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Responsible committee: EXL/31 Equipment for explosive atmospheres

Interested committees:

Title: BS EN IEC 60079-10-2 Explosive atmospheres

Part 10-2: Classification of areas - Explosive dust atmospheres

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Responsible Committee Secretary: **Mr Christopher Brown (BSI)**Direct tel: **02089967441**E-mail: **christopher.brown@bsigroup.com**

Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

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- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/Figure/ Table/Note	Type of comment	Commend (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



31J/355/CD

COMMITTEE DRAFT (CD)

PROJECT NUMBER:
IEC 60079-10-2 ED3

DATE OF CIRCULATION:
2023-12-01

CLOSING DATE FOR COMMENTS:
2024-02-23

SUPERSEDES DOCUMENTS:
31J/354/RR

IEC SC 31J : CLASSIFICATION OF HAZARDOUS AREAS AND INSTALLATION REQUIREMENTS

SECRETARIAT:
Croatia

SECRETARY:
Mr Marino Kelava

OF INTEREST TO THE FOLLOWING COMMITTEES:
TC 18

PROPOSED HORIZONTAL STANDARD:



Other TC/SCs are requested to indicate their interest, if any, in this CD to the secretary.

FUNCTIONS CONCERNED:

☐ EMC

☒ ENVIRONMENT

☐ QUALITY ASSURANCE

☒ SAFETY

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Recipients of this document are invited to submit, with their comments, notification of any local regulations or technical reasons that may exist and should be considered should this proposal proceed, recognizing that failure to address such requirements could result in the need for new or existing "In Some Countries" clauses. (SEE [AC/22/2007](#) OR [NEW GUIDANCE DOC](#)).

TITLE:

Explosive atmospheres - Part 10-2: Classification of areas - Explosive dust atmospheres

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

EXPLOSIVE ATMOSPHERES –**Part 10-2: Classification of areas –
Explosive dust atmospheres****FOREWORD**

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International Standard IEC 60079-10-2 has been prepared by subcommittee 31J: Classification of hazardous areas and installation requirements, of IEC technical committee 31: Equipment for explosive atmospheres.

This third edition of IEC 60079-10-2 cancels and replaces the second edition of IEC 60079-10-2 published in 2015. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition: TO BE UPDATED AT THE LATER STAGE!!!

		Type		
Explanation of the significance of the changes	Clause	Minor and editorial changes	Extension	Major technical changes

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Explanation of the types of significant changes:	
1. Minor and editorial changes:	– Clarification – Decrease of technical requirements – Minor technical change – Editorial corrections
These are changes which modify requirements in an editorial or a minor technical way. They include changes of the wording to clarify technical requirements without any technical change, or a reduction in the level of existing requirement.	
2. Extension:	– Addition of technical options
These are changes which add new or modify existing technical requirements, in a way that new options are given, but without increasing the requirements that are fully compliant with the previous standard. Therefore, these will not have to be considered for existing area classifications in conformity with the preceding edition.	
3. Major technical changes:	– Addition of technical requirements – Increase of technical requirements
These are changes to technical requirements (addition, increase of the level or removal) made in a way that an existing area classification in conformity with the preceding edition will not always be able to fulfil the requirements given in the later edition. These changes have to be considered for existing area classifications in conformity with the preceding edition.	

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

FDIS	Report on voting
31J/XXX/FDIS	31J/XXX/RVD

121

122 Full information on the voting for the approval of this standard can be found in the report on
123 voting indicated in the above table.

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

125 A list of all parts of the IEC 60079 series, under the general title *Explosive atmospheres*, can
126 be found on the IEC website.

127 The committee has decided that the contents of this publication will remain unchanged until
128 the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data
129 related to the specific publication. At this date, the publication will be

- 130 • reconfirmed,
- 131 • withdrawn,
- 132 • replaced by a revised edition, or
- 133 • amended.

