61534-1, *Powertrack systems – Part 1: General requirements*

IEC 62305 (all parts) *Protection against lightning*

IEC 62305-3:2006, *Protection against lightning – Part 3: Physical damage to structures and life hazard*