



DPC: 25/30508993 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

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Title: Draft BS EN ISO /IEC 80079-38 Explosive atmospheres. Part 38: Equipment and components in explosive atmospheres in underground mines.

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Introduction

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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.

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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	Comment (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.	



DRAFT International Standard

ISO/IEC DIS 80079-38

Explosive atmospheres — Part 38: Equipment and components in explosive atmospheres in underground mines

Atmosphères explosives —

*Partie 38: Appareils et composants destinés à être utilisés dans
les mines souterraines grisouteuses*

ICS: 29.260.20; 73.100.30

This document is circulated as received from the committee secretariat.

This draft is submitted to a parallel vote in ISO and in IEC.

ISO/CEN PARALLEL PROCESSING

ISO/TMBG

Secretariat: **ISO**

Voting begins on:
2025-02-28

Voting terminates on:
2025-05-23

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Reference number
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

EXPLOSIVE ATMOSPHERES –

**Part 38: Equipment and components in explosive
atmospheres in underground mines**

FOREWORD

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ISO/IEC 80079-38 has been prepared by subcommittee 31M: Non-electrical equipment and protective systems for explosive atmospheres, of IEC technical committee 31: Equipment for explosive atmospheres.

It is published as a double logo standard.

This second edition cancels and replaces the first edition, published in 2016. This edition constitutes a technical revision.

Users of this document are advised that interpretation sheets clarifying the interpretation of this document can be published. Interpretation sheets are available from the IEC webstore and can be found in the “history” tab of the page for each document.

The significance of changes between ISO/IEC Standard, ISO/IEC 80079-38, Edition 1, 2016-02 and ISO/IEC 80079-38, Edition 2, 20XX-XX is as listed below:

ISO/IEC DIS 80079-38:2025(en)

		Type		
Changes	Clause	Minor and editorial changes	Extension	Major technical changes
Throughout document where appropriate changed “equipment” and “components” to “Ex Equipment” and “Ex Components”.	General	X		
Throughout the document “machine” changed to “mining machine”.	General	X		
Throughout the body of the document removed the use of “should” by, in most cases, moving the clause to Annex C as guidance.	General			C1
References to “standard” changed to “document” where appropriate in accordance with ISO/IEC Directives.	General	X		
Throughout the document changed “e.g.” to “for example” in accordance with ISO/IEC Directives.	General	X		
Scope changed to cover “construction, testing and marking for use in Group I” from “design, construction, assessment and information for use (maintenance, repair, marking)”. Hand tools are no longer covered by the standard.	1			C2
Note added to scope to clarify that Group I takes account that coal dust may be present with or without methane.	1	X		
Note added to scope to clarify that Group I also covers mines other than coal mines.	1	X		
Note added to scope to clarify that “assembly” is not identical to the meaning in IEC 60079-46.	1	X		
Scope expanded to cover Ma as well as Mb.	1			C3
Change of definition of “firedamp” to align with definition in IEC 60079-0.	3.1	X		
Deletion of definition “protection against firedamp explosions”	Former 3.2	X		
Change of definition of “flammable substance” to align with definition in IEC 60079-10-1.		X		
Deletion of definition “component”	Former 3.4	X		
Change of definition of “equipment” to align with definition in IEC 60079-0.		X		
Deletion of definition “explosion”	Former 3.6	X		

ISO/IEC DIS 80079-38:2025(en)

