



SLOVENSKI STANDARD
SIST EN 60519-1:1999

01-julij-1999

Safety in electroheat installations - Part 1: General requirements (IEC 60519-1:1984)

Safety in electroheat installations -- Part 1: General requirements

Sicherheit in Elektrowärmeanlagen -- Teil 1: Allgemeine Anforderungen

Sécurité dans les installations électrothermiques -- Partie 1: Règles générales

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Ta slovenski standard je istoveten z: EN 60519-1:1993

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ICS:

25.180.10 Ò^ \ d ä } ^ Á ^ ã Electric furnaces

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en

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EUROPEAN STANDARD

EN 60519-1

NORME EUROPEENNE

EUROPÄISCHE NORM

July 1993

UDC 621.365:614.8

Supersedes HD 491.1 S1:1988

Descriptors: Electroheat installations, industrial electroheating, safety requirements, protection of persons

ENGLISH VERSION

Safety in electroheat installations
Part 1: General requirements
(IEC 519-1:1984)

Sécurité dans les installations
électrothermiques
Première partie: Règles
générales
(CEI 519-1:1984)

Sicherheit in
Elektrowärmeanlagen
Teil 1: Allgemeine Anforderungen
(IEC 519-1:1984)

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This European Standard was approved by CENELEC on 1993-07-06. 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, 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

At the request of the 73rd Technical Board, HD 491.1 S1:1988 (IEC 519-1:1984) was submitted to the CENELEC voting procedure for conversion into a European Standard.

The text of the International Standard was approved by CENELEC as EN 60519-1 on 6 July 1993.

NOTE: Finland has no obligation to implement this European Standard.

The following dates were fixed:

- latest date of publication of an identical national standard (dop) 1994-03-01
- latest date of withdrawal of conflicting national standards (dow) -

Annexes designated "normative" are part of the body of the standard. In this standard, annex ZA is normative.

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ENDORSEMENT NOTICE

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The text of the International Standard IEC 519-1:1984 was approved by CENELEC as a European Standard without any modification.

ANNEX ZA (normative)

OTHER INTERNATIONAL PUBLICATIONS QUOTED IN THIS STANDARD
WITH THE REFERENCES OF THE RELEVANT EUROPEAN PUBLICATIONS

When the international publication has been modified by CENELEC common modifications, indicated by (mod), the relevant EN/HD applies.

IEC Publication	Date	Title	EN/HD	Date
50(826)	1982	International Electrotechnical Vocabulary (IEV) Chapter 826: Electrical installations of buildings	HD 384.2 S1	1986
50(841)	1983	Chapter 841: Industrial electroheating	-	-
110	1973	Recommendation for capacitors for inductive heat generating plants operating at frequencies between 40 and 24 000 Hz	HD 207 S1	1977
204-1, mod	1981	Safety of machinery - Electrical equipment of machines Part 1: General requirements	EN 60204-1	1985*
364	Series	Electrical installations of buildings	HD 384	Series
391	1972	Marking of insulated conductors https://standards.iteh.ai/catalog/standards/sist/17ff9a8-3536-4da9-b79a-6482492f615/sist-en-60519-1-1999	-	-
417	1973	Graphical symbols for use on equipment - Index, survey and compilation of the single sheets	HD 243 S10*	1993
446	1973	Identification of insulated and bare conductors by colours	HD 324 S1	1977

* EN 60204-1:1985 is superseded by EN 60204-1:1992 + corrigendum January 1993 which is based on IEC 204-1:1992, mod. Although the title of IEC 204-1:1992 indicates that its use is restricted to "industrial machines", the scope of EN 60204-1 has been broadened to include those machines covered by the EEC Directives relating to the safety of machinery. This change is reflected in the title of EN 60204-1.

HD 243 S10 includes supplements A:1974 to K:1991 to IEC 417

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE
NORME DE LA CEI

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC STANDARD

Publication 519-1

Deuxième édition — Second edition
1984

Sécurité dans les installations électrothermiques

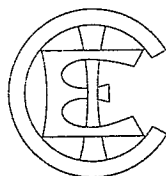
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Safety in electroheat installations

Part I: General requirements



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SAFETY IN ELECTROHEAT INSTALLATIONS

Part 1: General requirements

FOREWORD

- 1) The formal decisions or agreements of the IEC on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.
- 3) In order to promote international unification, the IEC expresses the wish that all National Committees should adopt the text of the IEC recommendation for their national rules in so far as normal conditions will permit. Any divergence between the IEC recommendation and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

PREFACE

This standard has been prepared by IEC Technical Committee No. 27: Industrial Electroheating Equipment.

This publication replaces the first edition published in 1975.

The text of this standard is based upon the following documents:

Six Months' Rule	Report on Voting	Two Months' Procedure	Report on Voting
27(CO)62	27(CO)71	27(CO)72	27(CO)76

Further information can be found in the relevant Reports on Voting indicated in the table above.

