

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Explosive atmospheres –
Part 31: Equipment dust ignition protection by enclosure “t”**

**Atmosphères explosives –
Partie 31: Protection contre l’inflammation de poussières par enveloppe “t”
relative au matériel**



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IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

IEC 60079-31
Edition 2.0 2013-11

EXPLOSIVE ATMOSPHERES –

Part 31: Equipment dust ignition protection by enclosure "t"

INTERPRETATION SHEET 1

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:

DISH	Report on voting
31/1604/DISH	31/1615/RVDISH

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.

IEC 60079-31:2013, Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"

Question 1:

The requirements given in 5.3.2 of IEC 60079-31:2013 (Edition 2) permit threaded entries for dust protected enclosures to be:

- Tapered threads with not less than 3 threads,
- Parallel threads with not less than five threads, with a tolerance class of 6H or better according to ISO 965-1,
- Parallel threads with less than five threads with a tolerance class of 6H or better according to ISO 965-1 and are provided with an additional seal or gasket.

Does the description of threads include other thread forms such as ISO 228-1 threads (these threads are commonly referred to as BSPP or Type G threads and BSPT or Type R threads)?

Answer 1:

No, only metric and NPT threaded entries are permitted for enclosures having equipment dust ignition protection by enclosure.

NOTE It has been determined that some sizes of Type G and NPT threads will engage but will result in a mismatched thread engagement. The intention of the restriction to only metric and NPT regarding threaded entries for dust ignition protection by enclosure is to minimize the risk of mismatch of thread forms in enclosure entries.

Question 2:

Where a thread adapter is fitted and assessed as a factory-assembled part of the dust protected enclosure, what are the permitted thread forms?

Answer 2:

A thread adapter may use thread forms other than metric and NPT, whether as an Ex Equipment thread adapter or as a thread adapter fitted and assessed as a factory-assembled part of the dust protected enclosure.

Question 3:

Can a blanking element be installed in a thread adapter which is fitted and assessed as a factory-assembled part of the dust protected enclosure?

Answer 3:

Yes, a blanking element can be installed in a thread adapter which is fitted and assessed as a factory-assembled part of the dust protected enclosure.

Question 4:

What is the required marking when a thread adapter is fitted and assessed as a factory assembled part of the dust protected enclosure?

Answer 4:

Clause 16.2 of IEC 60079-0 (Editions 6 and 7) requires identification of the specific thread type and size of threaded entries. In the case where the thread adapter is fitted and assessed as a factory-assembled part of the dust protected enclosure, the requirement for identification applies to the thread form of the adapter for the field wiring connection.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

EXPLOSIVE ATMOSPHERES –**Part 31: Equipment dust ignition protection by enclosure "t"****FOREWORD**

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

This second edition cancels and replaces the first edition published in 2008. This edition constitutes a technical revision.

The significance of changes between IEC 60079-31, Edition 2.0 (2012) and IEC 60079-31, Edition 1.0 (2008) (including Corrigendum) is as listed below:

Changes	Clause	Type		
		Minor and editorial changes	Extension	Major technical changes
Document has been restructured from the first edition	Numerous	X		
The marked maximum surface temperature shall be measured on the external surfaces of the enclosure and the surfaces of the internal components for equipment with types of protection “ta”	4.3.2			C1
Additional protection for arcing and sparking parts for “ta”	4.3.6			C2
Limiting the internal pressure test to enclosures where the seal is not physically constrained from moving.	4.4.2		X	
Requirements for tapered threaded joints without an additional seal or gasket added.	5.1.2		X	
Requirements for cable gland aligned for all levels and Groups the only difference is now the required IP protection	5.2	X		
Requirements for plain entries added	5.3.1		X	
5 threads for parallel threads only required when no seal is used	5.3.2		X	
Test for internal enclosure for level “ta” added.	6.1.1.2			C 3
Eliminating of the “fault” table and reduction of the dust layer depth for the thermal test for type of protection “ta”.	6.1.2		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.

Explanations:

A) Definitions

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.

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.

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 – A requirement was added for “ta” to require the temperature marking to be based on the highest of either the temperature produced by the internal components or the external surface temperature.

C2 – Requirements were added for “ta” equipment that contains a normally arcing part to require a supplementary internal enclosure around the arcing part.

C3 – Requires an impact test on the supplementary enclosure for “ta” equipment.

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

FDIS	Report on voting
31/1079/FDIS	31/1094/RVD

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

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

This International Standard is to be used in conjunction with IEC 60079-0.

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

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

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

The contents of the Interpretation Sheet 1 of February 2022 have been included in this copy.