



**SLOVENSKI STANDARD
SIST HD 384.1 S2:2003**

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Electrical installations of buildings -- Part 1: Scope, object and fundamental principles

Elektrische Anlagen von Gebäuden -- Teil 1: Anwendungsbereich, Zweck und
allgemeine Grundsätze

(standards.iteh.ai)

Installations électriques des bâtiments -- Partie 1: Domaine d'application, objet et
principes fondamentaux

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91.140.50 Sistemi za oskrbo z elektriko Electricity supply systems

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HARMONIZATION DOCUMENT

HD 384.1 S2

DOCUMENT D'HARMONISATION

HARMONISIERUNGSDOKUMENT

October 2001

ICS 91.140.50

Supersedes HD 384.1 S1:1979

English version

Electrical installations of buildings
Part 1: Scope, object and fundamental principles
(IEC 60364-1:1992, modified)

Installations électriques des bâtiments
Partie 1: Domaine d'application, objet et
principes fondamentaux
(CEI 60364-1:1992, modifiée)

Elektrische Anlagen von Gebäuden
Teil 1: Anwendungsbereich, Zweck und
allgemeine Grundsätze
(IEC 60364-1:1992, modifiziert)

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This Harmonization Document was approved by CENELEC on 1999-01-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for implementation of this Harmonization Document on a national level.

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

This Harmonization Document exists in three official versions (English, French, German).

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, 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

The text of the International Standard IEC 60364-1:1992, prepared by IEC TC 64, Electrical installations and protection against electric shock, together with common modifications prepared by the Technical Committee CENELEC TC 64, Electrical installations of buildings, was submitted to the Unique Acceptance Procedure and was approved by CENELEC as HD 384.1 S2 on 1999-01-01.

This Harmonization Document supersedes HD 384. S1:1979.

The following dates were fixed:

- latest date by which the existence of the HD has to be announced at national level (doa) 1999-08-01
- latest date by which the HD has to be implemented at national level by publication of a harmonized national standard or by endorsement (dop) 2002-08-01
- latest date by which the national standards conflicting with the HD have to be withdrawn (dow) 2002-08-01

In this Harmonization Document the common modifications to the International Standard are indicated by a vertical line in the left margin of the text.

Annexes designated "informative" are given for information only.

In this standard, annex ZA is informative. Annex ZA has been added by CENELEC.

The annex A mentioned in IEC 60364-1:1992 has been withdrawn from the present document.

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CHAPTER 11: SCOPE

11.1 This Harmonization Document applies to electrical installations such as those of:

- a) residential premises;
- b) commercial premises;
- c) public premises;
- d) industrial premises;
- e) agricultural and horticultural premises;
- f) prefabricated buildings;
- g) caravans, caravan sites and similar sites;
- h) construction sites, exhibitions, fairs and other temporary installations;
- i) marinas.

11.2 It covers:

- a) circuits supplied at nominal voltages up to and including 1 000 V a.c. or 1 500 V d.c.; for a.c., the preferred frequencies which are taken into account in this Harmonization Document are 50 Hz, 60 Hz and 400 Hz. The use of other frequencies for special purposes is not excluded;
- b) circuits, other than the internal wiring of apparatus, operating at voltages exceeding 1 000 V and derived from an installation having a voltage not exceeding 1 000 V a.c., e.g. discharge lighting, electrostatic precipitators;
- c) any wiring systems and cables not specifically covered by the standards for appliances;
- d) all consumer installations external to buildings;
- e) fixed wiring for communication and information technology, signalling, control and the like (excluding internal wiring of apparatus);
- f) the extension or alteration of the installation and also parts of the existing installation affected by the extension or alteration.

11.3 The Harmonization Document does not apply to:

- a) electric traction equipment (including rolling stock and signalling equipment);
- b) electrical equipment of automobiles (including electric cars);
- c) electrical installations on board ships, mobile and fixed offshore platforms;
- d) electrical installations in aircraft;
- e) public lighting installations which are part of public power grid;
- f) installations in mines and quarries;
- g) radio interference suppression equipment, except so far as it affects safety of the installation;
- h) electric fences;
- i) lightning protection of buildings.

NOTE 1 Protection against overvoltages of atmospheric origin or due to switching is covered in HD 384.4.443.

NOTE 2 Outdoor lighting installations other than those specified in item e) is covered in HD 384.7.714.

11.4 This Harmonization Document is not intended to apply:

- to either public or privately operated supply systems for the distribution of electricity ; or
- to power generation, transmission and the auxiliary equipment for such systems.

NOTE 1 Countries wishing to do so may, however, use this Harmonization Document in whole or in part for that purpose.