Other IEC publications quoted in this standard:

- Publications Nos. 50(826) (1982): International Electrotechnical Vocabulary (IEV), Chapter 826: Electrical Installations in Buildings.
- 50(841) (1983): Chapter 841: Industrial Electroheating.
- 110 (1973): Recommendation for Capacitors for Inductive Heat Generating Plants Operating at Frequencies between 40 and 24 000 Hz.
- 204-1 (1981): Electrical Equipment of Industrial Machines, Part I: General Requirements.
- 364: Electrical Installations of Buildings.
- 391 (1972): Marking of Insulated Conductors.
- 417 (1973): Graphical Symbols for Use on Equipment. Index, Survey and Compilation of the Single Sheets.
- 446 (1973): Identification of Insulated and Bare Conductors by Colours.

SAFETY IN ELECTROHEAT INSTALLATIONS

Part 1: General requirements

1. Scope

This standard is applicable to industrial electroheat installations and deals with the general safety requirements.

Where requirements given in this standard differ from those given in other IEC publications, an equivalent degree of safety shall be ensured.

1.1 The present requirements apply to industrial electroheat installations, such as:

- direct arc furnaces,
- submerged arc furnaces,
- equipment for arc heating (other than arc furnaces),
- electroslag remelting furnaces,
- plasma electroheat equipment,
- induction melting furnaces,
- equipment for induction heating,
- equipment for direct resistance heating,
- equipment for indirect resistance heating,
- equipment for infra-red radiation heating,
- equipment for dielectric heating (high-frequency),
- equipment with electron guns,
- microwave heating equipment,
- industrial laser equipment.

This standard is not applicable to electric cooking and heating equipment for household or welding purposes, nor does it apply to space heating of any kind.

1.2 This standard refers to the normal operation of industrial electroheat installations; it is also intended to ensure the safety of persons in the event of abnormal operation and when faults occur in electroheat installations. Inspection, commissioning, utilization and maintenance are dealt with in Clause 15.

1.3 This standard assumes that the installations are operated and/or maintained by skilled or instructed personnel according to Sub-clauses 3.4.1 and 3.4.2.

2. Object

The requirements for the safety of persons in electroheat installations are the subject, on the one hand, of general requirements applicable to electroheat installations as a whole and, on the other hand, of particular requirements applicable to each of them. This standard gives only general requirements.

These safety requirements concern the protection of persons against dangers of particularly electrical origin and also against certain dangers of non-electrical origin.

The safety requirements to be observed result from the joint application of general requirements and particular requirements concerning the industrial application of the electroheat involved. Where particular requirements exist they shall complete, modify or replace the general requirements. In the absence of particular requirements, the requirements to be complied with are those which are specified in this standard.

In addition, for electroheat installations of voltage bands 1 and 2 and frequencies up to 60 Hz, the following parts of IEC Publication 364: Electrical Installations of Buildings, shall apply:

- 364-3 Part 3: Assessment of General Characteristics. Chapter 31: Purposes, Supplies and Structures. Section 312 - Types of Distribution System.
- 364-4-41 Part 4: Protection for safety. Chapter 41: Protection against Electric Shock.
- 364-4-42 Chapter 42: Protection against Thermal Effects.
- 364-4-43 Chapter 43: Protection against Overcurrent.
- 364-4-46 Chapter 46: Isolation and Switching.
- 364-4-47 Chapter 47: Application of Protective Measures for Safety. Section 471 - Measures of Protection against Electric Shock.
- 364-4-473 Section 473: Measures of Protection against Overcurrent.
- 364-5-537 Part 5: Selection and Erection of Electrical Equipment. Chapter 53: Switchgear and Controlgear. Section 537 - Devices for Isolation and Switching.
- 364-5-54 Chapter 54: Earthing Arrangements and Protective Conductors.

For voltage band 3, specifications are under consideration.

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3. Definitions

For definitions of fundamental and general terms in the electroheating field, refer to IEC Publication 50: International Electrotechnical Vocabulary (IEV), Chapter 841: Industrial Electroheating and Chapter 826: Electric Installations of Buildings.

The following definitions apply for the purpose of this standard.

3.1 Terms used in electroheating

3.1.1 Electrical installation

Assembly of associated electrical equipment to fulfil a specific purpose and having certain coordinated characteristics.

3.1.2 Electroheat installation (IEV 841-01-06)

An installation composed of electroheat equipment and the electrical and mechanical equipment needed for its operation and use.

3.1.3 Electrical equipment

Any equipment used for such purposes as generation, conversion, transmission, distribution or utilization of electrical energy, such as rotating machines, transformers, switchgear, capacitors, measuring instruments, protective devices, wiring material and appliances.