
Safety in electroheat installations - Part 2: Particular requirements for resistance heating equipment (IEC 60519-2:1992)

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 60519-2:1999

<https://standards.iteh.ai/catalog/standards/sist/1e2b4d61-aa3a-43d2-883a-056c24a100ce/sist-en-60519-2-1999>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 60519-2:1999

<https://standards.iteh.ai/catalog/standards/sist/1e2b4d61-aa3a-43d2-883a-056c24a100ce/sist-en-60519-2-1999>

UDC 683.9-83:621.365.6:614.8

Descriptors: Resistance heating equipment, resistance furnaces,
electroheat installation, safety, resistance

ENGLISH VERSION

Safety in electroheat installations
Part 2: Particular requirements for resistance
heating equipment
(IEC 519-2:1992)

Sécurité dans les installations
électrothermiques
Partie 2: Règles particulières
pour les installations de
chauffage par résistance
(CEI 519-2:1992)

Sicherheit in
Elektrowärmeanlagen
Teil 2: Besondere Bestimmungen
für Einrichtungen mit
Widerstandserwärmung
(IEC 519-2:1992)

This European Standard was approved by CENELEC on 1993-09-22.
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.

[SIST EN 60519-2:1999](https://standards.iteh.ai/CENELEC/standards/sist/1e2b4d61-aa3a-43d2-883a-056c24a100cc/sist-en-60519-2-1999)

<https://standards.iteh.ai/CENELEC/standards/sist/1e2b4d61-aa3a-43d2-883a-056c24a100cc/sist-en-60519-2-1999>

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 CENELEC questionnaire procedure, performed for finding out whether or not the International Standard IEC 519-2:1992 could be accepted without textual changes, has shown that no common modifications were necessary for the acceptance as European Standard.

The reference document was submitted to the CENELEC members for formal vote and was approved by CENELEC as EN 60519-2 on 22 September 1993.

The following dates were fixed:

- latest date of publication of an identical national standard (dop) 1994-09-01
- latest date of withdrawal of conflicting national standards (dow) 1994-09-01

For products which have complied with the relevant national standard before 1994-09-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 1999-09-01.

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

ENDORSEMENT NOTICE

The text of the International Standard IEC 519-2:1992 was approved by CENELEC as a European Standard without any modification.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 60519-2:1999
<https://standards.iteh.ai/catalog/standards/sist/1e2b4d61-aa3a-43d2-883a-056c24a100ce/sist-en-60519-2-1999>

ANNEX ZA (normative)

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

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 European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

NOTE : 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(841)	1983	International Electrotechnical Vocabulary (IEV) - Chapter 841: Industrial electroheating	-	-
335-1	1991*	Safety of household and similar electrical appliances - Part 1: General requirements	-	-
364-4-41	1982*	Electrical installations of buildings Part 4: Protection for safety Chapter 41: Protection against electric shock (corrigendum January 1992)	-	-
364-4-42 (mod)	1980	Chapter 42: Protection against thermal effects	HD 384.4.42 S1 + A1	1985 1992
397	1972	Test methods for batch furnaces with metallic heating resistors	-	-
519-1	1984	Safety in electroheat installations Part 1: General requirements	EN 60519-1	1993
519-3	1988	Part 3: Particular requirements for induction and conduction heating and induction melting installations	HD 491.3 S1	1990

<https://standards.iteh.ai/catalog/standards/sist/1e2b4d61-aa3a-43d2-883a-056c24a100ce/sist-en-60519-2-1999>

* IEC 335-1:1976, mod., and its amendments are harmonized as EN 60335-1:1988 with amendments

IEC 364-4-41:1977 is harmonized as HD 384.4.41 S1:1977

IEC Publication -----	Date ----	Title -----	EN/HD -----	Date ----
519-4	1977	Part 4: Particular requirements for arc furnace installations	-	-
519-8	1983	Part 8: Particular requirements for electro-slag remelting furnaces	-	-
529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529	1991
536	1976	Classification of electrical and electronic equipment with regard to protection against electric shock	HD 366 S1	1977
990	1990	Methods of measurement of touch-current and protective conductor current (corrigendum August 1991)	-	-

iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN 60519-2:1999
<https://standards.iteh.ai/catalog/standards/sist/1e2b4d61-aa3a-43d2-883a-056c24a100ce/sist-en-60519-2-1999>

NORME
INTERNATIONALE
INTERNATIONAL
STANDARD

CEI
IEC
519-2

Deuxième édition
Second edition
1992-02

Sécurité dans les installations électrothermiques

Partie 2:

Règles particulières pour les installations
de chauffage par résistance

Safety in electroheat installations

Part 2:

Particular requirements for resistance
heating equipment

iTeh STANDARD PREVIEW
(standards.iteh.ai)

<https://standards.iteh.ai/catalog/standards/sist/1e2b4d61-2a3a-43d2-883a-056c24a100ce/sist-en-60519-2-1999>

© CEI 1992 — Droits de reproduction réservés — Copyright — all rights reserved

Aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'éditeur.

