ICS 29.020, 91.140.50 SLOVENSKÁ TECHNICKÁ NORMA Február 2023

STN	**Elektrické inštalácie nízkeho napätia Časť 5-54: Výber a stavba elektrických zariadení Uzemňovacie sústavy a ochranné vodiče Zmena A1**	**STN 33 2000-5-54/A1** 33 2000

Low-voltage electrical installations. Part 5-54: Selection and erection of electrical equipment. Earthing arrangements and protective conductors

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 01/23

STN 33 2000-5-54 z augusta 2012 sa bez tejto zmeny A1 môže používať do 25. 11. 2025.

Obsahuje: HD 60364-5-54:2011/A1:2022, IEC 60364-5-54:2011/AMD1:2021

136355

HARMONIZATION DOCUMENT
DOCUMENT D'HARMONISATION
HARMONISIERUNGSDOKUMENT

HD 60364-5-54:2011/A1

November 2022

ICS 29.020; 91.140.50

English Version

Low-voltage electrical installations - Part 5-54: Selection and erection of electrical equipment - Earthing arrangements and protective conductors (IEC 60364-5-54:2011/A1:2021)

Installations électriques à basse tension - Partie 5-54: Choix et mise en oeuvre des matériels électriques - Installations de mise à la terre et conducteurs de protection (IEC 60364-5-54:2011/A1:2021)

Errichten von Niederspannungsanlagen - Teil 5-54: Auswahl und Errichtung elektrischer Betriebsmittel - Erdungsanlagen, Schutzleiter und Schutzpotentialausgleichsleiter (IEC 60364-5-54:2011/A1:2021)

This amendment A1 modifies the Harmonization Document HD 60364-5-54:2011; it was approved by CENELEC on 2021-05-18. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for implementation of this amendment 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 amendment exists 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 Science 23, B-1040 Brussels

Ref. No. HD 60364-5-54:2011/A1:2022 E

European foreword

The text of document 64/2479/FDIS, future IEC 60364-5-54/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 60364-5-54:2011/A1:2022.

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) 2023-05-25
- latest date by which the national standards conflicting with the 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.

Endorsement notice

The text of the International Standard IEC 60364-5-54:2011/A1:2021 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60364-4-42 NOTE Harmonized as HD 60364-4-42

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Add the following references:

Publication	Year	Title	EN/HD	Year
IEC 60445	-	Basic and safety principles for man-machine interface, marking and identification - Identification of equipment terminals, conductor terminations and conductors	EN IEC 60445	-
IEC 60417	-	Graphical symbols for use on equipment. Index, survey and compilation of the single sheets.	-	-

Replace the existing reference to IEC 62305-3:2006 with the following reference:

Publication	Year	Title	EN/HD	Year
IEC 62305-3 (mod)	2010	Protection against lightning - Part 3: Physical damage to structures and life hazard	EN 62305-3	2011

HD 60364-5-54:2011/A1:2022 (E)

Annex ZB
(normative)

Special national conditions

Special national condition: National characteristic or practice that cannot be changed even over a long period, e.g. climatic conditions, electrical earthing conditions.

NOTE If it affects harmonization, it forms part of the Harmonization Document.

For the countries in which the relevant special national conditions apply these provisions are normative, for other countries they are informative.

Add the following special national conditions for Hungary and Estonia:

Clause Special national condition

542.2.1 **In Hungary**, the requirements of MSZ 18014 shall be used in the case of the installation of foundation earth electrodes, while installing other earthing arrangements for protection against electric shock, the requirements of this standard apply (see Table 54.1), supplemented with the minimum design values given in the table below.

Material	**Type of electrode**	**Minimum size of the conductor**		
		Diameter mm	**Cross-section** mm^2	**Thickness** mm
Steel * (bare, embedded in the ground)	Strip, for horizontal earth electrode		200	5
	Round bar for earth rod	20		
	Round wire for horizontal earth electrode	16		
* Only welded joint and with corrosion protection, seam length at least 50 mm.				

542.2.3 **In Estonia**, water or sewer pipes are not permitted as earth electrodes.

IEC 60364-5-54

Edition 3.0 2021-04

INTERNATIONAL STANDARD

NORME INTERNATIONALE

AMENDMENT 1
AMENDEMENT 1

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

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

IEC 60364-5-54:2011-03/AMD1:2021-04(en-fr)

IEC 60364-5-54

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

AMENDMENT 1
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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LOW-VOLTAGE ELECTRICAL INSTALLATIONS –

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

AMENDMENT 1

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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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 document may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

Amendment 1 to IEC 60364-5-54:2011 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:

Draft	Report on voting
64/2479/FDIS	64/2481/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/standardsdev/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,
- replaced by a revised edition, or
- amended.

INTRODUCTION to Amendment 1

The main changes provided in this Amendment 1 are:

- clarification and necessary modifications to define a clear borderline between functional earthing and protective earthing (see INTRODUCTION);
- introduction of additional requirements for functional earthing and functional-equipotential-bonding for information technology systems and communication equipment (ICT).

INTRODUCTION

Add the following new text at the end of the existing paragraph:

To define a clear borderline between functional earthing and protective earthing the following explanations are given:

Functional earthing

- Functional earthing

  If any connection of the functional earthing is interrupted, it does not impair any kind of protection or any kind of protective measure or protective provision provided for electrical safety. Therefore, its application mainly relates to:

  – communication,

  – measurement, and

  – EMC as regards radiated disturbances and conducted high frequency disturbances.

- Protective earthing

  If any connection of the protective earthing is interrupted, it impairs the protection or the function of a protective measure or protective provision provided for electrical safety.

  Requirement for protective earthing are given in:

  – IEC 60364-4-41 for protection against electric shock;
  – IEC 60364-4-42 for protection against thermal effects;
  – IEC 60364-4-44 for protection against conducted disturbances.

541.1 Scope

Add the following new text at the end of the existing paragraph:

This document also includes requirements regarding earthing and equipotential bonding for information and communication technology (ICT) with the aim of:

– reducing the risk of electrical hazards for correct operation of these devices and the information and communication technology wiring;
– providing the telecommunication systems with a reliable signal reference plane that can improve resistance to electromagnetic interference (EMI) by reference to ISO/IEC 30129.

NOTE Examples of information and communication technology (ICT) include:

– DC supply networks (and systems) for supplying power to ICT equipment within a building;
– star-shaped private automatic branch exchanges (PABX) or their equipment;
– local area (communication) networks (LANs);
– fire and intruder alarms communication systems;
– building automation systems, e.g. direct digital control systems;
– systems for computer-aided manufacturing (CAM) and other computer-aided services;
– broadcast and communication technology.

541.2 Normative references

Add the following new references:

IEC 60445, *Basic and safety principles for man-machine interface, marking and identification – Identification of equipment terminals, conductor terminations and conductors*

IEC 60417, *Graphical symbols for use on equipment* (available at http://www.graphical-symbols.info/equipment)

Replace the existing reference to IEC 62305-3:2006 with the following new reference:

IEC 62305-3:2010, *Protection against lightning – Part 3: Physical damage to structures and life hazard*