



SLOVENSKI STANDARD
oSIST prEN IEC 62561-2:2024
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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

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OF INTEREST TO THE FOLLOWING COMMITTEES: SC 37A, TC 64, TC 88	PROPOSED HORIZONTAL STANDARD: <input type="checkbox"/> Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
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TITLE:

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

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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LIGHTNING PROTECTION SYSTEM COMPONENTS (LPSC) –

127

128

Part 2: Requirements for conductors and earth electrodes

129

130

FOREWORD

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132 all national electrotechnical committees (IEC National Committees). The object of IEC is to promote
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165 IEC 62561-2 has been prepared by IEC technical committee 81: Lightning protection.

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

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

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

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

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

- 176 d) a new normative Annex H for material, configuration and cross-sectional area test has
177 been introduced;
- 178 e) a new normative Annex I for Applicability of previous tests has been introduced.
- 179 f) equipotential earth grid has been introduced.

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

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

181
182 Full information on the voting for the approval of this International Standard can be found in
183 the report on voting indicated in the above table.

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

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

187 The committee has decided that the contents of this document will remain unchanged until the
188 stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to
189 the specific document. At this date, the document will be

- 190 • reconfirmed,
- 191 • withdrawn,
- 192 • replaced by a revised edition, or
- 193 • amended.

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

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196

INTRODUCTION

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

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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/>

- 239 • ISO Online browsing platform: available at <http://www.iso.org/obp>

240 **3.1**

241 **air-termination system**

242 part of an external lightning protection system (LPS) intended to intercept lightning flashes

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

244 **3.2**

245 **air-termination rod**

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

248 **3.3**

249 **air-termination conductor**

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

252 **3.4**

253 **catenary wire**

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

257 **3.5**

258 **copper coated steel**

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

261 **3.6**

262 **down-conductor system**

263 part of an external LPS intended to conduct lightning current between the air-termination
264 system and the earth-termination system

265 **3.7**

266 **couplers for earth rods**

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

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

270 **3.8**

271 **down-conductor**

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

274 **3.9**

275 **earth lead-in conductor**

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

280 **3.10**

281 **earth-termination system**

282 part of an external lightning protection system, which is intended to conduct and disperse
283 lightning current to the earth

284 **3.11**

285 **earth electrode**

286 **ground electrode (USA)**

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

289 IEC 195-02-01 with modification (Examples)

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

291 **3.12**

292 **earth conductor**

293 **ground conductor** (USA)

294 earth electrode consisting of a conductor buried in the ground

295 **3.13**

296 **earth electrode**

297 consisting of a conductor buried in the ground

298 **3.14**

299 **earth plate**

300 metallic earth electrode consisting of "solid plate buried in the ground" "lattice plate buried in
301 the ground"

302 **3.15**

303 **earth rod**

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

305 **3.16**

306 **earth rod driving head**

307 tool used in those applications where it is necessary to drive the earth rod

308 **3.17**

309 **hot dipped galvanized steel**

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

312 **3.18**

313 **type test**

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

317 **3.19**

318 **stranded conductor**

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

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

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

323 **3.20**

324 **rope lay conductor**

325 conductor composed of a central core surrounded by one or more layers of helically laid
326 groups of wires

327