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**Električne inštalacije zgradb - 4. del: Zaščitni ukrepi - 42. poglavje: Zaščita pred toplotnimi učinki (IEC 60364-4-42:1980, spremenjen)**

Electrical installations of buildings -- Part 4: Protection for safety -- Chapter 42: Protection against thermal effects

Elektrische Anlagen von Gebäuden -- Teil 4: Schutzmaßnahmen -- Kapitel 42: Schutz gegen thermische Einflüsse

Installations électriques des bâtiments -- Partie 4: Protection pour assurer la sécurité -- Chapitre 42: Protection contre les effets thermiques

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**Ta slovenski standard je istoveten z: HD 384.4.42 S1:1985**

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**ICS:**

29.120.50	Varovalke in druga medtokovna zaščita	Fuses and other overcurrent protection devices
91.140.50	Sistemi za oskrbo z elektriko	Electricity supply systems

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HD 384.4.42

## ENGLISH VERSION

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ELECTRICAL INSTALLATIONS OF BUILDINGS  
PART 4: PROTECTION FOR SAFETY  
CHAPTER 42: Protection against thermal effectsInstallations électriques des  
bâtiments. Quatrième partie:  
Protection pour assurer la sécurité  
Chapitre 42: Protection contre  
les effets thermiquesElektrische Anlagen von Gebäuden  
Teil 4: Schutzmassnahmen  
Kapitel 42: Schutz gegen thermische  
EinflüsseBODY OF HD

The Harmonization Document consists of:

- IEC 364-4-42 (1980) edition 1, , together with
- the CENELEC common modifications prepared by CENELEC/TC 64, appended

This Harmonization Document was approved by CENELEC on 13 April 1983.

The English and French versions of this HD are provided by the text of the IEC publication and the German version is the official translation of the IEC text. All texts prepared by CENELEC exist in three official versions (English, French, and German).

According to the CENELEC Internal Regulations the CENELEC member National Committees are bound:

to announce the existence of this Harmonization Document at national level

by or before 1986-01-01

to publish their new harmonized national standard

by or before 1986-10-01

to withdraw all conflicting national standards

by or before 1987-10-01.

Harmonized national standards are listed on the HD information sheet, which is available from the CENELEC National Committees or from the CENELEC General Secretariat.

The CENELEC National Committees are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxemburg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

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PREFACE1.- Reference Document

The reference Document for this Harmonization Document is the International Electrotechnical Commission Standard IEC: 364-4-42, First Edition, 1980, prepared by IEC Technical Committee 64: Electrical installations of buildings.

2.- Scope

The scope of this Harmonization Document is CENELEC Harmonization Document HD. 384.1.

3.- CENELEC Common Modifications

CENELEC Common Modifications of the Reference Document are numbered and indicated by marginal side-lining. Justifications for the common modifications are stated in Appendix A.

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## ELECTRICAL INSTALLATIONS OF BUILDINGS

## Part 4: Protection for safety

## 42. PROTECTION AGAINST THERMAL EFFECTS

Note.- Fire terms and related tests are for future work by cooperation between the ISO and the IEC. The terms used in this chapter are provisional.

421. General

Persons, fixed equipment, and fixed materials adjacent to electrical equipment, shall be protected against harmful effects of heat developed by electrical equipment, or thermal radiation, particularly the following effects:

- (1) |
- combustion, ignition or degradation of materials ;
  - risk of burns ;
  - impairment of the safe function of installed equipment.

Note.- Protection against overcurrent is dealt with in HD 384-4-43.

422. Protection against fire

422.1 Electrical equipment shall not present a fire hazard to adjacent materials.

- (2) |
- Any relevant erection instructions of the manufacturer shall be observed in addition to the requirements of this HD.

422.2 Where fixed equipment may attain surface temperatures which could cause a fire hazard to adjacent materials, the equipment shall either:

- be mounted on or within materials which will withstand such temperatures and are of low thermal conductance, or
- be screened from elements of building construction by materials which will withstand such temperatures and are of low thermal conductance, or
- be mounted to allow safe dissipation of heat at a sufficient distance from any material on which such temperatures could have deleterious thermal effects, any means of support being of low thermal conductance.

