SLOVENSKI STANDARD
oSIST prEN IEC 62561-2:2024

01-oktober-2024

Elementi za zaščito pred strelo (LPSC) - 2. del: Zahteve za vodnike in ozemljila

Lightning protection system components (LPSC) - Part 2: Requirements for conductors and earth electrodes

Blitzschutzsystembauteile (LPSC) - Teil 2: Anforderungen an Leiter und Erder

Composants des systèmes de protection contre la foudre (CSPF) - Partie 2: Exigences pour les conducteurs et les électrodes de terre

Ta slovenski standard je istoveten z: **prEN IEC 62561-2:2024**

ICS:

91.120.40	Zaščita pred strelo	Lightning protection

oSIST prEN IEC 62561-2:2024 **en**

81/771/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER:	
IEC 62561-2 ED3	
DATE OF CIRCULATION:	CLOSING DATE FOR VOTING:
2024-08-02	**2024-10-25**
SUPERSEDES DOCUMENTS:	
81/754/CD, 81/765A/CC	

IEC TC 81 : LIGHTNING PROTECTION	
SECRETARIAT: Italy	SECRETARY: Mrs Marina Bernardi
OF INTEREST TO THE FOLLOWING COMMITTEES: SC 37A,TC 64,TC 88	PROPOSED HORIZONTAL STANDARD: ☐ Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.

FUNCTIONS CONCERNED:

☐ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☒ SAFETY

☒ SUBMITTED FOR CENELEC PARALLEL VOTING	☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING
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TITLE:

Lightning protection system components (LPSC) - Part 2: Requirements for conductors and earth electrodes

PROPOSED STABILITY DATE: 2029

NOTE FROM TC/SC OFFICERS:

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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LIGHTNING PROTECTION SYSTEM COMPONENTS (LPSC) –

Part 2: Requirements for conductors and earth electrodes

FOREWORD

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IEC 62561-2 has been prepared by IEC technical committee 81: Lightning protection.

This third edition cancels and replaces the second edition published in 2018. This edition constitutes a technical revision.

This edition includes the following significant technical change with respect to the previous edition:

a) definitions of new conductor types mentioned in the text of the document have been added;

b) the document has been updated in line with the new edition of IEC 60068-2-52: 2017, on Salt mist treatment;

c) the document has been updated in line with the new edition of ISO 22479:2019 on humid sulphurous atmosphere treatment;

d) a new normative Annex H for material, configuration and cross-sectional area test has been introduced;

e) a new normative Annex I for Applicability of previous tests has been introduced.

f) equipotential earth grid has been introduced.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
81/XXX/FDIS	81/XXX/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 62561 series, published under the general title *Lightning protection system components (LPSC),* can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://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.

The contents of the corrigendum of August 2019 have been included in this copy.

INTRODUCTION

This part of IEC 62561 deals with the requirements and tests for lightning protection system components (LPSC), specifically conductors and earth electrodes, used for the installation of a lightning protection system (LPS) designed and implemented according to IEC 62305 (all parts).

LIGHTNING PROTECTION SYSTEM COMPONENTS (LPSC) –

Part 2: Requirements for conductors and earth electrodes

1 Scope

Part 2 of IEC 62561 specifies the requirements and tests for:

– metallic conductors (other than "natural" conductors) that form part of the air-termination and down-conductor systems,

– metallic earth electrodes that form part of the earth-termination system.

NOTE 1 Additional requirements can be necessary for conductors and earth electrodes intended for use in hazardous environments

NOTE 2 In CENELEC member countries, testing requirements of components for explosive atmospheres are specified in CLC/TS 50703-2.

2 Normative references

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.

IEC 60068-2-52: 2017, *Environmental testing – Part 2-52: Tests – Test Kb: Salt mist, cyclic (sodium, chloride solution*)

IEC 60228, *Conductors of insulated cables*

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

IEC 62305-4, *Protection against lightning – Part 4: Electrical and electronic systems within structures*

IEC 62561-1, *Lightning protection system components (LPSC) – Part 1, Requirements for connection components*

ISO 2178, *Non-magnetic coatings on magnetic substrates – Measurement of coating thickness – Magnetic method*

ISO 6892-1, *Metallic materials – Tensile testing – Part 1: Method of test at room temperature*

ISO 6957:1988, *Copper alloys – Ammonia test for stress corrosion resistance*

ISO 22479:2019, *Corrosion of metals and alloys — Sulphur dioxide test in a humid atmosphere (fixed gas method)*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/

- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
air-termination system
part of an external lightning protection system (LPS) intended to intercept lightning flashes

EXAMPLES: Air-termination rods, air-termination conductors and catenary wires

3.2
air-termination rod
part of the air-termination system consisting of a metal rod for intercepting and conducting flashes to the down-conductor and earthing system of the lightning protection system (LPS)

3.3
air-termination conductor
part of the air-termination system consisting of a conductor for intercepting and conducting flashes to the down-conductor and earthing system of the lightning protection system (LPS)

3.4
catenary wire
part of the air-termination system consisting of an overhead wire for intercepting and conducting flashes to the down-conductor and earthing system of the lightning protection system (LPS)

3.5
copper coated steel
steel that is manufactured through a continuous electro-plating process of copper over steel core, resulting in a permanent molecular bond between the two materials

3.6
down-conductor system
part of an external LPS intended to conduct lightning current between the air-termination system and the earth-termination system

3.7
couplers for earth rods
part of the earth-termination system that facilitates the coupling of one section of an earth rod to another for the purpose of deep driving

NOTE 1 Male and female or plug and socket connections of earth rods are also defined as couplers

3.8
down-conductor
part of the down-conductor system intended to conduct lightning current from the air-termination system to the earth-termination system of the LPS

3.9
earth lead-in conductor
conductor installed between the down-conductor or test joint and the earth electrode intended to provide connection of the earth electrode with the test joint and can be partially buried in soil or partially embedded in concrete and partially placed in air. It may also provide mechanical protection against accidental stresses to the down conductor system.

3.10
earth-termination system
part of an external lightning protection system, which is intended to conduct and disperse lightning current to the earth

3.11
earth electrode
ground electrode (USA)

part or a group of parts of the earth-termination system which provides direct electrical contact with the earth and disperses lightning current into the earth

IEV 195-02-01 with modification (Examples)

EXAMPLES: Tape, wire, earth plate, lattice earth plate, meshed earth plate, solid earth rod, tubular earth rod

3.12
earth conductor
ground conductor (USA)
earth electrode consisting of a conductor buried in the ground

3.13
earth electrode
consisting of a conductor buried in the ground

3.14
earth plate
metallic earth electrode consisting of “solid plate buried in the ground” “lattice plate buried in the ground”

3.15
earth rod
earth electrode consisting of a solid or tubular metal rod driven into the ground

3.16
earth rod driving head
tool used in those applications where it is necessary to drive the earth rod

3.17
hot dipped galvanized steel
steel coated by a process which alloys with the surface of the base metal when immersing the metal in a bath of molten zinc at a temperature of around 450 °C (842 °F).

3.18
type test
test required to be made before supplying a type of material covered by IEC 62561-2 on a general commercial basis, in order to demonstrate satisfactory performance characteristics to meet the intended application

3.19
stranded conductor
conductor consisting of a number of individual wires or strands all or some of which generally have helical form

NOTE 1 to entry: The cross-section of a stranded conductor can be circular or otherwise shaped.

NOTE 2 to entry: The term “strand” is also used to designate a single wire. [IEC 60050-461:2008, 461-01-07]

3.20
rope lay conductor
conductor composed of a central core surrounded by one or more layers of helically laid groups of wires