Regulations of 31 January 1984 No. 227 on precautionary measures against fire and explosion on mobile offshore units

Legal basis: Laid down by the Norwegian Maritime Authority on 31 January 1984 under the Act of 9 June 1903 No. 7 relating to public control of the seaworthiness of ships etc. Legal basis amended to Act of 16 February 2007 No 9 relating to ship safety and security (Ship Safety and Security Act) sections 7, 9, 11, 21, 28a and 45, cf. Formal Delegation of 16 February 2007 No. 171, Formal Delegation of 31 May 2007 No. 590 and Formal Delegation of 19 August 2013.
EEA references: EEA Agreement Annex II Chapter X point 6 (Directive 89/336/EEC as amended by Directive 92/31/EEC), and Chapter XIX point 1 (Directive 98/34/EC).
Amendments: Amended by Regulations of 13 January 1986 No. 33, 4 September 1987 No. 861, 12 May 1989 No. 347, 11 October 1989 No. 1037, 22 May 1990 No. 467, 17 February 1997 No 135, 2 March 1999 No. 397, 11 April 2003 No. 493, 28 June 2004 No. 1046, 29 June 2007 No. 1006, 14 March 2008 No. 305 and 18 January 2011 No. 56, 19 December 2012 No. 1345, 19 August 2013 No. 1036, 18 December 2014 No. 1911, 19 January 2016 No. 37, 5 July 2016 No. 897, 27 March 2023 No. 459, 26 June 2025 No. 1372.

Chapter I
General provisions

Section 1

Definitions

For the purpose of these Regulations, the following definitions shall apply:

1. *Unit:* Mobile platforms, including drilling ships, equipped for drilling for subsea petroleum deposits, and mobile platforms for other use than drilling for subsea petroleum deposits.
2. *Company:* Cf. the definition given in section 4 of the Ship Safety and Security Act.
3. *Safety Management System:* All systematic efforts which the company is required to make to ensure that activities are planned, organised, performed and maintained in accordance with requirements laid down in or pursuant to Act of 16 February 2007 No. 9 relating to ship safety and security.
4. *Recognised classification society:* Any classification society with which the Ministry has entered into an agreement pursuant to section 41 of the Ship Safety and Security Act:
    1. American Bureau of Shipping (ABS)
    2. Bureau Veritas (BV)
    3. DNV
    4. Lloyd's Register of Shipping (LR)
    5. Nippon Kaiji Kyoaki (Class NK)
    6. Rina Services S.p.A (RINA).
5. *MOU classification society:* A recognised classification society with which there is a supplementary agreement for carrying out inspections and surveys, etc. on mobile offshore units. The following societies are MOU classification societies:
    1. American Bureau of Shipping (ABS)
    2. DNV
    3. Lloyd's Register of Shipping (LR).
6. *Recognised standard:* Standard issued by NS/BS/API/DIN/NEPA/ISO/CEN/IEC or any other standard or body of rules, as appropriate, which is recognised nationally and/or internationally for a particular sphere of application. The Norwegian Maritime Authority may in each individual case decide which standard is considered to be recognised.
7. *Certified:*
    a) In respect of equipment and materials: Equipment which satisfies the requirements specified or materials complying with a recognised standard which are certified, approved or type-approved by:
        – a Notified Body,
        – an accredited certifying body,
        – a recognised classification society,
        – other public or private institution which is recognised by the Norwegian Maritime Authority, or
        – the administration of a country that has ratified the Safety of Life at Sea (SOLAS) Convention.
    b) In respect of the execution of work: Personnel who according to regulatory requirements are required to hold special qualifications for performing specific tasks and certified by:
        – a recognised classification society,
        – an accredited certifying body, or
        – other public or private institution which is recognised by the Norwegian Maritime Authority.
8. *FTP Code:* International Code for Application of Fire Test Procedures.
9. *Non-combustible material:* Any material that neither burns nor gives off gas in sufficient quantities for self-ignition when heated to 1pprox.. 750°C and classified as non-combustible in accordance with the FTP Code. All other materials shall be considered to be combustible materials.