		Type		
Changes	Clause	Minor and editorial changes	Extension	Major technical changes
Deletion of definition “explosive atmosphere”	Former 3.7	X		
Deletion of definition “intended use”	Former 3.8	X		
Change of definition of “machinery” to “mining machinery” with added admitted term of “mining machine”.	3.7	X		
Deletion of definition “minimum ignition energy”	Former 3.11	X		
Deletion of definition “potentially explosive atmospheres”	Former 3.12	X		
Deletion of definition “self-ignition of dust in bulk”	Former 3.13	X		
Change of definition of “Equipment Protection Level” to align with definition in IEC 60079-0.	3.9	X		
Change of definition of “EPL Ma” to align with definition in IEC 60079-0.	3.10	X		
Change of definition of “EPL Mb” to align with definition in IEC 60079-0.	3.113.13	X		
Change of definition of “maximum surface temperature to align with definition in IEC 60079-0.	3.12	X		
Introduction of definition of “safety device” from IEC TS 60079-42.	3.15	X		
Definitions from IEC 60079-0 included for “Ex Component” and “Ex Equipment”	3.3 and 3.5	X		
Introduction of requirements regarding Specific Conditions of Use	4.1		X	
Rewording of requirements for ignition hazard assessment including introduction of a calling reference to Annex A,	4.24.2	X		
Revision of requirements regarding insulation faults to provide two options.	4.4.3		X	
Introduction of requirements for temperature rating of cables.	4.4.6.1		X	
Rewording of requirements for ventilating fans	5.3.1	X		
Reference to standard under development for internal combustion engines – ISO/IEC 80079-41	5.4		X	

ISO/IEC DIS 80079-38:2025(en)

		Type		
Changes	Clause	Minor and editorial changes	Extension	Major technical changes
Reference to requirements in IEC 60079-0 for traction batteries, starter batteries and vehicle lighting batteries.	5.8	X		
Additional requirement for batteries not complying with IEC 60079-11 ia Ma to comply with IEC 60079-33 Ex sa Ma	5.8		X	
Optical radiation requirements in standard replaced with requirement to comply with IEC 60079-28.	5.9	X		
Electromagnetic and ultrasonic energy radiating equipment requirements in standard replaced with requirement to comply with IEC 60079-0.	5.10	X		
Gas monitoring now refers to IEC 60079-29-0 and does not include any other requirements.	5.11			C4
Note added to state that gas detector may be required on mobile mining machines.	5.11	X		
New section "EPL Ma equipment having the requisite Level of Protection using a second independent means" has been added.	6			C5
Subsection headings added for General and Fire resistant fluids	7.3	X		
Requirements for conveyor belting deleted.	Former 6.7			C6
Marking requirements revised including for Ma and Mb situations	9			C7
Example of an ignition hazard assessment for a conveyor belt intended for use in a coal mine deleted as conveyor belts are no longer part of the standard.	Former Annex A			C8
Deletion of annex on ignition sources as information is in ISO 80079-36	Former Annex C			C9
Deletion of Annex on Guidance on potential risks for converter-fed motors	Former Annex D			C10
Tests for surface protective coating for Group I hand tools of EPL Mb deleted as hand tools are not part of this edition.	Former Annex E			C11
Inclusion of informative guidance material, most of which was formerly in body of standard.	Annex B			C12
Bibliography revised, in particular to move documents from the reference section	Bibliography	X		

		Type		
Changes	Clause	Minor and editorial changes	Extension	Major technical changes
where not referenced and to remove documents not considered relevant.				

156

157 NOTE: The technical changes referred to include the significance of technical changes in the revised IEC Standard,
158 but they do not form an exhaustive list of all modifications from the previous version. More guidance may be found
159 by referring to the Redline Version of the standard.

160 **Explanations:**

161 **A) Definitions**

162 **Minor and editorial changes** clarification
163 decrease of technical requirements
164 minor technical change
165 editorial corrections
166

167 These are changes which modify requirements in an editorial or a minor technical way. They
168 include changes of the wording to clarify technical requirements without any technical change,
169 or a reduction in level of existing requirement.

170

171 **Extension** addition of technical options
172

173 These are changes which add new or modify existing technical requirements, in a way that new
174 options are given, but without increasing requirements for equipment that was fully compliant
175 with the previous standard. Therefore, these will not have to be considered for products in
176 conformity with the preceding edition.

177

178 **Major technical changes** addition of technical requirements
179 increase of technical requirements
180

181 These are changes to technical requirements (addition, increase of the level or removal) made
182 in a way that a product in conformity with the preceding edition will not always be able to fulfil
183 the requirements given in the later edition. These changes have to be considered for products
184 in conformity with the preceding edition.

