



SLOVENSKI STANDARD SIST EN 60079-14:1998

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Electrical apparatus for explosive gas atmospheres -- Part 14: Electrical installations in hazardous areas (other than mines)

Elektrische Betriebsmittel für gasexplosionsgefährdete Bereiche -- Teil 14: Errichtung elektrischer Anlagen in explosionsgefährdeten Bereichen (ausgenommen Grubenbaue)
(standards.iteh.ai)

Matériel électrique pour atmosphères explosives gazeuses -- Partie 14: Installations électriques dans les emplacements dangereux (autres que les mines)

Ta slovenski standard je istoveten z: EN 60079-14:1997

ICS:

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EUROPEAN STANDARD

EN 60079-14

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 1997

ICS 29.260.20

English version

Electrical apparatus for explosive gas atmospheres
Part 14: Electrical installations in hazardous areas
(other than mines)
(IEC 60079-14:1996)

Matériel électrique pour atmosphères
 explosives gazeuses
 Partie 14: Installations électriques
 dans les emplacements dangereux
 (autres que les mines)
 (CEI 60079-14:1996)

Elektrische Betriebsmittel für
 gasexplosionsgefährdete Bereiche
 Teil 14: Errichtung elektrischer Anlagen
 in explosionsgefährdeten Bereichen
 (ausgenommen Grubenbaue)
 (IEC 60079-14:1996)

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This European Standard was approved by CENELEC on 1997-03-11. 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

The text of document 31J/47/FDIS, future edition 2 of IEC 60079-14, prepared by SC 31J, Classification of hazardous areas and installation requirements, of IEC TC 31, Electrical apparatus for explosive atmospheres, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60079-14 on 1997-03-11.

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) 1998-03-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 1999-12-01

Annexes designated "normative" are part of the body of the standard.

Annexes designated "informative" are given for information only.

In this standard, annexes A and ZA are normative and annex B is informative.

Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 60079-14:1996 was approved by CENELEC as a European Standard without any modification.

[SIST EN 60079-14:1998](#)

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Annex ZA (normative)

Normative references to international publications
with their corresponding 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 (including amendments).

NOTE 1: When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2: Where a standard cited below belongs to the EN 50000 series, this European Standard applies instead of the relevant International Standard.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60034-5	1991	Rotating electrical machines Part 5: Classification of degrees of protection provided by enclosures of rotating electrical machines (IP code)	-	-
IEC 60050(426)	1990	International Electrotechnical Vocabulary (IEV) Chapter 426: Electrical apparatus for explosive atmospheres	-	-
IEC 60060-1	1989	High-voltage test techniques Part 1: General definitions and test requirements	HD 588.1 S1 ¹⁾	1991
IEC 60079-0	1983	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements	EN 50014	1992
A1	1987			
A2	1991			
IEC 60079-1	1990	Part 1: Construction and verification test of flameproof enclosures of electrical apparatus	EN 50018	1994
IEC 60079-2	1983	Part 2: Electrical apparatus - Type of protection "p"	EN 50016	1995
IEC 60079-5	1967	Part 5: Sand-filled apparatus	EN 50017	1994
IEC 60079-6	1995	Part 6: Oil-immersion "o"	EN 50015	1994
IEC 60079-7	1990	Part 7: Increased safety "e"	EN 50019	1994
IEC 60079-10	1995	Part 10: Classification of hazardous areas	EN 60079-10	1996

