

EXPLOSIVE ATMOSPHERES –

Part 0: Equipment – General requirements

INTERPRETATION SHEET 2

This interpretation sheet has been prepared by IEC technical committee 31: Equipment for explosive atmospheres.

The text of this interpretation sheet is based on the following documents:

ISH	Report on voting
31/1132/ISH	31/1153/RVISH

Full information on the voting for the approval of this interpretation sheet can be found in the report on voting indicated in the above table.

Following decision No 16 of the TC 31 meeting in Melbourne in 2011, the issuing of an Interpretation Sheet for IEC 60079-0:2011 (6th edition) was requested, in order to clarify the significance of the changes with respect to the 5th edition.

Question

What are the minor editorial, extensions, and major technical changes of the 6th edition with respect to the 5th edition?

Answer

The following table shows the significance of the changes.

The significance of the changes between IEC Standard, IEC 60079-0, Edition 5, 2007-10 (Including Corrigendum No.1 and Interpretation Sheet I-SH 01) and IEC 60079-0, Edition 6, 2011-06 are as listed below:

		Type		
Explanation of the significance of the changes	Clause	Minor and editorial changes	Extension	Major technical changes
Expansion of material specification data for plastics and elastomers, including UV resistance	7.1.2		x	
Addition of alternative qualification for O-rings	7.2.3		x	
Addition of alternative criteria for surface resistance	7.4.2 a)		x	
Addition of alternative breakdown voltage limit for non-metallic layers applied to metallic enclosures	7.4.2 c)		x	
Expansion of "X" marking options for non-metallic enclosure materials not meeting basic electrostatic requirements	7.4.2 d) 7.4.2 e)		x	
Clarification that non-metallic enclosure requirements also apply to painted or coated metal enclosures	7.4.3		x	
Clarification of test to determine capacitance of accessible metal parts with reduction in acceptable capacitance	7.5 Table 9			C1
Addition of limits on zirconium content for Group III and Group II (Gb only) enclosures	8.3 8.4		x	
Introduction of "X" marking for Group III enclosures not complying with basic material requirements, similar to that existing for Group II	8.4	x		
Addition of button-head cap screws to permitted "Special Fasteners"	9.2		x	
Reference for protective earthing (PE) requirements for electrical machines to IEC 60034-1	15.3	x		
Addition of requirements for ventilating fans	17.1.5			C2
Addition of requirement for temperature rating of bearing lubricants	17.2	x		
Addition of alternative construction for disconnectors	18.2		x	
Removal of voltage limits on plugs and sockets	20.2		x	
Addition of test requirements for arc-quenching test on plugs and sockets	20.2			C3
Additional information on cell voltages	23.3 Table 12			C4
Revision to impact test of glass parts	26.4.2	x		
Revision to impact test procedure to address "bounce" of impact head	26.4.2		x	
Clarification of the test requirements for "service" and "surface" temperature	26.5.1.2 26.5.1.3	x		
Clarification of temperature rise tests for converter-fed motors	26.5.1.3		x	
Addition of alternative test method for thermal endurance	26.8 Table 15		x	
Removal of "charging test" and addition of note providing guidance	Formerly 26.14			C5
Clarification of test for the measurement of capacitance, revision of maximum capacitance	26.14			C6
Addition of tests for ventilating fans	26.15			C2
Addition of alternative o-ring testing	26.16		x	
Addition of a "Schedule of Limitations" to	28.2	x		

		Type		
Explanation of the significance of the changes	Clause	Minor and editorial changes	Extension	Major technical changes
certificates for Ex Components				
Clarification of the marking for multiple temperature classes	29.4 d) 29.5 d)	x		
Addition of marking for converter-fed motors	29.15		x	
Removal of IP marking for Group III	29.5	x		
Addition of specific instructions for electrical machines and for ventilating fans	30.3 30.4		x	

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

Explanation of the Types of Changes:

A) Definitions

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 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 requirements for equipment that was fully compliant with the previous standard. Therefore, these will not have to be considered for products 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 a product 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 products in conformity with the preceding edition. For these changes additional information is provided in clause B) below.

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

B) Information about the background of 'Major technical changes'

C1 – The values in the table have been significantly reduced based on information that is intended to be published in IEC TS 60079-32-1 (currently in preparation).

C2 – The requirements for fans was added at the request of the IECEx International Product Certification Scheme.