134

135

136

INTRODUCTION

137 Dusts, as defined in this standard, are hazardous because when they are dispersed in air by
138 any means they could form potentially explosive atmospheres. Furthermore, layers of dust
139 could ignite and act as ignition sources for an explosive atmosphere.

140 This part of IEC 60079 gives guidance on the identification and classification of areas where
141 such hazards from dust can arise. It sets out the essential criteria against which the ignition
142 hazards can be assessed and gives guidance on the design and control parameters which
143 can be used in order to reduce such a hazard. General and special criteria are given for the
144 process of identification and classification of hazardous areas.

145 This standard contains an informative Annex A giving examples for classifying areas.

146

EXPLOSIVE ATMOSPHERES –

Part 10-2: Classification of areas – Explosive dust atmospheres

1 Scope

This part of IEC 60079 is concerned with the identification and classification of areas where explosive dust atmospheres and combustible dust layers are present, in order to permit the proper assessment of ignition sources in such areas.

In this standard, explosive dust atmospheres and combustible dust layers are treated separately. In Clause 4, area classification for explosive dusts clouds is described, with dust layers acting as one of the possible sources of release. In Clause 7 other general considerations for dust layers are described.

The examples in this standard are based on a system of effective housekeeping being implemented in the plant to prevent dust layers from accumulating. Where effective housekeeping is not present, the area classification includes the possible formation of explosive dust clouds from dust layers.

The principles of this standard can also be followed when combustible fibres or flyings might cause a hazard.

This standard is intended to be applied where there can be a risk due to the presence of explosive dust atmospheres or combustible dust layers under normal atmospheric conditions.

NOTE 1 Atmospheric conditions include variations in pressure and temperature above and below reference levels of 101,3 kPa (1 013 mbar) and 20 °C (293 K), provided that the variations have a negligible effect on the explosive properties of the combustible material.

It does not apply to

- a) underground mining areas,
- b) dusts of explosives that do not require atmospheric oxygen for combustion such as pyrophoric substances, propellants, pyrotechnics, munitions, peroxides, oxidizers, water-reactive elements or compounds, or other similar materials,
- c) catastrophic failures or rare malfunctions which are beyond the concept of abnormality dealt with in this standard,
- d) rooms used for medical purposes,
- e) domestic premises.
- f) where a hazard might arise due to the presence of flammable gas or vapour, but the principles may be used in the assessment of a hybrid mixture (see also IEC 60079-10-1).

NOTE 2 Additional guidance on hybrid mixtures is provided in Annex C.

This standard does not consider the effects of consequential damage following a fire or an explosion.

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 60079-10-1, *Explosive atmospheres – Part 10-1: Classification of areas – Explosive gas atmospheres*

ISO/IEC 80079-20-2, *Explosive Atmospheres – Part 20-2: Material Characteristics – Combustible dusts test methods*

3 Terms and definitions

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

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

3.1

area

three-dimensional region or space

3.2

hybrid mixture

mixture of a flammable gas or vapour with a dust

3.3

dust

generic term including both combustible dust and combustible flyings

3.4

combustible dust

finely divided solid particles, 500 µm or less in nominal size, which may form an explosive mixture with air at atmospheric pressure and normal temperatures

Note 1 to entry: The term solid particles is intended to address particles in the solid phase and not the gaseous or liquid phase, but does not preclude a hollow particle.

Note 2 to entry: Materials passing a U.S. No. 35 Standard sieve as defined in ASTM E 11 are considered to meet the 500 µm criterion.

Note 3 to entry: Combustible dust test methods can be found in ISO/IEC 80079-20-2.

3.5

explosive dust atmosphere

mixture with air, under atmospheric conditions, of flammable substances in the form of dust, which, after ignition, permits self-sustaining propagation

3.6

conductive dust

combustible dust with electrical resistivity equal to or less than 10³ Ωm

Note 1 to entry: Conductive dust is classified as Group IIIC.

3.7

non-conductive dust

combustible dust with electrical resistivity greater than 10³ Ωm

Note 1 to entry: Non-conductive dust is classified as Group IIIB.