10. *Low flame spread:* A surface which will satisfactorily restrict the spread of flame in accordance with the FTP Code.
11. *Standard fire test:* A fire test conducted for class 'A' and class 'B' divisions in accordance with the FTP Code.
12. *«A» class divisions:* Divisions formed by bulkheads and decks which are:
12.1. constructed of steel or other equivalent material;
12.2. be suitably stiffened;
12.3. so constructed as to be capable of preventing the passage of smoke and flame to the end of the one-hour standard fire test; and
12.4. insulated with approved non-combustible materials such that the average temperature of the unexposed side will not rise more than 140° C above the initial temperature, nor will the temperature, at any one point, including any joint, rise more than 180° C above the original temperature, within the time listed below:
class A-60: 60 minutes
class A-30: 30 minutes
class A-15: 15 minutes
class A-0: 0 minutes
13. *«B» class divisions:* Divisions formed by bulkheads, decks, ceilings or linings which:
13.1. are so constructed as to be capable of preventing the passage of flame to the end of the first half hour of the standard fire test;
13.2. have an insulation value such that the average temperature of the unexposed side will not rise more than 140° C above the original temperature, nor will the temperature at any point, including any joint, rise more than 225° C above the original temperature, within the time listed below:
class B-15: 15 minutes
class B-0: 0 minutes, and
13.3. are constructed of certified non-combustible materials and all materials entering into the construction and erection of «B» class divisions being non-combustible.
14. *«H» class divisions:* Divisions which are:
14.1. constructed of steel or other equivalent material;
14.2. adequately stiffened;
14.3. so constructed as to prevent the passage of smoke and flame for two hours when exposed to heat generated by a hydrocarbon fire as described in the revised edition of ISO 834 (HC curve);
14.4. so insulated on the fire-exposed side that the average temperature of the unexposed side will not rise more than 140° C above the initial temperature. Nor will the temperature at any one point, including any joint, rise more than 180° C above the initial temperature, within the time listed below:
Class H-120: 120 minutes
Class H-60: 60 minutes
Class H-0: 0 minutes; and
14.5. insulated using certified non-combustible materials. Materials that are not completely non-combustible may be used if such use is documented by tests and analyses to be justifiable from a safety perspective.
15. *Control stations:* spaces where the following are located: radio, main navigation equipment, equipment for operation and control of ballast pumps, ballast valves and permanently installed fire extinguishing systems, centres for fire-recording equipment, centres for equipment for alarm and public address system, centres for equipment for closing watertight doors and fire doors, or emergency sources of power.
16. *Accommodation spaces:* spaces used for public spaces, corridors, stairway enclosures, lavatories, cabins, offices, crew accommodation, barber shops, remote isolated pantries and similar spaces.
17. *Public spaces:* those portions of the accommodation which are used for lounges, dining rooms, common rooms and similar permanently enclosed spaces.
18. *Service spaces (low risk):* spaces used for lockers, and store-rooms having a floor area of less than 2 m^2, drying rooms and laundries.
19. *Service spaces (high risk):* galley, main pantries (except isolated pantries), store-rooms having a floor area of more than 2 m^2, mail and specie rooms, workshops other than those forming part of the machinery spaces, and similar spaces and trunks to such spaces, and paint and lamp rooms.
20. *Oil fuel unit:* is the equipment used for the preparation of oil fuel for delivery to an oil-fired boiler, or equipment used for the preparation for delivery of heated oil to an internal combustion engine, and includes any oil pressure pumps, filters and heaters dealing with oil at a pressure of more than 1.8 kp/cm^2.
21. *Machinery spaces of category A:* All spaces containing internal combustion machinery used for the unit's main propulsion, or where the aggregate total output of the internal combustion machinery is not less than 375 kW, or spaces containing any oil-fired boiler or oil fuel unit, and trunks to such spaces.
22. *Machinery spaces:* All machinery spaces of category A and all other spaces containing propulsion machinery, boilers, oil fuel units, steam and internal combustion engines, generators and major electrical machinery, oil filling stations, refrigerating, stabilizing, ventilation and air conditioning machinery, switchboard spaces and rooms containing only electrical equipment, and similar spaces and trunks to such spaces.

23. *Steel or other equivalent material:* where the words «steel or other equivalent material» occur, «equivalent material» means any material which, by itself or due to insulation provided, has structural and integrity properties equivalent to steel at the end of the applicable exposure to the standard fire test (e.g. aluminium alloy with appropriate insulation).
24. *Hazardous area:* Hazardous areas are all those areas where, due to the possible presence of a flammable atmosphere, the use without proper consideration of machinery or electrical equipment may lead to fire hazard or explosion.

    Hazardous areas are divided into zones 0, 1 and 2:

    Zone 0: in which an explosive gas/air mixture is continuously present or present for long periods.

    Zone 1: in which an explosive gas/air mixture is likely to occur in normal operation.

    Zone 2: in which an explosive gas/air mixture is not likely to occur, and if it occurs it will only exist for a short time.
25. *Open deck:* (see section 20): all open deck areas and other exposed surfaces except hazardous areas.
26. *Drilling area:* area for drilling derrick with appurtenant equipment.
27. *Design fire:* A fire which according to the defined acceptance criteria poses an unacceptable risk and which therefore forms the basis of the design and use of the mobile offshore unit.