185

186 NOTE These changes represent current technological knowledge. However, these changes should not normally have
187 an influence on equipment already placed on the market.

188 **B) Information about the background of Changes**

- 189 C1 The body of the document has been changed to only mandatory text to make it more
190 suitable to use for conformity assessment.
- 191 C2 The scope was made clearer for the application and to remove hand tools from the scope.
- 192 C3 The scope was expanded to include Ma equipment as well as Mb equipment.
- 193 C4 The relevant standard for gas monitoring has changed from IEC 60079-29 to IEC 60079-
194 29-0 and hence the latest standard is referenced.
- 195 C5 The new section now provides requirements relevant to Ma.

- 196 C6 Conveyor belts are now longer part of the scope and so requirements were deleted.
- 197 C7 Marking updated to address both Ma and Mb with the introduction of Ma in the scope.
- 198 C8 See C6 regarding conveyor belts and hence example no longer relevant.
- 199 C9 The information on ignition sources is available in ISO 80079-36 and so there is no need
200 to duplicate the information here.
- 201 C10 There is no calling clause to this annex and the information is of a general nature not
202 specific to mines
- 203 C11 With hand tools now longer in the scope, this test is no longer needed.C12 Most of the
204 guidance material from the body of the previous edition of the standard is now in this annex.

205 The text of this document is based on the following documents:

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

206
207 Full information on the voting for the approval of this document can be found in the report on
208 voting indicated in the above table. In ISO, the document has been approved by XX P members
209 out of XX having cast a vote.

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

211 A list of all parts of the IEC 60079 series, under the general title *Explosive atmospheres*, as
212 well as the ISO/IEC 80079 series, can be found on the IEC website.

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

- 216 • reconfirmed,
- 217 • withdrawn,
- 218 • replaced by a revised edition, or
- 219 • amended.

220

221 The National Committees are requested to note that for this publication the stability date
222 is **xxxx**

223 THIS TEXT IS INCLUDED FOR THE INFORMATION OF THE NATIONAL COMMITTEES AND WILL BE DELETED
224 AT THE PUBLICATION STAGE.

225

226

INTRODUCTION

This part of ISO/IEC 80079 specifies requirements for the constructional features of Ex Equipment and Ex Components that may be an individual item or form an assembly, to enable them to be used in mines, or parts of mines, susceptible to explosive atmospheres of firedamp, combustible dust or a combination of the two.

Most of the Ex Equipment used on mining machinery complies with the Type of Protection standards as an individual item of equipment, for example motors and switchgear, and they have their own marking requirements. The Type of Protection standards, however, do not deal with the interconnection of Ex Equipment and Ex Components.

Both non-electrical Ex Equipment and the interconnection of electrical/non-electrical Ex Equipment might require an ignition hazard assessment.

The need for this document arises because of major operational differences between underground mining operations and those in other industries working with, or in, explosive atmospheres. Examples of these differences are:

- firedamp can be released during the extraction of coal or other mining where firedamp is trapped;
- the ignitability of the atmosphere around Ex Equipment and Ex Components usually depends upon the amount of dilution offered by an active ventilating system;
- the atmosphere in the general body of mine air in which machinery is working can change from one that is not explosive to one that is explosive (for example, during an outburst of firedamp) and, depending on the likelihood, this may impact on the EPL required (Ma versus Mb) ;
- persons working in the mine are usually situated within the explosive atmosphere;
- there is a need to monitor constantly the mine atmosphere at strategic places to ensure that power can be disconnected from all Ex Equipment except EPL Ma Ex Equipment which is suitable for use in a constantly present explosive atmosphere;
- in gassy coal mines, an initial explosion of firedamp can raise combustible dust clouds that when ignited commonly provide a significantly more serious explosion;
- some mining machinery contains cutting devices and drilling devices that might produce an ignition risk from sparks generated from contact with strata containing high concentrations of quartz or iron pyrites; and
- long roadways in coal mines are equipped with mineral conveying systems carrying a product that has a potential for raising a combustible dust cloud and the release of firedamp.