

Safety in electroheat installations —

Part 4: Particular requirements for arc furnace installations

ICS 25.180.10

National foreword

This British Standard is the UK implementation of EN 60519-4:2006. It is identical with IEC 60519-4:2006, incorporating corrigendum December 2008. It supersedes BS EN 60519-4:1997 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PEL/27, Electroheating.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

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Date	Comments
31 August 2009	Implementation of IEC corrigendum December 2008. Deletion of Subclause 4.2.2

English version

**Safety in electroheat installations
Part 4: Particular requirements
for arc furnace installations
(IEC 60519-4:2006)**

Sécurité dans les installations
électrothermiques
Partie 4: Exigences particulières
pour les installations de fours à arc
(CEI 60519-4:2006)

Sicherheit in Elektrowärmeanlagen
Teil 4: Besondere Bestimmungen
für Lichtbogenofenanlagen
(IEC 60519-4:2006)

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CENELEC

European Committee for Electrotechnical Standardization
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Europäisches Komitee für Elektrotechnische Normung

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Foreword

The text of document 27/528/FDIS, future edition 3 of IEC 60519-4, prepared by IEC TC 27, Industrial electroheating equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60519-4 on 2006-09-01.

This European Standard supersedes EN 60519-4:1997 + A1:2000.

It includes the following significant changes with respect to EN 60519-4:1997:

- the structure has been adjusted to that of EN 60519-1:2003;
- the classification takes into account the special definition of "band 2" for arc furnaces and the possibility of band 3 equipment;
- additional provisions concerning the impact of electromagnetic effects have been introduced (in 6.4).

This part of EN 60519 shall be read in conjunction with EN 60519-1:2003. It is intended to modify, replace or make additions to EN 60519-1 for particular requirements concerning arc furnace installations.

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) | 2007-06-01 |
| – latest date by which the national standards conflicting
with the EN have to be withdrawn | (dow) | 2009-09-01 |

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60519-4:2006 was approved by CENELEC as a European Standard without any modification.

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SAFETY IN ELECTROHEAT INSTALLATIONS –

Part 4: Particular requirements for arc furnace installations

1 Scope

This part of IEC 60519 is applicable to electroheat installations such as:

- furnaces for direct arc heating such as direct arc furnaces, submerged arc furnaces, ladle arc heating furnaces;
- furnaces for indirect arc heating.

NOTE When the electrodes of an arc furnace deliver a direct current, the arc furnace is called "d.c. arc furnace" (IEV 841-26-06).

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050-841:2004, *International Electrotechnical Vocabulary (IEV) – Part 841: Industrial electroheat*

IEC 60073:2002, *Basic and safety principles for man-machine interface, marking and identification – Coding principles for indicators and actuators*

IEC 60204-1:2005, *Safety of machinery – Electrical equipment of machines – Part 1: General requirements*

IEC 60364-4-41:2005, *Low-voltage electrical installations – Part 4-41: Protection for safety – Protection against electric shock*

IEC 60364-4-43:2001, *Electrical installations of buildings – Part 4-43: Protection for safety – Protection against overcurrent*

IEC 60479-1:2005, *Effects of current on human beings and livestock – Part 1: General aspects*

IEC 60519-1:2003, *Safety in electroheat installations – Part 1: General requirements*

CISPR 11, *Industrial, scientific and medical (ISM) radio-frequency equipment – Electromagnetic disturbance characteristics – Limits and methods of measurement*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60519-1 and IEC 60050-841 apply.

4 Classification of electroheat equipment according to voltage bands

The requirements of Clause 4 of IEC 60519-1 apply, except as follows:

4.1 Addition:

The voltage band is determined by the line-to-line open-circuit rated supply voltage to the electrodes.

5 Classification of electroheat equipment according to frequency bands

The requirements of Clause 5 of IEC 60519-1 apply, except as follows:

5.1 Addition:

As far as electromagnetic disturbance characteristics are concerned, d.c. is classified as zero frequency.

6 General requirements

The requirements of Clause 6 of IEC 60519-1 and Annex B of this part of IEC 60519 apply, except as follows:

6.1.1 Replacement:

Replace the third paragraph by the following:

For voltage band 2 exceeding 1 000 V a.c. and voltage band 3 not exceeding 3 600 V a.c. or 5 000 V d.c., insulation distances along surfaces and/or in air shall take into account the ionization phenomena which may occur, at high temperatures in high electric fields, in case of metallic vapour emission, splashes, pollution, etc.