



SLOVENSKI STANDARD
SIST EN 60519-4:1999/A1:2001
01-september-2001

Safety in electroheat installations - Part 4: Particular requirements for arc furnace installations

Safety in electroheat installations -- Part 4: Particular requirements for arc furnace installations

Sicherheit in Elektrowärmeanlagen -- Teil 4: Besondere Bestimmungen für Lichtbogenofenanlagen

Sécurité dans les installations électrothermiques -- Partie 4: Règles particulières pour les installations des fours à arc

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Ta slovenski standard je istoveten z: EN 60519-4:1997/A1:2000

ICS:

25.180.10 Ò|^\dã}^Á^ ä Electric furnaces

SIST EN 60519-4:1999/A1:2001 **en**

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60519-4/A1

April 2000

ICS 25.180.10

English version

Safety in electroheat installations
Part 4: Particular requirements for arc furnace installations
(IEC 60519-4:1995/A1:2000)

Sécurité dans les installations
électrothermiques
Partie 4: Règles particulières
pour les installations des fours à arc
(CEI 60519-4:1995/A1:2000)

Sicherheit in Elektrowärmeanlagen
Teil 4: Besondere Bestimmungen
für Lichtbogenofenanlagen
(IEC 60519-4:1995/A1:2000)

This amendment A1 modifies the European Standard EN 60519-4:1997; it was approved by CENELEC on 2000-02-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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, Czech Republic, 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

The text of document 27/235/FDIS, future amendment 1 to IEC 60519-4:1995, prepared by IEC TC 27, Industrial electroheating equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as amendment A1 to EN 60519-4:1997 on 2000-02-01.

The following dates were fixed:

- latest date by which the amendment has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2000-11-01
- latest date by which the national standards conflicting
with the amendment have to be withdrawn (dow) 2003-02-01

Endorsement notice

The text of amendment 1:2000 to the International Standard IEC 60519-4:1995 was approved by CENELEC as an amendment to the European Standard without any modification.

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**NORME
INTERNATIONALE
INTERNATIONAL
STANDARD**

**CEI
IEC**

60519-4

1995

AMENDEMENT 1
AMENDMENT 1
2000-01

Amendement 1

Sécurité dans les installations électrothermiques –

**Partie 4:
Règles particulières pour les installations des
fours à arc**

Amendment 1

Safety in electroheat installations –

**Part 4:
Particular requirements for arc furnace
installations**

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Commission Electrotechnique Internationale
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FOREWORD

This amendment has been prepared by IEC technical committee 27: Industrial electroheating equipment.

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

FDIS	Report on voting
27/235/FDIS	27/240/RVD

Full information on the voting for the approval of this amendment can be found in the report on voting indicated in the above table.

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4 Classification of electroheat equipment according to voltage bands

Add, after subclause 4.1, the following new text:

4.2.2 Addition:

Direct arc furnaces shall be classified under voltage band 2, even if their rated voltage exceeds 1 000 V a.c. (1 500 V d.c.) but does not exceed 1 500 V a.c. (2 100 V d.c.).

This is under the precondition that:

- a) the electrical power installations with a rated voltage above 1 000 V a.c. (1 500 V d.c.), which are located in enclosed operating premises, have been designed in accordance with the relevant standards;
- b) the envisaged measures and auxiliary equipment according to 15.3 fulfil the requirements of the actual nominal voltage;
- c) the insulation of the high current conductors to the ground fulfil the minimum requirements of the relevant standards.

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6 General requirements

Replace the existing subclause 6.2.3 by the following new text:

6.2.3 Replacement:

Precautions shall be taken to avoid any hazard to persons due to transient voltages which might occur during normal operation in circuits comprising transformers, inductors, rectifiers and capacitors, etc. The equipment shall be designed to suppress and/or withstand the very high voltages which are normal in the operation of an arc furnace.

Add, after subclause 6.2.3, the following new text:

6.2.6 Replacement:

The electrical equipment shall be so arranged that it does not deteriorate in normal operation due to physical and chemical effects, such as those due to heat from the environment, spatter of melted materials and salts, humidity, oil, shocks, friction or electromagnetic forces created by the operating current if necessary, suitable structural measures shall be taken for example by providing gutters, protective channels and similar means.

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Add, after subclause 6.3.2, the following new text:

6.4 Replacement:

For d.c. arc furnaces, measures shall be taken to avoid the influence of strong d.c. magnetic field on some electrical devices, for example video display units, control units, electromagnetic valves, sensors; the magnetisation of some steel-made parts shall be considered.

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7 Prohibition of the use of earth as part of an active circuit

Replace the text of clause 7 by the following new text:

This clause applies except as follows:

7.2 Addition:

The tilt tracks shall not be used as return circuits.

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9 Protection against overcurrent and overvoltages

Add on page 13, after subclause 9.2, the following new subclause 9.3:

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9.3 Protection against overcurrent shall be provided under additional consideration of the regulations described in 4.2.2.

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10 Isolation and switching

Replace existing subclause 10.6 by the following new subclause:

10.6 Before access is gained to the top of furnace or before working in the vicinity of the electrodes, including the bottom electrodes of a d.c. furnace or other conductive parts is allowed, an isolating and/or earthing procedure as listed in annex A shall be carried out. Means shall be provided to prevent inadvertent re-establishment of the circuit.

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12 Protection against electric shock

This clause applies except as follows:

12.1 *Addition:*

Add, at the end of subclause 12.1, the following new paragraph:

Protection against electric shock shall be provided under the conditions described in 4.2.2.

12.2 becomes 12.2.1

Add the following new subclauses:

12.2.2 Direct contacts with live parts shall not be permissible. However certain operating procedures agreed with the local authorities may allow contacts with live parts with the use of special equipment and tools designed for this purpose.

12.2.3 To ensure safe operation with a view to indirect contacts, solely those requirements of IEC 60364-4-41 and 60364-4-47 relating to IT earthing systems are applicable.

15 Inspection, commissioning and maintenance of arc furnace installations

15.3.4 *Add, after last dash, the following new paragraph:*

For the selection of tinted goggles at d.c. arc furnaces, the higher intensity of the d.c. arc has to be considered.

15.3.5 *Add, after the existing sentence, the following new paragraph:*

Access of current-carrying parts of the furnace, including the bottom electrode system of a d.c. furnace shall not be permitted except to specially instructed personnel.

15.3.9 *Add, after the last existing paragraph, the following new paragraph:*

Alternative adequate precautions for d.c. arc furnaces are under consideration.