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Irish Standard
I.S. EN 60079-5:2015

Explosive atmospheres - Part 5: Equipment protection by powder filling "q"

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60079-5

April 2015

ICS 29.260.20

Supersedes EN 60079-5:2007

English Version

Explosive atmospheres - Part 5: Equipment protection by powder filling "q" (IEC 60079-5:2015)

Atmosphères explosives - Partie 5: Protection du matériel par remplissage pulvérulent "q" (IEC 60079-5:2015)

Explosionsgefährdete Bereiche - Teil 5: Geräteschutz durch Sandkapselung "q" (IEC 60079-5:2015)

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Ref. No. EN 60079-5:2015 E

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Foreword

The text of document 31/1156/FDIS, future edition 4 of IEC 60079-5, prepared by IEC/TC 31 "Equipment for explosive atmospheres" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60079-5:2015.

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)	2015-12-24
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2018-03-24

This document supersedes EN 60079-5:2007.

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.

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

Endorsement notice

The text of the International Standard IEC 60079-5:2015 was approved by CENELEC as a European Standard without any modification.

IEC 60050 (series)	NOTE	Harmonized as EN 60050 (series).
IEC 60664-1:2007	NOTE	Harmonized as EN 60664-1:2007.
IEC 60079 (series)	NOTE	Harmonized as EN 60079. (series)
IEC 61140	NOTE	Harmonized as EN 61140.
IEC 60747-5-5	NOTE	Harmonized as EN 60747-5-5.

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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	-	-
IEC 60079-7	-	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"	EN 60079-7	-
IEC 60079-11	-	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"	EN 60079-11	-
IEC 60127	series	Miniature fuses	EN 60127	series
IEC 60529	-	Degrees of protection provided by enclosures (IP Code)	-	-
IEC 61558-1	-	Safety of power transformers, power supplies, reactors and similar products - Part 1: General requirements and tests	EN 61558-1	-
			+EN 61558-1:2005/corrigendum Aug. 2006	2006
IEC 61558-2-6	-	Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V - Part 2-6: Particular requirements and tests for safety isolating transformers and power supply units incorporating safety isolating transformers	EN 61558-2-6	-
ISO 2591-1	-	Test sieving - Part 1: Methods using test sieves of woven wire cloth and perforated metal plate	-	-
ISO 2859-1	-	Sampling procedures for inspection by attributes - Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection	-	-
ISO 3310-1	-	Test sieves - Technical requirements and testing - Part 1: Test sieves of metal wire cloth	-	-
ISO 3310-2	-	Test sieves - Technical requirements and testing - Part 2: Test sieves of perforated metal plate	-	-

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Annex ZZ
(informative)
Coverage of Essential Requirements of EC Directives

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and within its scope the standard covers only the following essential requirements out of those given in Annex II of the EC Directive 94/9/EC:

- ER 1.0.1, ER 1.0.2, ER 1.0.3, ER 1.0.5, ER 1.0.6 (partly)
- ER 1.1 (partly)
- ER 1.2.1 (partly), ER 1.2.2 (partly), ER 1.2.3 (partly), ER 1.2.5 (partly), ER 1.2.6 (partly), ER 1.2.7 (partly), ER 1.2.8
- ER 1.3.1
- ER 1.4.1 (partly), ER 1.4.2 (partly)
- ER 1.5.1, ER 1.5.3
- ER 1.6.4
- ER 2.0.1.3
- ER 2.0.2.1, ER 2.0.2.3 (partly)
- ER 2.1.1.2
- ER 2.1.2.3
- ER 2.2.1.1, ER 2.2.1.2
- ER 2.2.2.1, ER 2.2.2.2
- ER 2.3.1.2

Compliance with this standard provides one means of conformity with the specified essential requirements of the Directive[s] concerned.

WARNING: Other requirements and other EC Directives may be applicable to the products falling within the scope of this standard.

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IEC 60079-5

Edition 4.0 2015-02

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Explosive atmospheres –
Part 5: Equipment protection by powder filling "q"

Atmosphères explosives –
Partie 5: Protection du matériel par remplissage pulvérulent "q"

IEC 60079-5:2015-02(en-fr)

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IEC 60079-5

Edition 4.0 2015-02

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Explosive atmospheres –
Part 5: Equipment protection by powder filling "q"

Atmosphères explosives –
Partie 5: Protection du matériel par remplissage pulvérulent "q"

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

EXPLOSIVE ATMOSPHERES –

Part 5: Equipment protection by powder filling "q"

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 60079-5 has been prepared by IEC technical committee 31: Equipment for explosive atmospheres.

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

This edition includes the following significant technical changes with respect to the previous edition:

NOTE The technical changes referred to include the significant technical changes in the revised IEC standard, but they do not form an exhaustive list of all modifications from the previous edition. More guidance may be found by referring to the redline version of the IEC standard, if available.

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		Type		
Significant changes	**Clause/subclause**	**Minor and editorial changes**	**Extension**	**Major technical changes**
Specific references to IEC 60079-0 have been reworded so the references to IEC 60079-0 can be non-dated references	4.1.3 4.8 4.8.3	X		
The “housing” surrounding the powder filled equipment or Ex Component has been redefined as a “container” to avoid confusion with the “enclosure” requirements of IEC 60079-0	4.1	X		
A relaxation has been introduced to permit reduced distances through filling material for instances where there is no adjacent gap in the container	4.3.1		X	
A relaxation has been introduced to permit the use of creepage dimensions per IEC 60079-7 where CTI is better than 175	4.8.3		X	
An evaluation of joints employed when the reduced distances according to Table 1 are applied, has been added.	5.1.1		X	
Text for determination of maximum temperature clarified with respect to overloads and malfunctions	5.1.4	X		
A batch routine test has been introduced	5.2.1		X	

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

FDIS	Report on voting
31/1156/FDIS	31/1171/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.

The list of all parts of 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

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EXPLOSIVE ATMOSPHERES –

Part 5: Equipment protection by powder filling “q”

1 Scope

This part of IEC 60079 contains specific requirements for the construction, testing and marking of electrical equipment, parts of electrical equipment and Ex components in the type of protection powder filling “q”, intended for use in explosive gas atmospheres.

NOTE 1 Electrical equipment and Ex components protected by powder filling “q” can contain electronic circuits, transformers, protection fuses, relays, intrinsically safe electrical apparatus, associated electrical apparatus, switches, etc.

NOTE 2 Type of protection powder filling “q” provides Equipment Protection Level (EPL) Gb or Mb.

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 applies to electrical equipment, parts of electrical equipment and Ex components with:

– a rated supply current less than or equal to 16 A;
– a rated supply voltage less than or equal to 1 000 V;
– a rated power consumption less than or equal to 1 000 W.

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 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 60127 (all parts), *Miniature fuses*

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

IEC 61558-1, *Safety of power transformers, power supplies, reactors and similar products – Part 1: General requirements and tests*

IEC 61558-2-6, *Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V – Part 2-6: Particular requirements and tests for safety isolating transformers and power supply units incorporating safety isolating transformers*

ISO 2859-1, *Sampling procedures for inspection by attributes – Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

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