



DPC: 24 / 30505017 DC

BSI Group Headquarters

389 Chiswick High Road London W4 4AL

Tel: +44 (0)20 8996 9000

Fax: +44 (0)20 8996 7400

www.bsigroup.com

Date: 20 November 2024

Origin: International

Latest date for receipt of comments: 5 February 2025

Project No. 2024/03343

Responsible committee: EXL/31 Equipment for explosive atmospheres

Interested committees:

Title: BS EN IEC 60079-33 Explosive atmospheres

Part 33: Equipment protection by special protection 's'

Please notify the secretary if you are aware of any keywords that might assist in classifying or identifying the standard or if the content of this standard

- i) has any issues related to 3rd party IPR, patent or copyright
- ii) affects other national standard(s)
- iii) requires additional national guidance or information

**WARNING: THIS IS A DRAFT AND MUST NOT BE REGARDED OR USED AS A BRITISH STANDARD.
THIS DRAFT IS NOT CURRENT BEYOND 5 February 2025**

This draft is issued to allow comments from interested parties; all comments will be given consideration prior to publication. No acknowledgement will normally be sent. **See overleaf for information on the submission of comments.**

No copying is allowed, in any form, without prior written permission from BSI except as permitted under the Copyright, Designs and Patent Act 1988 or for circulation within a nominating organization for briefing purposes. Electronic circulation is limited to dissemination by e-mail within such an organization by committee members.

Further copies of this draft may be purchased from BSI Shop <http://shop.bsigroup.com> or from BSI Customer Services, Tel: +44(0) 20 8996 9001 or email cservices@bsigroup.com. British, International and foreign standards are also available from BSI Customer Services.

Information on the co-operating organizations represented on the committees referenced above may be obtained from <http://standardsdevelopment.bsigroup.com>

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

- **Annotated drafts are not acceptable and will be rejected.**
- 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
------------------	------------------------

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.	



31/1838/CD

COMMITTEE DRAFT (CD)

PROJECT NUMBER:

IEC 60079-33 ED2

DATE OF CIRCULATION:

2024-11-15

CLOSING DATE FOR COMMENTS:

2025-03-07

SUPERSEDES DOCUMENTS:

31/1795A/RR

IEC TC 31 : EQUIPMENT FOR EXPLOSIVE ATMOSPHERES

SECRETARIAT:

United Kingdom

SECRETARY:

Mr Tom Stack

OF INTEREST TO THE FOLLOWING COMMITTEES:

HORIZONTAL FUNCTION(s):

ASPECTS CONCERNED:

This document is still under study and subject to change. It should not be used for reference purposes.

Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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 33: Equipment protection by special protection 's'

NOTE FROM TC/SC OFFICERS:

Copyright © 2024 International Electrotechnical Commission, IEC. All rights reserved. It is permitted to download this electronic file, to make a copy and to print out the content for the sole purpose of preparing National Committee positions. You may not copy or "mirror" the file or printed version of the document, or any part of it, for any other purpose without permission in writing from IEC.

Link to Committee Draft (CD) online document:

<https://osd.iec.ch/#/editor/archive/2369d00f-6a38-6656-e063-6d13000a085b/en/CD/1>

How to access

This link will lead you to the Online Standards Development (OSD) platform for national mirror committee's comments. It replaces the project content, which is usually circulated as a PDF.

For OSD NC Managers

If not already done, your respective National Committee Administrator will create your profile via Symphony (<https://symphony.iec.ch>) as an OSD NC Manager to oversee the comment resolution process for the preparation of your national comments. Once you have been granted access via Symphony, please use your usual IEC credentials to access the link.

If you do not have access, please contact your National Committee Administrator or our OSD support team.

For OSD NC Commenters

If not already done, your OSD NC Manager will create your profile via Symphony as an OSD NC Commenter. Once you have been granted access via Symphony, please use your usual IEC credentials to access the link. You may then provide your comments directly in the OSD.