1) HD 588.1 S1 includes corrigendum March 1990 to IEC 60060-1.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60079-11	1991	Part 11: Intrinsic safety "i"	EN 50020	1994
IEC 60079-15	1987	Part 15: Electrical apparatus with type of protection "n"	-	-
IEC 60079-17	1996	Part 17: Inspection and maintenance of electrical installations in hazardous areas (other than mines)	EN 60079-17	1997
IEC 60079-18	1992	Part 18: Encapsulation "m"	EN 50028	1987
IEC 60332-1	1993 ²⁾	Tests on electric cables under fire conditions Part 1: Test on a single vertical insulated wire or cable	-	-
IEC 60364-4-41 (mod)	1992	Electrical installations of buildings Part 4: Protection for safety Chapter 41: Protection against electric shock	HD 384.4.41 S2	1996
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May	1991 1993
IEC 60614-2-1	1982	Specification for conduits for electrical installations Part 2: Particular specifications for conduits Section 1: Metal conduits	-	-
A1	1993		-	-
IEC 60614-2-5	1992	Section 5: Flexible conduits	-	-
IEC 60742 (mod)	1983	Isolating transformers and safety isolating transformers - Requirements	EN 60742 ³⁾	1995
IEC 60755	1983	General requirements for residual current operated protective devices	-	-

2) IEC 60332-1:1979 is harmonized as HD 405.1 S1:1983.

3) EN 60742 includes A1:1992 to IEC 60742.

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Deuxième édition
Second edition
1996-12

Matériel électrique pour atmosphères
explosives gazeuses –

Partie 14:
Installations électriques dans les emplacements
dangereux (autres que les mines)

(standards.iteh.ai)

Electrical apparatus for explosive
gas atmospheres –

Part 14:
Electrical installations in hazardous areas
(other than mines)

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International Electrotechnical Commission
Международная Электротехническая Комиссия

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For price, see current catalogue

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Annexes

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTRICAL APPARATUS FOR EXPLOSIVE GAS ATMOSPHERES –**Part 14: Electrical installations in hazardous areas
(other than mines)**

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 79-14 has been prepared by sub-committee 31J: Classification of hazardous areas and installation requirements, of IEC technical committee 31: Electrical apparatus for explosive atmospheres.

This second edition cancels and replaces the first edition published in 1984, and constitutes a technical revision.

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

FDIS	Report on voting
31J/47/FDIS	31J/50/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 standard is to be read in conjunction with IEC 79-0 and with the standards for the specific types of protection listed in the scope.

Annex A forms an integral part of this standard.

Annex B is for information only.

INTRODUCTION

When electrical apparatus is to be installed in areas where dangerous concentrations and quantities of flammable gases, vapours, mists, ignitable fibres or dusts may be present in the atmosphere, protective measures are applied to reduce the likelihood of explosion due to ignition by arcs, sparks or hot surfaces, produced either in normal operation or under specified fault conditions.

This part of IEC 79 is supplementary to other relevant IEC standards, for example IEC 364 as regards electrical installation requirements, and also refers to IEC 79-0 and its associated standards for the construction, testing and marking requirements of suitable electrical apparatus.

By careful design of the electrical installation, it is frequently possible to locate much of the electrical apparatus in less hazardous or non-hazardous areas.

For an explosion to occur, an explosive atmosphere and a source of ignition need to co-exist. Protective measures aim to reduce to an acceptable level the likelihood that the electrical installation could become a source of ignition.

It has been found practical to classify hazardous areas into zones according to the likelihood of an explosive gas atmosphere being present (see IEC 79-10). Such classification allows appropriate types of protection to be specified for each zone.

Several types of protection are now available for electrical apparatus in hazardous areas (see IEC 79-0), and this standard gives the specific requirements for design, selection and erection of electrical installations in explosive atmospheres.

This standard is based on the assumption that electrical apparatus is correctly installed, tested, maintained and used in accordance with its specified characteristics.

In any industrial installation, irrespective of size, there may be numerous sources of ignition apart from those associated with electrical apparatus. Precautions may be necessary to ensure safety, but guidance on this aspect is outside the scope of this standard.

ELECTRICAL APPARATUS FOR EXPLOSIVE GAS ATMOSPHERES –

Part 14: Electrical installations in hazardous areas (other than mines)

1 Scope and object

This part of IEC 79 contains the specific requirements for the design, selection and erection of electrical installations in explosive gas atmospheres.

