SLOVENSKI STANDARD

SIST EN 62013-1:2002

prva izdaja
september 2002

Rudarske naglavne svetilke za uporabo v rudnikih, kjer je možen pojav eksplozivnih plinov - 1. del: Splošne zahteve - Konstrukcija in preskušanje zaradi nevarnosti eksplozije (IEC 62013-1:1999; spremenjen)

Caplights for use in mines susceptible to firedamp - Part 1: General requirements - Construction and testing in relation to the risk of explosion

ICS 29.260.20; 73.100.20

Referenčna številka
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EUROPEAN STANDARD **EN 62013-1**

NORME EUROPÉENNE

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English version

Caplights for use in mines susceptible to firedamp Part 1: General requirements - Construction and testing in relation to the risk of explosion

(IEC 62013-1:1999, modified)

Lampes-chapeaux utilisables dans les mines grisouteuses
Partie 1: Règles générales - Construction et essais en relation avec le risque d'explosion
(CEI 62013-1:1999, modifiée)

Kopfleuchten für die Verwendung in schlagwettergefährdeten Grubenbauen
Teil 1: Allgemeine Anforderungen - Konstruktion und Prüfung in Relation zum Explosionsrisiko
(IEC 62013-1:1999, modifiziert)

This European Standard was approved by CENELEC on 2001-06-01. 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, 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

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Foreword

The text of the International Standard IEC 62013-1:1999, prepared by IEC TC 31, Electrical apparatus for explosive atmospheres, together with the common modifications prepared by the SC 31-4, Increased safety "e", of Technical Committee CENELEC TC 31, Electrical apparatus for explosive atmospheres was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 62013-1 on 2001-06-01.

This European Standard was prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers the essential safety requirements of the EC Directive 94/9/EC.

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) 2002-10-01

- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2004-08-01

Annexes designated "normative" are part of the body of the standard.
Annexes designated "informative" are given for information only.
In this standard, annex ZA is normative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62013-1:1999 was approved by CENELEC as a European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS

***Add*:**

Introduction

In the absence of any suitable category M1 caplight, caplights constructed to this standard may be used for short periods of time in mines which have become temporarily endangered by an explosive atmosphere of firedamp without having to de-energize them.

1 Scope

Replace the whole text by:

1 Scope

This part of EN 62013 specifies requirements for the construction and testing of caplights for use in mines susceptible to firedamp (Group I - electrical apparatus for explosive gas atmospheres as defined in EN 50014). It deals only with the risk of the caplight becoming a source of ignition. The requirements of EN 50014 do not apply unless specified.

This standard covers category M2 caplights.

Where the caplight is to meet the requirements of EC Directive 94/9, subclause 5.1.1 and clauses 27 and 28 of EN 50014:1997 additionally apply.

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

Publication	Year	Title	EN/HD	Year
		Electrical apparatus for potentially explosive atmospheres - General requirements	EN 50014	1997
IEC 60050-845	1987	International Electrotechnical Vocabulary (IEV) - Chapter 845: Lighting	-	-
IEC 60079-7	1990	Electrical apparatus for explosive gas atmospheres Part 7: Increased safety "e"	-	-
IEC 60079-11	1999	Part 11: Intrinsic safety "i"	-	-
IEC 60079-20	1996	Part 20: Data for flammable gases and vapours, relating to the use of electrical apparatus	-	-
IEC 60112	1979	Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions	HD 214 S2	1980
IEC 60127-2 + corr. March	1989 1990	Miniature fuses - Part 2: Cartridge fuse-links	EN 60127-2	1991
IEC 60332-1	1993	Tests on electric cables under fire conditions - Part 1: Test on a single vertical insulated wire or cable	-	-
IEC 60455-1	1998	Resin based reactive compounds used for electrical insulation - Part 1: Definitions and general requirements	EN 60455-1	1998
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May	1991 1993

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Lampes-chapeaux utilisables dans les mines grisouteuses –

Partie 1: Règles générales – Construction et essais en relation avec le risque d'explosion

Caplights for use in mines susceptible to firedamp –

Part 1: General requirements – Construction and testing in relation to the risk of explosion

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Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

CAPLIGHTS FOR USE IN MINES SUSCEPTIBLE TO FIREDAMP –

Part 1: General requirements – Construction and testing in relation to the risk of explosion

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 specifications, 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 62013-1 has been prepared by IEC technical committee 31: Electrical apparatus for explosive atmospheres.