C3 – The test has been introduced for all disconnectors as an alternative to the voltage and current restrictions in the previous standard which were considered to be arbitrary.

C4 – There has been a slight increase in some cell voltages. This is a minor change for most protection concepts but should be regarded as a major change for equipment having a type of protection relying on energy limitation, e.g. IEC 60079-11

C5 – The charging test was removed as it had been found to be not repeatable. Guidance will be given in IEC TS 60079-32-1 (currently in preparation).

C6 – The limits for capacitance have been decreased based on technical information in CLC/TR 50404.

ATMOSPHÈRES EXPLOSIVES –

Partie 0: Matériel – Exigences générales

FEUILLE D'INTERPRÉTATION 2

Cette feuille d'interprétation a été établie par le comité d'études 31 de l'IEC: Equipements pour atmosphères explosives.

Le texte de cette feuille d'interprétation est issue des documents suivants:

ISH	Rapport de vote
31/1132/ISH	31/1153/RVISH

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à l'approbation de cette feuille d'interprétation.

Conformément à la décision n°16 prise par le CE 31 lors de sa réunion à Melbourne en 2011, la publication d'une feuille d'interprétation pour l'IEC 60079-0:2011 (6^{ème} édition) a été demandée, afin de clarifier l'importance des modifications par rapport à la 5^{ème} édition.

Question

Quelles sont les extensions éditoriales mineures et les modifications techniques majeures de la 6^{ème} édition par rapport à la 5^{ème} édition?

Réponse

Le tableau suivant met en évidence l'importance des modifications.

L'importance des modifications entre la Norme IEC 60079-0, Edition 5, 2007-10 (y compris le Corrigendum n°1 et la feuille d'interprétation I-SH 01) et l'IEC 60079-0, Edition 6, 2011-06, est indiquée ci-dessous:

Explication de l'importance des modifications	Article	Type		
		Modifications mineures et éditoriales	Extension	Modifications techniques majeures
Extension de données de spécification de matériaux pour les plastiques et les élastomères, y compris la résistance aux ultraviolets	7.1.2		x	
Ajout d'une nouvelle qualification pour les joints toriques	7.2.3		x	
Ajout de critères alternatifs concernant la résistance superficielle	7.4.2 a)		x	
Ajout d'une limite de tension de claquage alternative pour des couches non métalliques appliquées aux enveloppes métalliques	7.4.2 c)		x	
Extension des options du marquage «X» aux matériaux constitutifs d'enveloppes non métalliques qui ne sont pas conformes aux exigences électrostatiques de base	7.4.2 d) 7.4.2 e)		x	
Clarification du fait que les exigences relatives aux enveloppes non métalliques s'appliquent également aux enveloppes métalliques revêtues d'une couche de peinture ou enrobées	7.4.3		x	
Clarification de l'essai de détermination de la capacité des parties métalliques accessibles, avec une réduction de la capacité acceptable	7.5 Tableau 9			C1
Ajout de limites applicables à la teneur en zirconium pour les enveloppes des Groupes III et II (Gb uniquement)	8.3 8.4		x	
Introduction d'un marquage «X» pour les enveloppes du Groupe III, non conformes aux exigences de base pour les matériaux, analogue au marquage existant pour les enveloppes du Groupe II	8.4	x		
Ajout de vis à tête ronde pour les «fermetures spéciales» admises	9.2		x	
Référence à l'IEC 60034-1 pour les exigences de mise à la terre de protection (PE, <i>protective earthing</i>) pour les machines électriques	15.3	x		
Ajout d'exigences applicables aux ventilateurs d'aération	17.1.5			C2
Ajout d'exigences applicables aux caractéristiques assignées de température des lubrifiants de paliers	17.2	x		
Ajout d'une construction alternative pour les sectionneurs	18.2		x	
Suppression des limites de tension applicables aux prises de courant	20.2		x	
Ajout d'exigences d'essai pour l'essai d'évitement d'arc applicable aux prises de courant	20.2			C3
Informations complémentaires sur les tensions des éléments	23.3 Tableau 12			C4
Révision de l'essai de choc applicable aux parties en verre	26.4.2	x		
Révision de la procédure d'essai de choc afin de traiter du «rebond» de la pièce de frappe	26.4.2		x	
Clarification des exigences d'essai pour les températures de «service» et de «surface»	26.5.1.2 26.5.1.3	x		