



# SLOVENSKI STANDARD

## SIST EN 50164-1:2000

01-september-2000

---

### Lightning protection components (LPC) - Part 1: Requirements for connection components

Lightning Protection Components (LPC) -- Part 1: Requirements for connection components

Blitzschutzbauteile -- Teil 1: Anforderungen an Verbindungsbauteile

Composants de protection contre la foudre (CPF) -- Partie 1: Prescriptions pour les composants de connexion

**iTeh STANDARD PREVIEW**  
(standards.itteh.ai)

[SIST EN 50164-1:2000](https://standards.itteh.ai/catalog/standards/sist/4ac8e782-77ec-4940-9807-7d12d157be50/sist-en-50164-1-2000)

Ta slovenski standard je istoveten z: **EN 50164-1:1999**

---

#### **ICS:**

91.120.40      Zaščita pred strelo      Lightning protection

**SIST EN 50164-1:2000**

**en**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 50164-1:2000

<https://standards.iteh.ai/catalog/standards/sist/4ac8e782-77ec-4940-9807-7d12df37be50/sist-en-50164-1-2000>

EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 50164-1**

September 1999

ICS 91.120.40

English version

**Lightning Protection Components (LPC)  
Part 1: Requirements for connection components**

Composants de Protection contre la  
Foudre (CPF)  
Partie 1: Prescriptions pour les  
composants de connexion

Blitzschutzbauteile  
Teil 1: Anforderungen für  
Verbindungsbauteile

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 50164-1:2000

<https://standards.iteh.ai/catalog/standards/sist/4ac8e782-77ec-4940-9807-7d12df37be50/sist-en-50164-1-2000>

This European Standard was approved by CENELEC on 1999-08-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

**CENELEC**

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Central Secretariat: rue de Stassart 35, B - 1050 Brussels**

## Foreword

This European Standard was prepared by the Technical Committee CENELEC TC 81X, Lightning protection.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50164-1 on 1999-08-01.

The following dates were fixed:

- latest date by which the EN has to be implemented  
at national level by publication of an identical  
national standard or by endorsement (dop) 2000-08-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2002-08-01

Annexes designated "normative" are part of the body of the standard.

Annexes designated "informative" are given for information only.

In this standard, annexes C and D are normative and annexes A, B and E are informative.

SIST EN 50164-1:2000

<https://standards.iteh.ai/catalog/standards/sist/4ac8e782-77ec-4940-9807-7d12df37be50/sist-en-50164-1-2000>

**Contents**

1	Scope .....	4
2	Normative references.....	4
3	Definitions .....	4
4	Classification .....	5
5	Requirements.....	6
6	Tests.....	7
	Annex A (informative) Summary of the requirements and corresponding tests.....	11
	Annex B (informative) Typical arrangement for various LPC's .....	12
	Annex C (normative) Conditioning/ageing for connection components above ground .....	13
	Annex D (normative) Conditioning/ageing for components buried in ground.....	14
	Annex E (informative) Rationale to reduce the number of tests.....	15

Page 4

EN 50164-1:1999

## 1 Scope

This European Standard specifies the requirements and tests for metallic connection components such as connectors, bonding and bridging components, expansion pieces as well as test joints for Lightning Protection Systems (LPS).

NOTE: Lightning Protection Components (LPC) may also be suitable for use in hazardous conditions such as fire and explosive atmosphere. Regard should be taken of the extra requirements necessary for the components to be installed in such conditions.

## 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this draft European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 60068-2-52	1996	Environmental testing - Part 2: Tests - Test Kb: Salt mist, cyclic (sodium chloride solution) (IEC 60068-2-52:1996)
EN ISO 6988	1994	Metallic and other non-organic coatings - Sulphur dioxide test with general condensation of moisture
ISO 6957	1988	Copper alloys - Ammonia test for stress corrosion resistance

## 3 Definitions

For the purpose of this European Standard, the following definitions apply:

### 3.1 connection component

Component for the connection of conductors to each other or to metal installations. This also includes bridging component and expansion piece.

### 3.2 metal installation

Extended metal items in the structure to be protected which may form a path for lightning current, such as pipes, staircases, elevator guide rails, ventilation, heating and air conditioning ducts, and interconnected reinforcing steel.