422.3 Where arcs or sparks may be emitted by permanently connected equipment in normal service, the equipment shall either:

- be totally enclosed in arc-resistant material, or
- be screened by arc-resistant material from building elements on which the arcs could have deleterious thermal effects, or

(3)

- be mounted to allow safe extinction of the arc or sparks at a sufficient distance from building elements on which the arc or sparks could have deleterious thermal effects.

In cas of arcs, arc-resistant material used for this protective measure shall be non-combustible, or low thermal conductivity and of adequate thickness to provide mechanical stability.

422.4 Fixed equipment causing a focussing or concentration of heat shall be at a sufficient distance from any fixed object or building element so that the object or element, in normal conditions, cannot be subjected to a dangerous temperature.

422.5 Wherever electrical equipment in a single location contains flammable liquid in significant quantity, precautions shall be taken to prevent burning liquid and the products of combustion of the liquid (flame, smoke, toxic gases) spreading to other parts of the building.

Notes. 1. Examples of such precautions are:

- a drainage pit to collect leakages of liquid and ensure their extinction in the event of fire, or
- installation of the equipment in a chamber of adequate fire resistance and the provision of sills or other means of preventing burning liquid spreading to other parts of the building, such chamber being ventilated solely to the external atmosphere.

2. The generally accepted lower limit for a significant quantity is 25 l.

3. For less than 25 l, it is sufficient to take precautions to prevent the escape of liquid.

4. It is desirable to switch off supply to the equipment at the onset of a fire.

(4)

422.6 The materials of enclosures arranged around electrical equipment during erection shall withstand the highest temperature likely to be produced by the electrical equipment.

Combustible materials are not suitable for the construction of these enclosures unless preventive measures against ignition are taken, such as covering with non-combustible or difficultly combustible material of low thermal conductivity.

#### 423. Protection against burns

Accessible parts of electrical equipment within arm's reach shall not attain a temperature likely to cause burns to persons, and shall comply with the appropriate limit stated in Table 42 A. All parts of the installation likely in normal service to attain, even for short periods, temperatures exceeding the limits stated in Table 42 A shall be guarded so as to prevent any accidental contact.

However, the values in Table 42 A do not apply to equipment complying with temperature limits for exposed surfaces for safety from burns where such

(5)

limits are stated in the EN or HD CENELEC for the type of equipment for the type of equipment concerned, or in the absence of EN or HDs, in the corresponding National Standards.

TABLE 42 A

Temperature limits in normal service for accessible parts of equipment within arm's reach

Accessible parts	Materials of accessible surfaces	Maximum temperatures (°C)
Hand-held means of operation	Metallic	55
	Non-metallic	65
Parts intended to be touched but not hand-held	Metallic	70
	Non-metallic	80
Parts which need not be touched for normal operation	Metallic	80
	Non-metallic	90

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#### 424. Protection against overheating [standards.iteh.ai](https://standards.iteh.ai)

##### 424.1 Forced air heating systems [SIST HD 384.4.42 S1:2000](https://standards.iteh.ai/catalog/standards/sist/075606ee-2027-4ac7-ald8-)

424.1.1 Forced air heating systems shall be such that their heating elements, other than those of central-storage heaters, cannot be activated until the prescribed air flow has been established and are deactivated when the air flow is reduced or stopped. In addition, they shall have two temperature limiting devices independent of each other which prevent permissible temperatures from being exceeded in air ducts.

424.1.2 The frame and enclosure of heating elements shall be of non-combustible material.

##### 424.2 Appliances producing hot water or steam

All appliances producing hot water or steam shall be protected by design or erection against overheating in all service conditions. Unless the appliances comply as a whole with an appropriate EN or HD CENELEC the protection shall be by means of an appropriate non-self-resetting device, functioning independently of the thermostat.

If an appliance has no free outlet, it shall also be provided with a device which limits the water pressure.

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