BRITISH STANDARD

BS EN
60079-11:2007

Explosive atmospheres —

Part 11: Equipment protection by intrinsic safety “i”

The European Standard EN 60079-11:2007 has the status of a British Standard

ICS 29.260.20

BSI
British Standards

National foreword

This British Standard was published by BSI. It is the UK implementation of EN 60079-11:2007. It is identical with IEC 60079-11:2006. It supersedes BS EN 50020:2002, which will be withdrawn on 1 October 2009.

The UK participation in its preparation was entrusted by Technical Committee GEL/31, Equipment for explosive atmospheres, to Subcommittee GEL/31/13, Intrinsically safe apparatus.

A list of organizations represented on GEL/31/13 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.

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EUROPEAN STANDARD

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English version

Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

(IEC 60079-11:2006)

Atmosphères explosives -
Partie 11: Protection de l'équipement
par sécurité intrinsèque "i"
(CEI 60079-11:2006 + corrigendum 2006)

Explosionsfähige Atmosphäre -
Teil 11: Geräteschutz durch
Eigensicherheit "i"
(IEC 60079-11:2006)

CENELEC

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

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Foreword

The text of document 31G/159/FDIS, future edition 5 of IEC 60079-11, prepared by SC 31G, Intrincisally safer apparatus, of IEC TC 31, Equipment for explosive atmospheres, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60079-11 on 2006-10-01.

This European Standard supersedes EN 50020:2002.

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)	2007-08-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2009-10-01

This standard supplements and modifies the general requirements of EN 60079-0:2006, except as indicated in Table 1 (see Scope).

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 94/9/EC. See Annex ZZ.

Annexes ZA and ZZ have been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 60079-11:2006 was approved by CENELEC as a European Standard without any modification.

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EXPLOSIVE ATMOSPHERES –

Part 11: Equipment protection by intrinsic safety "i"

1 Scope

This part of IEC 60079 specifies the construction and testing of intrinsically safe apparatus intended for use in an explosive gas atmosphere and for associated apparatus, which is intended for connection to intrinsically safe circuits which enter such atmospheres.

This type of protection is applicable to electrical apparatus in which the electrical circuits themselves are incapable of causing an explosion in the surrounding explosive atmospheres.

This standard is also applicable to electrical apparatus or parts of electrical apparatus located outside the explosive gas atmosphere or protected by another type of protection listed in IEC 60079-0, where the intrinsic safety of the electrical circuits in the explosive gas atmosphere may depend upon the design and construction of such electrical apparatus or parts of such electrical apparatus. The electrical circuits exposed to the explosive gas atmosphere are evaluated for use in such an atmosphere by applying this standard.

The requirements for intrinsically safe systems are provided in IEC 60079-25. The requirements for intrinsically safe concepts for fieldbus are provided in IEC 60079-27.

This standard supplements and modifies the general requirements of IEC 60079-0, except as indicated in Table 1. Where a requirement of this standard conflicts with a requirement of IEC 60079-0, the requirements of this standard shall take precedence.

If associated apparatus is placed in the explosive gas atmosphere, it must be protected by an appropriate type of protection listed in IEC 60079-0, and then the requirements of that method of protection together with the relevant parts of IEC 60079-0 also apply to the associated apparatus.

Table 1 – Exclusion of specific clauses of IEC 60079-0

Clause or subclause of IEC 60079-0		Intrinsically safe apparatus	Associated apparatus
4.2.2	Group II – Surface temperature marking	Applies	Excluded
5.3	Maximum surface temperature	Applies	Excluded
5.4	Surface temperature and ignition temperature	Applies	Excluded
5.5	Small components	Applies	Excluded
6.3	Opening times	Excluded	Excluded
7.1.1	Applicability	Applies	Excluded
7.1.2	Specification of materials	Applies	Excluded
7.1.3*	Plastic materials	Excluded	Excluded
7.2*	Thermal endurance	Excluded	Excluded
7.3	Electrostatic charges on external non-metallic materials of enclosures	Applies	Excluded
7.3.2	Avoidance of a build-up electrostatic charge	Applies	Excluded
7.4	Threaded holes	Excluded	Excluded

Table 1 *(continued)*

Clause or subclause of IEC 60079-0		Intrinsically safe apparatus	Associated apparatus
8.1	Material composition	Applies	Excluded
8.2	Threaded holes	Excluded	Excluded
9	Fasteners	Excluded	Excluded
10	Interlocking devices	Excluded	Excluded
11	Bushings	Excluded	Excluded
12	Materials used for cementing	Excluded	Excluded
14	Connection facilities and terminal compartments	Excluded	Excluded
15	Connection facilities for earthing or bonding conductors	Excluded	Excluded
16.5	Conductor temperature	Excluded	Excluded
17	Supplementary requirements for rotating electrical machines	Excluded	Excluded
18	Supplementary requirements for switchgear	Excluded	Excluded
19	Supplementary requirements for fuses	Excluded	Excluded
20	Supplementary requirements for plugs and sockets	Excluded	Excluded
21	Supplementary requirements for luminaires	Excluded	Excluded
22	Supplementary requirements for caplights and handlights	Excluded	Excluded
23.1	Batteries	Applies	Excluded
26.4	Tests of enclosures	Applies	Excluded
26.5.1	Temperature measurement	Applies	Excluded
26.5.2	Thermal shock test	Excluded	Excluded
26.5.3	Small component ignition test	Applies	Excluded
26.6	Torque test for bushings	Excluded	Excluded
26.7*	Non-metallic enclosures or non-metallic parts of enclosures	Excluded	Excluded
26.8*	Thermal endurance to heat	Excluded	Excluded
26.9*	Thermal endurance to cold	Excluded	Excluded
26.10*	Resistance to light	Excluded	Excluded
26.11*	Resistance to chemical agents for Group I electrical apparatus	Excluded	Excluded
26.12	Earth continuity	Excluded	Excluded
26.13	Surface resistance test of parts of enclosures or non-metallic materials	Applies	Excluded
26.14	Charging tests	Applies	Excluded
26.15	Measurement of capacitance	Applies	Excluded
Annex A	Ex cable glands	Excluded	Excluded
* indicates that these requirements apply for 6.1.2a) only.			