

Explosive atmospheres —

Part 6: Equipment protection by oil immersion “o”

ICS 29.260.20

National foreword

This British Standard is the UK implementation of EN 60079-6:2007. It is identical with IEC 60079-6:2007. It supersedes BS EN 50015:1994 which is withdrawn, and BS EN 50015:1998 which is declared obsolescent and will be withdrawn no later than 1 May 2010.

The UK participation in its preparation was entrusted to Technical Committee GEL/31, Equipment for explosive atmospheres.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 April 2008

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ISBN 978 0 580 62960 0

Amendments/corrigenda issued since publication

Date	Comments
30 June 2008	Correcting supersession details in national foreword

English version

**Explosive atmospheres -
Part 6: Equipment protection by oil immersion "o"
(IEC 60079-6:2007)**

Atmosphères explosives -
Partie 6: Protection du matériel
par immersion dans l'huile "o"
(CEI 60079-6:2007)

Explosionsfähige Atmosphäre -
Teil 6: Geräteschutz
durch Ölkapselung "o"
(IEC 60079-6:2007)

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Ref. No. EN 60079-6:2007 E

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Foreword

The text of document 31/673/FDIS, future edition 3 of IEC 60079-6, prepared by IEC TC 31, Equipment for explosive atmospheres, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60079-6 on 2007-05-01.

This European Standard supersedes EN 50015:1998.

This standard is to be used in conjunction with EN 60079-0:2006.

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) | 2008-02-01 |
| – latest date by which the national standards conflicting with the EN have to be withdrawn | (dow) | 2010-05-01 |

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC Directive ATEX (94/9/EC). See Annex ZZ.

Annexes ZA and ZZ have been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60079-6:2007 was approved by CENELEC as a European Standard without any modification.

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EXPLOSIVE ATMOSPHERES –**Part 6: Equipment
protection by oil immersion "o"****1 Scope**

This part of IEC 60079 specifies the requirements for the construction and testing of oil-immersed electrical equipment, oil-immersed parts of electrical equipment and Ex components in the type of protection oil immersion "o", intended for use in explosive gas atmospheres.

NOTE Type of protection oil immersion "o" provides equipment protection level (EPL) Gb. For further information, see Annex A.

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.

This standard is applicable to electrical equipment, parts of electrical equipment, and Ex components which, in the absence of oil immersion, are not ignition capable in normal operation as determined by IEC 60079-15 or IEC 60079-11.

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

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

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

IEC 60079-15, *Electrical apparatus for explosive gas atmospheres – Part 15: Construction, test and marking of type of protection "n" electrical apparatus*

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 ($\tan \delta$) 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)*
Amendment 1 (1999)

IEC 60588-2, *Askarels for transformers and capacitors – Part 2: Test methods*

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

ISO 2719, *Determination of flash point – Pensky-Martens closed cup method*

ISO 3016, *Petroleum oils – Determination of pour point*

ISO 3104, *Petroleum products – Transparent and opaque liquids – Determination of kinematic viscosity and calculation of dynamic viscosity*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply; they supplement the terms and definitions given in IEC 60079-0.

NOTE Additional definitions applicable to explosive atmospheres can be found in IEC 60050-426.

3.1

oil immersion "o"

type of protection in which the electrical equipment or parts of the electrical equipment are immersed in a protective liquid in such a way that an explosive gas atmosphere which may be above the liquid or outside the enclosure cannot be ignited

3.2

protective liquid

mineral oil conforming to IEC 60296 or an alternative liquid meeting the requirements of 4.2

3.3

sealed equipment

equipment designed and constructed in such a manner as to prevent ingress of an external atmosphere during the expansion and contraction of the internally contained liquid during normal operation, for example, by means of an expansion vessel

3.4

non-sealed equipment

equipment designed and constructed in such a manner as to allow the ingress and egress of an external atmosphere during the expansion and contraction of the internally contained fluid during normal operation

3.5

maximum permissible protective liquid level

maximum level that the protective liquid can attain in normal service, taking into account the effects of expansion from the worst-case filling condition specified by the manufacturer to the condition of full load at maximum ambient temperature for which the equipment is designed