ICS 29.260.20 SLOVENSKÁ TECHNICKÁ NORMA Júl 2016

STN	**Výbušné atmosféry. Časť 6: Ochrana zariadení kvapalinovým uzáverom „o“.**	**STN EN 60079-6** 33 2320

Explosive atmospheres - Part 6: Equipment protection by liquid immersion "o"

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 06/16

Obsahuje: EN 60079-6:2015, IEC 60079-6:2015

Oznámením tejto normy sa od 27.03.2018 ruší
STN EN 60079-6 (33 2320) z apríla 2008

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Úrad pre normalizáciu, metrológiu a skúšobníctvo SR, 2016
Podľa zákona č. 264/1999 Z. z. v znení neskorších predpisov sa môžu slovenské technické normy rozmnožovať a rozširovať iba so súhlasom Úradu pre normalizáciu, metrológiu a skúšobníctvo SR.

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60079-6

December 2015

ICS 29.260.20

Supersedes EN 60079-6:2007

English Version

Explosive atmospheres - Part 6: Equipment protection by liquid immersion "o" (IEC 60079-6:2015)

Atmosphères explosives - Partie 6: Protection du matériel par immersion dans le liquide "o" (IEC 60079-6:2015)

Explosionsgefährdete Bereiche - Teil 6: Geräteschutz durch Flüssigkeitskapselung "o" (IEC 60079-6:2015)

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Ref. No. EN 60079-6:2015 E

European foreword

The text of document 31/1157/FDIS, future edition 4 of IEC 60079-6, prepared by IEC/TC 31 "Equipment for explosive atmospheres" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60079-6:2015.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2016-06-11
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2018-03-27

This document supersedes EN 60079-6:2007.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of this document.

Endorsement notice

The text of the International Standard IEC 60079-6:2015 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60079 series	NOTE	Harmonized in the series EN 60079.
IEC 62770	NOTE	Harmonized as EN 62770.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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

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

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60079-0	-	Explosive atmospheres -- Part 0: Equipment - General requirements	EN 60079-0	-
IEC 60156	-	Insulating liquids - Determination of the breakdown voltage at power frequency - Test method	EN 60156	-
IEC 60247	-	Insulating liquids - Measurement of relative permittivity, dielectric dissipation factor (tan d) and d.c. resistivity	EN 60247	-
IEC 60296	-	Fluids for electrotechnical applications - Unused mineral insulating oils for transformers and switchgear	EN 60296	-
IEC 60529	-	Degrees of protection provided by enclosures (IP Code)	-	-
IEC 60814	-	Insulating liquids - Oil-impregnated paper and pressboard - Determination of water by automatic coulometric Karl Fischer titration	EN 60814	-
IEC 60836	-	Specifications for unused silicone insulating liquids for electrotechnical purposes	EN 60836	-
IEC 61099	-	Insulating liquids - Specifications for unused synthetic organic esters for electrical purposes	EN 61099	-
IEC 61125	-		EN 61125	-
IEC 62021-1	-	Insulating liquids - Determination of acidity -- Part 1: Automatic potentiometric titration	EN 62021-1	-
IEC 62535	-	Insulating liquids - Test method for detection of potentially corrosive sulphur in used and unused insulating oil	EN 62535	-
ISO 2592	-	Determination of flash and fire points - Cleveland open cup method	EN ISO 2592	-
ISO 2719	-	Determination of flash point - Pensky-Martens closed cup method	EN ISO 2719	-
ISO 3016	-	Petroleum products - Determination of pour point	-	-

ISO 3104	-	Petroleum products - Transparent and opaque liquids - Determination of kinematic viscosity and calculation of dynamic viscosity	EN ISO 3104	-

Annex ZZ
(informative)

Relationship between this European standard and the essential requirements of Directive 94/9/EC aimed to be covered

This European standard has been prepared under a Commission's standardisation request to provide one voluntary means of conforming to essential of Directive 94/9/EC of the European Parliament and the Council of 23 March 1994 on the approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres.

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZZ.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding essential requirements of that Directive, and associated EFTA regulations.

Table ZZ.1 – Correspondence between this European standard and Annex II of Directive 94/9/EC

Essential Requirements of Directive	Clause(s) / sub-clause(s) of this EN	Remarks / Notes
1.0.1.	4, 5	
1.0.2.	4	
1.0.3.	7, 8	
1.0.4.	Not covered	
1.0.5.	7	
1.0.6.	8	
1.1.1.	4, 5	
1.1.2.	4, 5	
1.1.3.	5	
1.2.1.	4, 5	
1.2.2.	4	
1.2.3.	Not covered	
1.2.4.	4	
1.2.5.	Not covered	
1.2.6.	4.5	
1.2.7.	Not covered	
1.2.8.	Not covered	