As an alternative solution, OSD NC Commenters who wish to continue using the IEC comment form can use the regular template together with a PDF of the draft document downloadable from the OSD platform. However, please note that line numbers are no longer available, and it is not possible to add tables and graphics or use track changes.

For Voters

Once all your national comments have been resolved, it is no longer necessary to upload the comment form to the IEC Voting System anymore. Instead, please use the following radio buttons in the IEC Voting System to indicate whether or not your National Committee has submitted comments in the OSD:

Comment: ☐ No Comment at this stage ☐ Comments in

Reference materials

We recommend that OSD NC Managers and OSD NC Commenters review the available materials to better understand the member commenting on the OSD platform. This includes:

- latest videos and presentations on the [OSD webpage, and](#)
- step-by-step explanations on [Helpscout](#).

Contact

Should you require any assistance, please contact the OSD project team at osd_support@iec.ch.

CONTENTS

FOREWORD	3
INTRODUCTION	5
1 Scope	7
2 Normative references	7
3 Terms and definitions	8
4 General	9
4.1 Application	9
4.2 Equipment grouping and temperature classification	9
4.3 Level of Protection	9
4.4 Manufacturer's justification	9
4.5 Independent verification	10
5 Independent verifier	10
5.1 General	10
5.2 Competence	10
5.3 Duties	11
5.4 Independence	11
6 Application of equipment protection levels (EPL)	11
6.1 Equipment with EPL Ma	11
6.2 Equipment with EPL Mb	12
6.3 Equipment with EPL Ga	12
6.4 Equipment with EPL Gb	12
6.5 Equipment with EPL Gc	13
6.6 Equipment with EPL Da	13
6.7 Equipment with EPL Db	13
6.8 Equipment with EPL Dc	13
7 Design and construction	14
7.1 Principles of an integrated approach to explosion protection	14
7.2 Safety devices	14
8 Assessment and testing	14
8.1 Plan	14
8.2 Implementation	15
8.3 Report	15
8.4 Routine tests	15
9 Ex Components	15
10 Documentation	15
10.1 Instructions	15
10.2 Schedule drawings	15
11 Marking	16
11.1 General	16
11.2 Marking for Ex "s" only	16
11.3 Marking for Ex "s" with other recognized types of protection	16
12 Certificate information	16
12.1 Certificate for Ex "s" only	16
12.2 Certificate for Ex "s" with other recognized types of protection	16

12.3	Specific conditions of use.....	16
12.4	Schedule of limitations	16
Annex A (normative)	Application of special protection "s"	17
A.1	Justification for the application of special protection "s"	17
A.1.1	Application.....	17
A.1.2	Equipment substantially meeting the requirements for the recognized types of protection	17
A.1.3	Equipment outside the scope of recognized types of protection.....	17
A.1.4	Protection technique with no alignment to the recognized types of protection	18
A.1.5	Enhanced EPL through additional means of protection.....	18
A.1.6	Combination of approaches	18
A.2	Adaption of recognized types of protection	18
A.3	Other innovative means of ensuring safety.....	19
A.4	Connection of conductor and cables.....	19
Bibliography		20

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**EXPLOSIVE ATMOSPHERES - PART 33: EQUIPMENT PROTECTION BY
SPECIAL PROTECTION 'S' –**

FOREWORD

- a) 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.
- b) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- c) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- d) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- e) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- f) All users should ensure that they have the latest edition of this publication.
- g) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- h) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- i) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC [had/had not] received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at <https://patents.iec.ch>. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 60079-33 has been prepared by IEC technical committee 31: Equipment for explosive atmospheres. It is an International Standard.

This second edition cancels and replaces the XXX edition published in [publication_date], Amendment 1:[publication_date] and Amendment 2:[publication_date]. This edition constitutes a technical revision.

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

j) ...;

The text of this International Standard is based on the following documents:

Draft	Report on voting
31/XX/FDIS	31/XX/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is **English** [change language if necessary].

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

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

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.