### საქართველოს სტანდარტი

ფეთქებადსაშიში ატმოსფერო - ნაწილი 13: მოწყობილობების დაცვა დაწნევის ოთახი "p"-ს მიხედვით (იეკ 60079-13:2017)

საქართველოს სტანდარტებისა და მეტროლოგიის ეროვნული სააგენტო თბილისი

### სსტ ენ 60079-13:2017/2018

### საინფორმაციო მონაცემები

1 დამტკიცებულია და შემოღებულია სამოქმედოდ საქართველოს სტანდარტებისა და მეტროლოგიის ეროვნული სააგენტოს 2018 წლის 3 მაისის  $\mathbb{N}^2$  43 და 2018 წლის 7 მარტის  $\mathbb{N}^2$  14 განკარგულებებით

2 მიღებულია თავფურცლის თარგმნის მეთოდით სტანდარტიზაციის ევროპული კომიტეტის სტანდარტი ენ 60079-13:2017 ,, ფეთქებადსაშიში ატმოსფერო - ნაწილი 13: მოწყობილობების დაცვა დაწნევის ოთახი "p"-ს მიხედვით იეკ 60079-13:2017"

### 3 პირველად

**4 რეგისტრირებულია** საქართველოს სტანდარტებისა და მეტროლოგიის ეროვნული სააგენტოს რეესტრში: 2018 წლის 27 აპრილი №268-1.3-013100

## EUROPEAN STANDARD NORME EUROPÉENNE EUROPÄISCHE NORM

EN 60079-13

October 2017

ICS 29.260.20

Supersedes EN 60079-13:2010

### **English Version**

# Explosive atmospheres - Part 13: Equipment protection by pressurized room "p" and artificially ventilated room "v" (IEC 60079-13:2017)

Atmosphères explosives - Partie 13: Protection du matériel par salle à surpression interne "p" et salle ventilée artificiellement "v" (IEC 60079-13:2017)

Explosionsgefährdete Bereiche - Teil 13: Schutz von Einrichtungen durch einen überdruckgekapselten Raum "p" und einen fremdbelüfteten Raum "v" (IEC 60079-13:2017)

This European Standard was approved by CENELEC on 2017-06-26. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



European Committee for Electrotechnical Standardization Comité Européen de Normalisation Electrotechnique Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

### **European foreword**

The text of document 31/1309/FDIS, future edition 2 of IEC 60079-13, prepared by IEC/TC 31 "Equipment for explosive atmospheres" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60079-13:2017.

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)	2018-04-06
_	latest data by which the national	(dow)	2020 10 06

 latest date by which the national standards conflicting with the document have to be withdrawn

(dow) 2020-10-06

This document supersedes EN 60079-13:2010.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

### **Endorsement notice**

The text of the International Standard IEC 60079-13:2017 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60079-2	NOTE	Harmonized as EN 60079-2.
IEC 60079-14	NOTE	Harmonized as EN 60079-14.
IEC 60079-17	NOTE	Harmonized as EN 60079-17.
IEC 60529	NOTE	Harmonized as EN 60529.
IEC 61285	NOTE	Harmonized as EN 61285.
IEC 61508 Series	NOTE	Harmonized as EN 61508 Series.
IEC 61511 Series	NOTE	Harmonized as EN 61511 Series.

### Annex ZA

(normative)

# Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 Where 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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	EN/HD	<u>Year</u>
IEC 60050-426	-	International Electrotechnical Vocabulary - Part 426: Equipment for explosive atmospheres		-
IEC 60079-0	-	Explosive atmospheres - Part 0: Equipment - General requirements	EN 60079-0	-
IEC 60079-10-1	-	Explosive atmospheres - Part 10-1: Classification of areas - Explosive gas atmospheres	EN 60079-10-1	-
IEC 60079-29	Series	Explosive atmospheres - Part 29: Gas detectors	EN 60079-29	Series



Edition 2.0 2017-05

# INTERNATIONAL STANDARD

**Explosive atmospheres –** 

Part 13: Equipment protection by pressurized room "p" and artificially ventilated room "v"





# THIS PUBLICATION IS COPYRIGHT PROTECTED Copyright © 2017 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

IEC Central Office Tel.: +41 22 919 02 11 3, rue de Varembé Fax: +41 22 919 03 00

CH-1211 Geneva 20 info@iec.ch Switzerland www.iec.ch

#### About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

#### About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

### IEC Catalogue - webstore.iec.ch/catalogue

The stand-alone application for consulting the entire bibliographical information on IEC International Standards, Technical Specifications, Technical Reports and other documents. Available for PC, Mac OS, Android Tablets and iPad.

### IEC publications search - www.iec.ch/searchpub

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,...). It also gives information on projects, replaced and withdrawn publications.

#### IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and also once a month by email.

### Electropedia - www.electropedia.org

The world's leading online dictionary of electronic and electrical terms containing 20 000 terms and definitions in English and French, with equivalent terms in 16 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

### IEC Glossary - std.iec.ch/glossary

65 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

#### IEC Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: csc@iec.ch.



Edition 2.0 2017-05

# INTERNATIONAL STANDARD

**Explosive atmospheres –** 

Part 13: Equipment protection by pressurized room "p" and artificially ventilated room "v"

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ICS 29.260.20 ISBN 978-2-8322-4326-8

Warning! Make sure that you obtained this publication from an authorized distributor.

### CONTENTS

Fι	JKEWC		5
IN	TRODI	JCTION	7
1		e	
2		native references	
3		s and definitions	
4	Requ	uirements for all rooms	13
	4.1	General	
	4.2	Type and level of protection	
	4.2.1	· ·	
	4.2.2	Artificial ventilation "v"	14
	4.3	Construction	
	4.4	Mechanical strength	14
	4.5	Penetrations and seals	14
	4.6	Personnel access doors	14
	4.7	Inlets and outlets	15
	4.8	Ducts	15
	4.9	Purging and cleaning	15
	4.9.1	General	15
	4.9.2	Gases – Purging	15
	4.9.3	Enclosures within the room	16
	4.10	Ignition prevention under system failure	16
5	Clea	n air supply	16
	5.1	General	16
	5.2	Source of clean air	
	5.3	Environmental and air temperature conditions	
	5.4	Heating, ventilation and air conditioning services	
6		uirements for pressurized rooms	
	6.1	General	
	6.1.1		
	6.1.2	•	
	6.1.3		
	6.1.4		
	6.1.5	•	
	0.1.0	doordoor	18
	6.1.6	Airlock	18
	6.1.7	Outward air velocity through a door	18
	6.1.8		
	6.1.9	· ·	
	6.1.1	· · · · · · · · · · · · · · · · · · ·	
	6.2	Purging of rooms	
	6.2.1		
	6.2.2		
	6.2.3		
	6.3	Minimum safety provisions, safety devices and electrical disconnects	
	6.3.1		
	6.3.2	•	
		,	· · · · · · · · · · · · · · · · · · ·

	6.3.3	Gas detectors	21	
	6.4	Verification for pressurized rooms	21	
	6.4.1	General	21	
	6.4.2	Tests	21	
	6.4.3	Overpressure test	22	
	6.4.4	Purging test	22	
	6.4.5	Minimum pressure differential test	22	
	6.4.6	Confirmation of the ratings of the safety devices	22	
	6.4.7	Verification of sequence of operation of the safety devices	22	
7	Requ	irements for artificially ventilated rooms	22	
	7.1	General	22	
	7.1.1	Design	22	
	7.1.2	Source of clean air	22	
	7.1.3	Minimum flow rate	23	
	7.1.4	Ventilation system	23	
	7.1.5	Air consuming device	24	
	7.1.6	Safety actions when ventilation system fails	24	
	7.1.7	Energizing the artificially ventilated area	24	
	7.2	Purging of artificially ventilated rooms	25	
	7.2.1	General	25	
	7.2.2	Sequence of operations of the purging safety devices	25	
	7.3	Minimum safety provisions, safety devices and electrical disconnects	25	
	7.3.1	Safety devices	25	
	7.3.2	Safety devices based upon equipment protection level	25	
	7.3.3	Artificial ventilation protection	26	
	7.3.4	Gas detectors	26	
	7.4	Loss of artificial ventilation	26	
	7.5	Verification for artificially ventilated rooms	27	
	7.5.1	General	27	
	7.5.2	Tests	27	
	7.5.3	Purging test	27	
	7.5.4	Minimum ventilation flow rate test	27	
	7.5.5	Confirmation of the ratings of the safety devices	27	
	7.5.6	Verification of sequence of operation of the safety devices	27	
	7.5.7	Testing of ventilation system	28	
8	Marki	ng	28	
	8.1	General	28	
	8.2	Marking of pressurized rooms	28	
	8.3	Marking for artificially ventilated rooms	29	
9	Instru	ctions	30	
	9.1	General	30	
	9.2	Technical documentation for pressurized rooms	30	
	9.3	Technical documentation for artificially ventilated rooms	30	
	9.4	Technical documentation for rooms protected by pressurization and artificial ventilation combined	31	
	9.5	Modifications	31	
An	Annex A (informative) Maintenance32			
	A.1	Periodic verification	32	
	A.2	Modifications		

Annex B (informative) Guidelines when pressurization or artificial ventilation is not immediately restored	t 33
Annex C (informative) Examples of applications and associated guidelines	34
C.1 Examples of applications	34
C.2 Guidelines for gas turbine enclosure/package	34
Bibliography	35
Table 1 – Exclusion of specific clauses or subclauses of IEC 60079-0	g
Table 2 – Safety devices for pressurized rooms	21
Table 3 – Safety actions for artificial ventilation failure	24
Table 4 – Required safety devices for artificial ventilation	26