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INTERNATIONAL STANDARD

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

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FOREWORD

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International Standard IEC 60079-13 has been prepared by IEC technical committee 31: Equipment for explosive atmospheres

This second edition cancels and replaces the first edition published in 2010. This edition constitutes a technical revision.

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

a) modification of the title of this document to include artificially ventilated room "v" in addition to pressurized room "p";
b) addition of types of protection "pb", "pc", and "vc" and removal of types of protection "px", "py", "pz" and "pv";
c) definition of the differences between pressurization and artificial ventilation types of protection;

d) removal of protection of rooms with an inert gas or a flammable gas from the scope of this document;

e) addition of an informative annex to include examples of applications where types of protection pressurization or artificial ventilation or pressurization and artificial ventilation can be used and associated guidelines.

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

FDIS	Report on voting
31/1309/FDIS	31/1317/RVD

Full information on the voting for the approval of this document 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 document is to be used in conjunction with the principles of hazardous area classification from IEC 60079-10-1 and artificial ventilation for the protection of analyser(s) houses from IEC 60079-16.

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 publication will remain unchanged until the stability date indicated on the IEC website 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- withdrawn,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.

A bilingual version of this publication may be issued at a later date.

INTRODUCTION

This part of IEC 60079 gives requirements for the design, construction, assessment, verification and marking of rooms used to protect internal equipment by pressurization or artificial ventilation or both as applicable when located in an explosive gas atmosphere or combustible dust atmosphere hazardous area with or without an internal source of a flammable gas or vapour. It also includes a room located in a non-hazardous area that has an internal source of release of a flammable gas or vapour.

This document deals with rooms that are partially constructed in a manufacturer’s facility and intended to have the final installation completed on-site, as well as rooms that are constructed completely on-site. Rooms partially constructed in a manufacturer’s facility may include third-party verification. For rooms built on-site, this document can be used by plant operators as a guide for assessment of those facilities.

This document represents a major technical revision of the requirements for equipment protection by pressurized room "p" and artificially ventilated room "v" and should be considered as introducing all new requirements.

EXPLOSIVE ATMOSPHERES –

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

1 Scope

This part of IEC 60079 gives requirements for the design, construction, assessment, verification and marking of rooms used to protect internal equipment:

– located in a Zone 1 or Zone 2 or Zone 21 or Zone 22 explosive atmosphere (an area normally requiring an equipment protection level (EPL) Gb, Gc, Db or Dc) without an internal source of gas/vapour release and protected by pressurization;

– located in a Zone 2 explosive atmosphere (an area normally requiring EPL Gc) with or without an internal source of gas/vapour release and protected by artificial ventilation;

– located in a non-hazardous area, containing an internal source of gas/vapour release and protected by artificial ventilation;

– located in a Zone 1 or Zone 2 or Zone 21 or Zone 22 explosive atmosphere (an area normally requiring EPL Gb, Gc, Db or Dc), containing an internal source of gas/vapour release and protected by both pressurization and artificial ventilation.

The term "room" used in this document includes single rooms, multiple rooms, a complete building or a room contained within a building. A room is intended to facilitate the entry of personnel and includes inlet and outlet ducts. An acoustic hood and other like enclosures designed to permit the entry of personnel can be considered as a room.

This document also includes requirements related safety devices and controls necessary to ensure that artificial ventilation, purging and pressurization is established and maintained.

A room assembled or constructed on site, can be either on land or off-shore. The room is primarily intended for installation by an end-user but could be constructed and assessed at a manufacturer’s facility, where the final construction such as ducting can be completed on site.

Rooms can be located in an explosive gas atmosphere requiring EPL Gb or Gc, or a combustible dust atmosphere requiring EPL Db, or Dc.

This document does not specify the methods that may be required to ensure adequate air quality for personnel with regard to toxicity and temperature within the room. National or other regulations and requirements may exist to ensure the safety of personnel in this regard.

Protection of rooms by using an inert gas or a flammable gas is outside of the scope of this document. It is recognized that such applications are special cases, which in part may be addressed using the principles from IEC 60079-2, but in all probability will also be the subject of additional, stringent engineering standards, procedures and practices. Pressurized enclosures for equipment that are not intended to facilitate the entry of personnel are addressed in IEC 60079-2, and are not in the scope of this document.

NOTE Maintenance recommendations are contained in Annex A until they can be included in IEC 60079-17.

This document supplements and modifies the general requirements of IEC 60079-0, except exclusions as indicated in Table 1. Where a requirement of this document conflicts with a requirement of IEC 60079-0, the requirement of this document takes precedence.