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

Bureau Central de la Commission Electrotechnique Internationale 3, rue de Varembe Genève, Suisse



Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE

N

*Pour prix, voir catalogue en vigueur
For price, see current catalogue*

CONTENTS

	Page
FOREWORD	5
Clause	
1 Scope and object	7
2 Normative references	9
3 Definitions	11
4 Classification of electroheat equipment according to voltage bands	13
5 Classification of electroheat equipment according to frequency bands	15
6 General requirements	15
7 Prohibition of the use of earth as part of an active circuit	17
8 Marking, labelling and circuit diagrams	17
9 Protection against overcurrent	19
10 Isolation and switching	19
11 Connection to the supply network and internal connections	19
12 Protection against electric shock	19
13 Protection against thermal influences	23
14 Risk of fire and danger of explosion	27
15 Inspection, commissioning, utilization and maintenance of electroheat installations	27

SIST EN 60519-2:1999

<https://standards.iteh.ai/catalog/standards/sist/1e2b4d61-aa3a-43d2-883a-056c24a100ce/sist-en-60519-2-1999>

INTERNATIONAL ELECTROTECHNICAL COMMISSION

SAFETY IN ELECTROHEAT INSTALLATIONS

Part 2: Particular requirements for resistance heating equipment

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 national 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.

This part of International Standard IEC 519 has been prepared by IEC Technical Committee No. 27: Industrial electroheating equipment.

This second edition of IEC 519-2 replaces the first edition published in 1975.

The text of this part is based on the following documents:

Six Months' Rule	Report on Voting	Amendment to the Six Months' Rule	Report on Voting
27(CO)93	27(CO)98	27(CO)99	27(CO)105

Full information on the voting for the approval of this part can be found in the Voting Reports indicated in the above table.

SIST EN 60519-2:1999

<https://standards.iteh.ai/catalog/standards/sist/1e2b4d61-aa3a-43d2-883a-056c24a100ce/sist-en-60519-2-1999>

SAFETY IN ELECTROHEAT INSTALLATIONS

Part 2: Particular requirements for resistance heating equipment

1 Scope and object

This part of IEC 519 is applicable to indirect resistance heating equipment and direct resistance heating equipment respectively specified in 1.1 and 1.2.

Its object is the standardization of safety requirements for the resistance heating equipments indicated below.

This part shall be read in conjunction with IEC 519-1 which it supplements.

1.1 *Indirect resistance heating equipment*

These particular requirements apply to equipment for indirect resistance heating of a charge, such equipment being energized with d.c. voltage or with single-phase or poly-phase a.c. voltage of frequency up to 60 Hz.

Heat generation is effected by current flow in:

- solid metallic heating conductors;
- solid non-metallic heating conductors;
- radiant tubes and immersion heaters.

Examples of furnaces and ovens in general use include:

- discontinuous furnaces such as batch-type furnaces, muffle furnaces, pot-type furnaces (crucible furnaces), pit-type furnaces, bell-type furnaces, bogie-hearth furnaces, fluidized-bed furnaces, immersion heater metal baths;
- continuous furnaces with continuous or discontinuous charge conveyors, e.g. roller-hearth furnaces, pusher furnaces, walking-beam furnaces, rotary-retort furnaces, rotary-hearth furnaces, tunnel furnaces (kilns), continuous muffle furnaces.

Furnaces and equipment in general use also include:

- equipment for heating solids, liquids or gases;
- equipment for melting and holding;
- individual heating-element assemblies (movable or fixed heaters).

Furnaces and equipment where particular hazards are likely to occur include:

- nitrite bath furnaces;
- furnaces and equipment where an explosive atmosphere is likely to occur inside the furnace during heat treatment (under consideration);

- furnaces and equipment with protective gas and/or reaction gas atmosphere (under consideration);

NOTE - These requirements do not apply to infrared heating elements or surface heating systems, the latter are dealt with in IEC 240-1 (in preparation) and 519-10 (in preparation).

1.2 Direct resistance heating equipment

These particular requirements also apply to equipment for direct resistance heating by means of electrodes, by which a charge or a heat transfer fluid is heated. Such equipment includes, for example:

- salt-bath electrode furnaces;
- glass-melting furnaces;
- furnaces for graphitising and the production of silicon carbide.

The stated requirements do not apply to equipment for direct resistance heating, where, owing to the technology involved, IEC 519-3, IEC 519-4 and IEC 519-8 apply.

Moreover, they do not apply to electrode-steam-boiler instantaneous water heaters and electrode pressure vessels.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 519. At the time of publication the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 519 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 50(841): 1983, *International Electrotechnical Vocabulary (IEV) – Chapter 841: Industrial electroheating.*

IEC 335-1: 1991, *Safety of household and similar electrical appliances – Part 1: General requirements.*

IEC 364-4-41: 1982, *Electrical installations of buildings – Part 4: Protection for safety – Chapter 41: Protection against electric shock.*

IEC 364-4-42: 1980, *Electrical installations of buildings – Part 4: Protection for safety – Chapter 42: Protection against thermal effects.*

IEC 397: 1972, *Test methods for batch furnaces with metallic heating resistors.*

IEC 519-1: 1984, *Safety in electroheat installations – Part 1: General requirements.*

IEC 519-3: 1988, *Safety in electroheat installations – Part 3: Particular requirements for induction and conduction heating and induction melting installations.*