This bilingual version (2002-02) replaces the English version.

It is based on a combination of the protective concepts listed in IEC 60079, for example Increased Safety “e” and Intrinsic Safety “i” as well as incorporating operating experience gained over many years in the field of gas ignition prevention.

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

FDIS	Report on voting
31/294/FDIS	31/311/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 3.

The committee has decided that this publication remains unchanged until 2003. At this date, the publication will be

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

CAPLIGHTS FOR USE IN MINES SUSCEPTIBLE TO FIREDAMP –

Part 1: General requirements – Construction and testing in relation to the risk of explosion

1 Scope

This part of IEC 62013 specifies requirements for the construction and testing of caplights for use in mines susceptible to firedamp (Group I – electrical apparatus for explosive gas atmospheres as defined in IEC 60079-0). It deals only with the risk of the caplight becoming a source of ignition. The requirements of IEC 60079-0 do not apply unless specified.

This standard is also applicable to caplights intended for use in mines which have become temporarily endangered by an explosive atmosphere of firedamp.

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(845):1987, *International Electrotechnical Vocabulary (IEV) – Chapter 845: Lighting*

IEC 60079-0:1998, *Electrical apparatus for explosive gas atmospheres – Part 0: General requirements*

IEC 60079-7:1990, *Electrical apparatus for explosive gas atmospheres – Part 7: Increased safety "e"*

IEC 60079-11:1999, *Electrical apparatus for explosive gas atmospheres – Part 11: Intrinsic safety "i"*

IEC 60079-20:1996, *Electrical apparatus for explosive gas atmospheres – Part 20: Data for flammable gases and vapours, relating to use of electrical apparatus*

IEC 60112:1979, *Method for determining the comparative and the proof tracking indices of solid insulating, materials under moist conditions*

IEC 60127-2:1989, *Miniature fuses – Part 2: Cartridge fuse-links*

IEC 60332-1:1993, *Tests on electric cables under fire conditions – Part 1: Test on a single vertical insulated wire or cable*

IEC 60455-1:1998, *Resin based reactive components used for electrical insulation – Part 1: Definitions and general requirements*

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*

3 Definitions

For the purposes of this part of IEC 62013, the definitions of IEC 60079-0, IEC 60050(845) and the following apply.

3.1
battery
two or more cells electrically connected and suitable for use as a source of energy

3.2
battery container
battery enclosure and any additional cover attached to it

3.3
caplight
apparatus comprising a headpiece, connecting cable and rechargeable secondary cell(s)/ battery in a container (see figure 1)

3.4
cell
assembly of electrodes and electrolyte in an enclosure which constitutes the basic unit of a battery

3.5
firedamp
flammable mixture of gases naturally occurring in a mine (having characteristics as referenced in IEC 60079-20)

3.6
"sealed" cell
cell which remains closed when it is operated within its specified design limits but permits the escape of gas through either a resetting or a non-resetting pressure release device if the internal pressure exceeds a predetermined value

3.7
secondary cell or battery
electrochemical system capable of storing under chemical form the electrical energy received and which can give it back by reconversion

4 General

4.1 Enclosures

4.1.1 Enclosures made of light alloy shall conform to 8.1 of IEC 60079-0.

4.1.2 Enclosures made of plastic material shall conform to 7.3 of IEC 60079-0.

If the protection against ignition by dangerous electrostatic charges is by virtue of size, shape and layout, this shall be verified in accordance with one of the methods described in 10.13.

In the case of the test described in 10.13.1, the capacitance measured shall not exceed 50 pF.

In the case of the test described in 10.13.2, the highest value of charge $Q1$, $Q2$ or $Q3$ shall not exceed 60 nC.