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**Petroleum and natural gas industries —  
Offshore production installations —  
Heating, ventilation and air-conditioning**

*Industries du pétrole et du gaz naturel — Plates-formes de production  
en mer — Chauffage, ventilation et climatisation*



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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 15138 was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*, Subcommittee SC 6, *Processing equipment and systems*.

This second edition cancels and replaces the first edition (ISO 15138:2000), which has been technically revised. It also incorporates the Technical Corrigendum ISO 15138:2000/Cor.1:2001.

# Petroleum and natural gas industries — Offshore production installations — Heating, ventilation and air-conditioning

## 1 Scope

This International Standard specifies requirements and provides guidance for design, testing, installation and commissioning of heating, ventilation, air-conditioning and pressurization systems and equipment on all offshore production installations for the petroleum and natural gas industries that are

- new or existing,
- normally occupied by personnel or not normally occupied by personnel,
- fixed or floating but registered as an offshore production installation.

For installations that can be subject to “Class” or “IMO/MODU Codes & Resolutions”, the user is referred to HVAC requirements under these rules and resolutions. When these requirements are less stringent than those being considered for a fixed installation, then it is necessary that this International Standard, i.e. requirements for fixed installations, be utilized.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced standard (including any amendments) applies.

ISO 7235, *Acoustics — Laboratory measurement procedures for ducted silencers and air-terminal units — Insertion loss, flow noise and total pressure loss*

ISO 8861, *Shipbuilding — Engine-room ventilation in diesel-engined ships — Design requirements and basis of calculations*

ISO 12241, *Thermal insulation of building equipment and industrial installations — Calculation rules*

ISO 12499, *Industrial fans — Mechanical safety of fans — Guarding*

ISO 14694:2003, *Industrial fans — Specifications for balance quality and vibration levels*

ISO 21789, *Gas turbine applications — Safety*

IEC 60079-0, *Electrical apparatus for explosive gas atmospheres — Part 0: General requirements*

IEC 60079-10, *Electrical apparatus for explosive gas atmospheres — Part 10: Classification of hazardous areas*

EN 1751, *Ventilation for buildings — Air terminal devices — Aerodynamic testing of dampers and valves*

EN 50272-2, *Safety requirements for secondary batteries and battery installations — Part 2: Stationary batteries*

ANSI/API RP 505, *Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class 1, Zone 0, Zone 1 and Zone 2*

IMO Resolution MSC 61(67): *Annex 1, Part 5 — Test for Surface Flammability*

IMO Resolution MSC 61(67): *Annex 1, Part 2: Smoke and Toxicity Test*

NFPA 96, *Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations*

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

#### 3.1

##### **active system**

system that relies on energized components

#### 3.2

##### **adequate ventilation**

air exchange that is acceptable with reference to the classification code

#### 3.3

##### **displacement ventilation**

(air displacement units) movement of air within a space in piston- or plug-type motion

NOTE No mixing of room air occurs in ideal displacement flow, which is desirable for removing pollutants generated within a space.

#### 3.4

##### **fixed offshore installation**

##### **fixed installation**

all facilities, located and installed on fixed offshore structures that are provided to extract oil and gas hydrocarbons from subsea oil and gas reservoirs

#### 3.5

##### **fixed offshore structure**

structure that is bottom-founded and transfers all actions on it to the seabed

NOTE Vessels and drilling rigs, etc. that are in transit or engaged in exploration and appraisal activities are specifically excluded from this definition.

#### 3.6

##### **fugitive emission**

continuous emission on a molecular scale from all potential leak sources in a plant under normal operating conditions

NOTE As a practical interpretation, a fugitive emission is one which cannot be detected by sight, hearing or touch but can be detected using bubble-test techniques or tests of a similar sensitivity.

#### 3.7

##### **open area**

area in an open-air situation where vapours are readily dispersed by wind

NOTE Typical air velocities in such areas are rarely less than 0,5 m/s and frequently above 2 m/s.

#### 3.8

##### **passive system**

system that does not rely on energized components