
**Grafitne elektrode za električne obločne peči – Mere in označbe (IEC
60239:2005)**

Graphite electrodes for electric arc furnaces – Dimensions and designation (IEC
60239:2005)

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EUROPEAN STANDARD

EN 60239

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2005

ICS 25.180.10

Supersedes EN 60239:1997

English version

**Graphite electrodes for electric arc furnaces –
Dimensions and designation
(IEC 60239:2005)**

Electrodes en graphite pour les fours
à arc –
Dimensions et dénomination
(CEI 60239:2005)

Graphitelektroden für Lichtbogenöfen -
Maße und Kennzeichnung
(IEC 60239:2005)

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This European Standard was approved by CENELEC on 2005-07-01. 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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, 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 27/464/FDIS, future edition 4 of IEC 60239, prepared by IEC TC 27, Industrial electroheating equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60239 on 2005-07-01.

This European Standard supersedes EN 60239:1997.

Significant technical changes with respect to EN 60239:1997 are as follows:

- addition of 750 mm nominal diameter electrodes;
- revision of electrode diameter and length tolerances;
- revision of nominal lengths and diameters;
- introduction of socket and pin tolerances;
- revision of Annex A on male-female electrodes;
- addition of Annex B on handling and jointing.

This new edition also aims at a better compatibility between EN 60239 and other technical standards that cover the same subject, as well as better compliance with standards for figures, tables and symbols – in that respect, and in addition to the content, the format and the title of this standard have been modified.

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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) | 2006-04-01 |
| – latest date by which the national standards conflicting with the EN have to be withdrawn | (dow) | 2008-07-01 |

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60239:2005 was approved by CENELEC as a European Standard without any modification.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

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

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-841	2004	International electrotechnical vocabulary Part 841: Industrial electroheat	-	-

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CEI
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60239

Quatrième édition
Fourth edition
2005-06

**Electrodes en graphite pour les fours à arc –
Dimensions et dénomination**

**Graphite electrodes for electric arc furnaces –
Dimensions and designation**

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International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**GRAPHITE ELECTRODES FOR ELECTRIC ARC FURNACES –
DIMENSIONS AND DESIGNATION**

FOREWORD

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International Standard IEC 60239 has been prepared by IEC technical committee 27: Industrial electroheating equipment.

This fourth edition cancels and replaces the third edition published in 1997 and constitutes a technical revision.

Significant technical changes with respect to the previous edition are as follows:

- addition of 750 mm nominal diameter electrodes;
- revision of electrode diameter and length tolerances;
- revision of nominal lengths and diameters;
- introduction of socket and pin tolerances;
- revision of Annex A on male-female electrodes;
- addition of Annex B on handling and jointing.

This fourth edition also aims at a better compatibility between IEC 60239 and other technical standards that cover the same subject, as well as better compliance with standards for figures, tables and symbols – in that respect, and in addition to the content, the format and the title of this International Standard have been modified.

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

FDIS	Report on voting
27/464/FDIS	27/475/RVD

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

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GRAPHITE ELECTRODES FOR ELECTRIC ARC FURNACES – DIMENSIONS AND DESIGNATION

1 Scope and object

This International Standard specifies the dimensions of turned and threaded cylindrical graphite arc furnace electrodes and graphite electrode pins for use as full graphite electrode columns on arc furnaces.

This standard covers

- the dimensions and tolerances on length and diameter of electrodes;
- the dimensions, tolerances and thread details for electrode sockets and pins of tapered shape, used with the electrodes.

The standardization of the above dimensional features is essential for the interchangeability of electrodes from different sources, and is a minimum standard.

NOTE 1 The standardization ensures that any supplier's electrode at ambient temperature can accept any other supplier's pin of appropriate dimensions.

However, the variety of raw materials and production techniques may lead to different thermal behaviour of finished products. It is, therefore recommended that electrodes and pins from different sources should not be mixed in use.

Annex A contains information on male-female electrodes used in some countries.

Annex B contains recommendations for electrode handling and jointing procedures.

The metric system is adopted as the standard of measurement.

NOTE 2 The use of decimals has been deliberately limited to two digits after the decimal point.

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*