1.2.9.	Not covered	
1.3.1.	All	Covered by the principle of the type of protection "o": Immersion of potential ignition sources in oil.
1.3.2.	4.5	
1.3.3.	Not covered	
1.3.4.	Not covered	
1.3.5.	Not covered	
1.4.1.	4	
1.4.2.	4	
1.5.1	4.5, 4.6, 4.7	
1.5.2.	Not covered	
1.5.3.	Not covered	
1.5.4.	4.6, 4.7	
1.5.5.	4.6, 4.7	
1.5.6.	Not covered	
1.5.7.	Not covered	
1.5.8.	Not covered	
1.6.1.	Not covered	
1.6.2.	Not covered	
1.6.3.	Not covered	
1.6.4.	4.9	
1.6.5.	Not covered	
2.0.1.1.	4, 5	
2.0.1.2.	4.5	
2.0.1.3.	4.8	
2.0.1.4.	Not covered	
2.0.2.1.	4.1, 4.8	
2.0.2.2.	4.5	

2.0.2.3	4.5	and
2.1.1.1.	4, 5	
2.1.1.2.	4.8	
2.1.1.3.	4.5	
2.1.2.1.	4, 5	
2.1.2.2.	Not covered	
2.1.2.3.	Not covered	
2.2.1.1.	4.1, 4.2.2, 4.5	
2.2.1.2.	4.8	
2.2.1.3.	4.5	and
2.2.2.1	4.1, 4.2.2, 4.5	
2.2.2.2.	Not covered	
2.2.2.3.	Not covered	
2.2.2.4.	Not covered	
2.3.1.1.	4.1, 4.2.3, 4.5	
2.3.1.2.	4.8	
2.3.2.1.	4.1, 4.2.3, 4.5	
2.3.2.2.	4.8	
2.3.2.3.	Not covered	
3.0.1.	Not covered	
3.0.2.	Not covered	
3.0.3.	Not covered	
3.0.4.	Not covered	
3.1.1.	Not covered	
3.1.2.	Not covered	
3.1.3.	Not covered	
3.1.4.	Not covered	
3.1.5.	Not covered	

3.1.6.	Not covered	
3.1.7.	Not covered	
3.1.8.	Not covered	

WARNING 1: Presumption of conformity stays valid only as long as a reference to this European standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

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IEC 60079-6

Edition 4.0 2015-02

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Explosive atmospheres –
Part 6: Equipment protection by liquid immersion "o"

Atmosphères explosives –
Partie 6: Protection du matériel par immersion dans le liquide "o"

IEC 60079-6:2015-02(en-fr)

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Explosive atmospheres –
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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EXPLOSIVE ATMOSPHERES –

Part 6: Equipment protection by liquid immersion "o"

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 60079-6 has been prepared by IEC technical committee 31: Equipment for explosive atmospheres.

This fourth edition cancels and replaces the third edition, published in 2007. This edition constitutes a technical revision.

The significant changes with respect to the previous edition are listed below:

– Edition 4 represents a major technical revision of the requirements for oil immersion "o" and should be considered as introducing all new requirements. The normal "Table of Significant Changes" has not been included for this reason. In particular:
  - The requirements for oil immersion "o" have been redefined into liquid immersion , levels of protection "ob" and "oc" as recommended by the responses to 31/715/DC
  - The ability to protect sparking contacts has been added to both "ob" and "oc"
– Additional requirements have been introduced for the protective liquid.

This part of IEC 60079 is to be used in conjunction with IEC 60079-0, *Explosive atmospheres – Part 0: Equipment – General requirements*.

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

FDIS	Report on voting
31/1157/FDIS	31/1172/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.

A list of all parts in the IEC 60079 series, under the general title *Explosive atmospheres*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website 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.

EXPLOSIVE ATMOSPHERES –

Part 6: Equipment protection by liquid immersion "o"

1 Scope

This part of IEC 60079 specifies the requirements for the design, construction, testing and marking of Ex Equipment and Ex Components with type of protection liquid immersion “o” intended for use in explosive gas atmospheres.

Ex Equipment and Ex Components of type of protection liquid immersion “o” are either:

- Level of Protection “ob” (EPL “Mb” or “Gb”)
- Level of Protection “oc” (EPL “Gc”)

For Level of Protection “ob”, this standard applies where the rated voltage does not exceed 11 kV r.m.s. a.c. or d.c.

For Level of Protection “oc”, this standard applies where the rated voltage does not exceed 15 kV r.m.s. a.c. or d.c.

NOTE Requirements for higher voltages are under consideration.

This standard supplements and modifies the general requirements of IEC 60079-0. Where a requirement of this standard conflicts with a requirement of IEC 60079-0, the requirement of this standard takes precedence.

2 Normative references

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

IEC 60079-0, *Explosive Atmospheres – Part 0: Equipment – General requirements*

IEC 60156, *Insulating liquids – Determination of the breakdown voltage at power frequency – Test method*

IEC 60247, *Insulating liquids – Measurement of relative permittivity, dielectric dissipation factor (tan δ) and d.c. resistivity*

IEC 60296, *Fluids for electrotechnical applications – Unused mineral insulating oils for transformers and switchgear*

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

IEC 60814, *Insulating liquids – Oil impregnated paper and pressboard – Determination of water by automatic coulometric Karl Fischer titration*

IEC 60836, *Specifications for unused silicone insulating liquids for electrotechnical purposes*

IEC 61099, *Insulating liquids – Specifications for unused synthetic organic esters for electrical purposes*

IEC 61125, *Unused hydrocarbon based insulating liquids – Test methods for evaluating the oxidation stability*

IEC 62021-1, *Insulating liquids – Determination of acidity – Part 1: Automatic potentiometric titration*

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