

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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Partie 5: Protection du matériel par remplissage pulvérulent "q"**

CONTENTS

FOREWORD	4
1 Scope	6
2 Normative references	6
3 Terms and definitions	7
4 Constructional requirements	7
4.1 Containers	7
4.1.1 Closing and sealing	7
4.1.2 Pressure test of container	8
4.1.3 Degree of protection of the container	8
4.1.4 Filling procedure	8
4.1.5 Containers that are not external enclosures	8
4.2 Filling material	9
4.2.1 Material specification	9
4.2.2 Documentation	9
4.2.3 Testing	9
4.3 Distances	9
4.3.1 Distances through filling material	9
4.3.2 Distances surrounding free space	11
4.4 Connections	12
4.4.1 Equipment	12
4.4.2 Ex Components	12
4.5 Capacitors	12
4.6 Cells and batteries	12
4.7 Temperature limitations under overload conditions	12
4.8 Temperature limitations under malfunction conditions	12
4.8.1 General	12
4.8.2 Fuse	12
4.8.3 Malfunction exclusions	13
4.8.4 Protective devices for temperature limitation	16
4.8.5 Power supply prospective short-circuit current	16
5 Verifications and tests	16
5.1 Type verifications and tests	16
5.1.1 Pressure type test of container	16
5.1.2 Verification of the degree of protection of the enclosure	17
5.1.3 Dielectric strength Insulation resistance test of the filling material	17
5.1.4 Maximum temperatures	17
5.2 Routine verifications and tests	18
5.2.1 Routine pressure test of container	18
5.2.2 Dielectric strength Insulation resistance test of the filling material	18
6 Marking	19
7 Instructions	20
Bibliography	21
Figure 1 – Distances through filling material	11

Figure 2 – Test arrangement for the dielectric strength insulation resistance test of the filling material	19
Table 1 – Distances through the filling material.....	10
Table 2 – Creepage distances and distances through filling material.....	15

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EXPLOSIVE ATMOSPHERES –

Part 5: Equipment protection by powder filling “q”

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This consolidated version of the official IEC Standard and its amendment has been prepared for user convenience.

IEC 60079-5 edition 4.1 contains the fourth edition (2015-02) [documents 31/1156/FDIS and 31/1171/RVD] and its amendment 1 (2022-05) [documents 31/1601/CDV and 31/1171/RVD].

In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.

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

This fourth edition 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.

Significant changes	Clause/subclause	Type		
		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	

This publication has been created in accordance with the ISO/IEC Directives, Part 2.

The list of all parts of the IEC 60079 series, under the general title *Explosive atmospheres*, can be found on the IEC web site.

The committee has decided that the contents of the base publication and its amendment will remain unchanged until the stability date indicated on the IEC web site under 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 Gc.

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*