

Explosive atmospheres —

Part 1: Equipment protection by flameproof enclosures “d”

The European Standard EN 60079-1:2007 has the status of a
British Standard

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National foreword

This British Standard is the UK implementation of EN 60079-1:2007. It is identical to IEC 60079-1:2007. It supersedes BS EN 60079-1:2004, which will be withdrawn on 1 July 2010.

The UK participation in its preparation was entrusted by Technical Committee GEL/31, Equipment for explosive atmospheres, to Subcommittee GEL/31/12, Flameproof enclosures.

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.

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Part 1: Equipment protection by flameproof enclosures "d"
(IEC 60079-1:2007)**

Atmosphères explosives -
Partie 1: Protection du matériel
par enveloppes antidéflagrantes "d"
(CEI 60079-1:2007)

Explosionsfähige Atmosphäre -
Teil 1: Geräteschutz durch
druckfeste Kapselung "d"
(IEC 60079-1:2007)

This European Standard was approved by CENELEC on 2007-07-01. 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.

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CENELEC

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Europäisches Komitee für Elektrotechnische Normung

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Foreword

The text of document 31/680/FDIS, future edition 6 of IEC 60079-1, prepared by IEC TC 31, Equipment for explosive atmospheres, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60079-1 on 2007-07-01.

This European Standard supersedes EN 60079-1:2004 + Corrigendum April 2006.

EN 60079-1:2007 contains the following significant technical changes with regard to EN 60079-1:2004:

- revisions to Clause 5 regarding markings and conditions of safe use when a dimension of a flameproof joint is other than the relevant minimum or maximum;
- revisions to Table 1 regarding maximum gap for flanged, cylindrical or spigot joints;
- revisions to Table 4 regarding requirements for taper threaded joints;
- revisions to Clause 10 regarding volume restrictions and test conditions associated with breathing and draining devices;
- revisions to Clause 11 regarding requirements for fasteners, associated holes and blanking elements;
- revisions to Clause 12 regarding material restrictions associated with zinc and zinc alloys;
- revisions to Table 5 regarding conditions for the determination of maximum surface temperatures;
- revisions to Clause 15 regarding the determination of explosion pressure (reference pressure);
- revisions to Table 6 regarding the reduction in length of a threaded joint for nontransmission testing;
- revisions to Table 7 regarding the test factors to increase pressure or test gap (iE);
- revisions to Table 8 regarding the minimum distance of obstructions from flange openings;
- revisions to Clause 19 regarding tests for flameproofness;
- revisions to Clause 20 regarding a tabulated collection of marking requirements;
- revisions to Annex C regarding additional requirements for flameproof entry devices;
- revisions to Annex D regarding empty flameproof enclosures as Ex components;
- addition of a new Annex F regarding mechanical properties for screws and nuts; and
- addition of a new Annex G regarding equipment protection levels for Ex equipment.

This standard is to be used in conjunction with EN 60079-0:2004.

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) 2008-04-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2010-07-01

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 60079-1:2007 was approved by CENELEC as a European Standard without any modification.

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EXPLOSIVE ATMOSPHERES –

Part 1: Equipment protection by flameproof enclosures “d”

1 Scope

This part of IEC 60079 contains specific requirements for the construction and testing of electrical equipment with the type of protection flameproof enclosure “d”, intended for use in explosive gas atmospheres.

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 will take precedence.

NOTE Equipment protection by flameproof enclosures “d” provides Equipment Protection Level (EPL) Gb. For further information, see Annex G.

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 60061 (all parts), *Lamp caps and holders together with gauges for the control of interchangeability and safety*

IEC 60079-0:2004, *Electrical apparatus for explosive gas atmospheres – Part 0: General requirements*

IEC 60079-1-1, *Electrical apparatus for explosive gas atmospheres – Part 1-1: Flameproof enclosures “d” – Method of test for ascertainment of maximum experimental safe gap*

IEC 60079-7, *Explosive atmospheres – Part 7: Equipment protection by increased safety “e”*

IEC 60079-11, *Explosive atmospheres – Part 11: Equipment protection by intrinsic safety “i”*

IEC 60079-14:2002, *Electrical apparatus for explosive gas atmospheres – Part 14: Electrical installations in hazardous areas (other than mines)*

IEC 60086-1:2000, *Primary batteries – Part 1: General*

IEC 60112, *Method for the determination of the proof and the comparative tracking indices of solid insulating materials*

IEC 60127 (all parts), *Miniature fuses*

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

IEC 60623:2001, *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Vented nickel-cadmium prismatic rechargeable single cells*

IEC 60662:1980, *High-pressure sodium vapour lamps*

IEC 60695-11-10, *Fire hazard testing – Part 11-10: Test flames – 50 W horizontal and vertical flame test methods*