These requirements are in addition to the requirements for installations in non-hazardous areas.

This standard applies to all electrical equipment and installations in hazardous areas whether permanent, temporary, portable, transportable or hand-held.

It applies to installations at all voltages.

This standard does not apply to

- electrical installations in mines susceptible to firedamp;

NOTE – This standard may apply to electrical installations in mines where explosive gas atmospheres other than firedamp may be formed and to electrical installations in the surface installation of mines.

- electrical installations in areas where the hazard is due to ignitable dusts or fibres;
- inherently explosive situations, for example explosives manufacturing and processing;
- rooms used for medical purposes.

2 Normative references

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The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 79. 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 79 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 34-5: 1991, *Rotating electrical machines – Part 5: Classification of degrees of protection provided by enclosures of rotating electrical machines (IP code)*

IEC 50(426): 1990, *International Electrotechnical Vocabulary (IEV) – Chapter 426: Electrical apparatus for explosive atmospheres*

IEC 60-1: 1989, *High-voltage test techniques – Part 1: General definitions and test requirements*

IEC 79-0: 1983, *Electrical apparatus for explosive gas atmospheres – Part 0: General requirements*

Amendment 1 (1987)

Amendment 2 (1991)

IEC 79-1: 1990, *Electrical apparatus for explosive gas atmospheres – Part 1: Construction and verification test of flameproof enclosures of electrical apparatus*

IEC 79-2: 1983, *Electrical apparatus for explosive gas atmospheres – Part 2: Electrical apparatus – type of protection "p"*

IEC 79-5: 1967, *Electrical apparatus for explosive gas atmospheres – Part 5: Sand-filled apparatus*

IEC 79-6: 1995, *Electrical apparatus for explosive gas atmospheres – Part 6: Oil-immersion "o"*

IEC 79-7: 1990, *Electrical apparatus for explosive gas atmospheres – Part 7: Increased safety "e"*

IEC 79-10: 1995, *Electrical apparatus for explosive gas atmospheres – Part 10: Classification of hazardous areas*

IEC 79-11: 1991, *Electrical apparatus for explosive gas atmospheres – Part 11: Intrinsic safety "i"*

IEC 79-15: 1987, *Electrical apparatus for explosive gas atmospheres – Part 15: Electrical apparatus with type of protection "n"*

IEC/FDIS 79-17, *Electrical apparatus for explosive gas atmospheres – Part 17: Inspection and maintenance of electrical installations in hazardous areas (other than mines)¹⁾*

IEC 79-18: 1992, *Electrical apparatus for explosive gas atmospheres – Part 18: Encapsulation "m"*

IEC 332-1: 1993, *Tests on electric cables under fire conditions – Part 1: Test on a single vertical insulated wire or cable*

IEC 364-4-41: 1992, *Electrical installations of buildings – Part 4: Protection for safety – Chapter 41: Protection against electric shock*

IEC 529: 1989, *Degrees of protection provided by enclosure (IP code)*

IEC 614-2-1: 1982, *Specification for conduits for electrical installations – Part 2: Particular specifications for conduits – Section one: Metal conduits*
Amendment 1 (1993)

IEC 614-2-5: 1992, *Specification for conduits for electrical installations – Part 2: Particular specifications for conduits – Section 5: Flexible conduits*

IEC 742: 1983, *Isolating transformers and safety isolating transformers – Requirements*

IEC 755: 1983, *General requirements for residual current operated protective devices*

3 Definitions and terms (see IEC 50(426))

For the purpose of this part of IEC 79, the following definitions apply.

3.1 explosive gas atmosphere: Mixture with air, under atmospheric conditions, of flammable substances in the form of gas, vapour or mist, in which after ignition, combustion spreads throughout the unconsumed mixture.

¹⁾ At present at the stage of final draft international standard.