NOTE 2 Protection of low voltage installations in case of faults between high voltage systems and earth is covered in HD 384.4.442.

11.5 Electrical equipment is dealt with only as far as its selection and application in the installation are concerned.

This applies also to assemblies of electrical equipment complying with the relevant standards.

CHAPTER 12: OBJECT

12.1 This standard contains the rules for the design and erection of electrical installations so as to provide safety and proper functioning for the intended use.

12.2 Chapter 13 of this standard states the fundamental principles. It does not include detailed technical requirements which may be subject to modifications on account of technical developments.

12.3 Parts 3 to 7 of this standard deal with technical requirements, the observance of which is intended to ensure that electrical installations conform to the fundamental principles of chapter 13.

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CHAPTER 13: FUNDAMENTAL PRINCIPLES

NOTE Where countries not yet having national regulations for electrical installations deem it necessary to establish legal requirements for this purpose, it is recommended that such requirements be limited to fundamental principles which are not subject to frequent modification on account of technical development. The contents of chapter 13 may be used as a basis for such legislation.

SECTION 131: PROTECTION FOR SAFETY

131.1 General

The requirements stated in this section are intended to ensure the safety of persons, livestock and property against dangers and damage which may arise in the reasonable use of electrical installations.

NOTE In electrical installations, two major types of risk exist:

- shock currents;
- excessive temperatures likely to cause burns, fires and other injurious effects.

131.2 Protection against electric shock

131.2.1 Protection against direct contact

Persons and livestock shall be protected against dangers that may arise from contact with live parts of the installation.

This protection can be achieved by one of the following methods:

- preventing a current from passing through the body of any person or any livestock;
- limiting the current which can pass through a body to a value lower than the shock current.

131.2.2 Protection against indirect contact

Persons and livestock shall be protected against dangers that may arise from contact with exposed-conductive-parts in case of a fault.

This protection can be achieved by one of the following methods:

- preventing a fault current from passing through the body of any person or any livestock;
- limiting the fault current which can pass through a body to a value lower than the shock current;
- automatic disconnection of the supply in a determined time on the occurrence of a fault likely to cause a current to flow through a body in contact with exposed-conductive-parts, where the value of that current is equal to or greater than the shock current.

NOTE In connection with the protection against indirect contact, the application of the method of equipotential bonding is one of the important principles for safety.

131.3 Protection against thermal effects

The electrical installation shall be so arranged that there is no risk of ignition of flammable materials due to high temperature or electric arc. In addition, during normal operation of the electrical equipment, there shall be no risk of persons or livestock suffering burns.

131.4 Protection against overcurrent

Persons or livestock shall be protected against injury and property shall be protected against damage due to excessive temperatures or electromechanical stresses caused by any overcurrents likely to arise in live conductors.

This protection can be achieved by one of the following methods:

- automatic disconnection on the occurrence of an overcurrent before this overcurrent attains a dangerous value taking into account its duration;
- limiting the maximum overcurrent to a safe value and duration.

131.5 Protection against fault currents

Conductors, other than live conductors, and any other parts intended to carry a fault current shall be capable of carrying that current without attaining an excessive temperature.

NOTE 1 Particular attention should be given to earth fault currents and leakage current.

NOTE 2 For live conductors, compliance with clause 131.4 assures their protection against overcurrents caused by faults.

131.6 Protection against overvoltage

131.6.1 Persons or livestock shall be protected against injury and property shall be protected against any harmful effects as a consequence of a fault between live parts of circuits supplied at different voltages.

131.6.2 Persons, livestock and property shall be protected against the consequence of overvoltages likely to arise due to causes (e.g. atmospheric phenomena or switching overvoltages) where the risk is unacceptable.

SECTION 132: DESIGN

132.1 General

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For the design of the electrical installation, the following factors shall be taken into account to provide:

- the protection of persons, livestock and property in accordance with section 131;
- the proper functioning of the electrical installation for the intended use.

The information required as a basis for design is listed in clauses 132.2 to 132.5. The requirements with which the design should comply are stated in clauses 132.6 to 132.12.

132.2 Characteristics of available supply or supplies

132.2.1 Nature of current: a.c. and/or d.c.

132.2.2 Nature and number of conductors:

- For a.c.: line conductor(s);
neutral conductor;
protective conductor.
- For d.c.: conductors equivalent to those listed above.

132.2.3 Values and tolerances:

- voltage and voltage tolerances;
- frequency and frequency tolerances;
- maximum current allowable;
- prospective short-circuit current.

NOTE Details of these values and tolerances are given in EN 50160:1999.