### 3.3 bridging component

Connection component for the connection of metal installations.

### 3.4 expansion piece

Connection component designed to compensate for changes in length in conductors and/or metal installations caused by temperature changes.

### 3.5 connector

Connection component to interconnect two or more conductors.

### 3.6 clamp

Connection component for the connection of conductors to metal installations.

### 3.7 pipe clamp

Clamp for the connection of conductors to metal pipes.

### 3.8 test joint

A joint which is designed and situated to facilitate electrical testing and measurement of LPS.

### 3.9 connection range

The range minimum to maximum on which a specific connection component is designed to be used.

## 4 Classification

### 4.1 According to its capability to withstand lightning current

- class H for heavy duty;
- class N for normal duty.

### 4.2 According to its installation

- above ground;
- buried in ground.

## 5 Requirements

### 5.1 General

Connection components shall be designed in such a manner that when they are installed in accordance with the manufacturer's instructions their performance shall be reliable, stable and safe to persons and surrounding equipment.

NOTE: A summary of the requirements and their corresponding tests is given in annex A.

### 5.2 Installation instructions

The manufacturer of the connection components shall provide adequate instructions in his literature to ensure that the installer of the connection components can select and install them in a suitable and safe manner.

Compliance is checked by inspection.

### 5.3 Lightning current carrying capability

Connection components shall have sufficient lightning current carrying capability.

Compliance is checked in accordance with 6.3 following the manufacturer's declaration for the class H or N of the connection components in accordance with 4.1.

<https://standards.iteh.ai/catalog/standards/sist/4ac8e782-77ec-4940-9807-7d12df37be50/sist-en-50164-1-2000>

### 5.4 Screwed clamping connection

Where screws and/or nuts are used as the clamping connection, the design shall be such that the conductor and/or the metal installation is always securely fastened by the screw and/or nut application.

Compliance is checked by inspection and in accordance with 6.3.

### 5.5 Dismantling of test joints

It shall be possible to dismantle the test joints after lightning current stress.

Compliance is checked in accordance with 6.3.

### 5.6 Damage to conductors and metal installations

Connection components shall be so designed that they connect the conductors and/or the metal installations without undue damage to the conductors, the metal installations and/or the connection components.

Compliance is checked by inspection.



## 5.7 Safe connection

Connection components shall guarantee safe connection within the connection range declared by the manufacturer.

Compliance is checked in accordance with 6.3.

## 5.8 Marking

The connection components shall be marked at least with the following:

- a) manufacturer's or responsible vendor's name or trade mark;
- b) identifying symbol;
- c) the classification, i.e. class N or H.

Where this proves to be impractical the marking in accordance with b) may be given on the smallest packing unit.

The marking shall be durable and legible.

NOTE: Marking may be applied for example by moulding, pressing, engraving, printing adhesive labels, or water slide transfers.

**(standards.iteh.ai)**

Compliance is checked by inspection and in accordance with 6.4.

[SIST EN 50164-1:2000](https://standards.iteh.ai/catalog/standards/sist/4ac8e782-77ec-4940-9807-7d12df37be50/sist-en-50164-1-2000)

<https://standards.iteh.ai/catalog/standards/sist/4ac8e782-77ec-4940-9807-7d12df37be50/sist-en-50164-1-2000>

## 6 Tests

### 6.1 General

The tests in accordance with this standard are type tests. Tests shall be carried out with three specimens of the same type and the requirements are satisfied if the tests are met. If only one of the specimens does not satisfy a test due to an assembly or manufacturing fault, that test and any preceding one which may have influenced the results of the test shall be repeated and also the tests which follow shall be made in the required sequence on another full set of specimens, all of which shall comply with the requirements.

NOTE 1: Criteria to reduce the number of tests for those situations where the connection component of the same type can be used in various arrangements, as described in annex B, are given in informative annex E.

NOTE 2: Criteria to reduce the number of tests for connection components belonging to the same family are given in informative annex E.

The tests shall be carried out in the order given after conditioning/ageing the arrangement of the specimen in accordance with 6.2.2.