Amended by Regulations of 2 March 1999 No. 397 (in force on 1 Sept 1999), 11 April 2003 No. 493 (in force on 1 July 2003), 29 June 2007 No. 1006 (in force on July 2007), 14 March 2008 No. 305 (in force on 24 March 2008), 18 Jan 2011 No. 56, 5 July 2016 No. 897, 27 March 2023 No. 459.

Section 2

Scope of application

1. These Regulations apply to mobile offshore units which are registered or will be registered in a Norwegian ship register.
2. Mobile offshore units which are registered in a Norwegian ship register may, until the next certificate issue, comply with the requirements that applied at the time of the last certificate issue.

Amended by Regulation of 11 April 2003 No. 493 (in force on 1 July 2003).

Section 2 A

Duties

The company, employer, offshore installation manager and others who have their work on board shall perform their duties in accordance with the Ship Safety and Security Act and the supplementary provisions laid down in these Regulations.

Amended by Regulations of 11 April 2003 No. 493 (in force on 1 July 2003), 29 June 2007 No. 1006, 19 August 2013 No. 1036 (in force on 20 August 2013).

Section 3

Documentation

The company shall be able to document that the requirements of these Regulations are complied with. Documentation shall be sent or presented to the Norwegian Maritime Authority on request. The contents, scope and type of documents and the time of submission shall be decided by the Norwegian Maritime Authority.

The company shall be able to document that electrical installations and area classification (hazardous areas) comply with the regulation in force on electrical installations, maritime installations, and the regulation on electrical equipment laid down by the Norwegian Directorate for Civil Protection[1]. The contents, scope and type of documents and the time of submission shall be decided by the Norwegian Directorate for Civil Protection, which upon request shall receive the requested documentation direct.

Amended by Regulations of 17 Feb 1997 No. 135 (in force on 1 Jan 1998), 2 March 1999 No. 397 (in force on 1 Sept 1999), 11 April 2003 No. 493 (in force on 1 July 2003), 28 June 2004 No. 1046, 29 June 2007 No. 1006 (in force on 1 July 2007).

6 The Regulations implement Directive 89/336/EEC (EMC Directive) of 3 May 1989 with amendment directive 92/21/EEC. The EMC Directive applies to all pieces of equipment on mobile offshore units which may cause electromagnetic disturbance or whose functioning can be influenced by such disturbance. Among others, EMC Directive require CE-marking of all such equipment.

Section 3A

Repealed by Regulation of 11 April 2003 No. 493, in force on 1 July 2003.

Section 3B

Mutual recognition

Where the Regulations require that particular fittings, materials, equipment or devices or type of equipment etc. be procured or found on a vessel, or that some specific measure be taken or the construction or design safety specific requirements, the Norwegian Maritime Authority shall permit that other appurtenances, materials, devices or types of such are installed or found on the vessel or that other measures are taken on board or that the vessel is built or designed in another way.

The Norwegian Ma4pprox Authority shall accept this provided that it is documented by testing or other means that the appurtenances, materials, equipment or devices or types of such, or the arrangement, construction or design is at least as effective as specified by the requirements of these Regulations.

The Norwegian Maritime Authority shall accept the results of tests performed by recognised testing institutions, including testing institutions in other EEA countries. Such acceptance will be given on condition that the tests give an appropriate and satisfactory guarantee of a technical, professional, and independent nature.

Added by Regulation of 2 March 1999 No. 297 (in force on 1 Sept 1999).

Section 4[1]

Risk assessments

1. *Spaces/areas with fire or explosion hazards.*

1.1. A risk assessment shall be carried out with regard to fire safety precautions for all spaces and areas. The risk assessment may be a Failure Mode and Effect Analysis (FMEA).

2. Accommodation quarters. Control stations.

2.1. A risk assessment shall be carried out with regard to the ability of accommodation quarters to withstand the accident loads which may be expected to have significance for this area. Control stations which must be kept operational for a certain period of time after the accident took place (such as control station for anchor operation) shall be particularly considered.

2.2. Outer surfaces of accommodation quarters and control stations which may be exposed to hydrocarbon fires, shall be protected on the outside. If the risk assessment carried out, including the evacuation plan, requirements for operation of the unit in the relevant accident situation and arrangements otherwise, shows that protection in excess of the requirements of 20, subparagraphs 2 and 3, is necessary, the external fire protection shall be dimensioned to keep structures intact for the time considered to be necessary. As a guide, a minimum of 1/2 hour is stipulated for maintaining operational capability.

3. *Evacuation routes.*

3.1. A risk assessment shall be carried out with regard to evacuation routes from all parts of the platform to the rescue stations. Protection of the evacuation routes against fire and explosion in the different areas shall also be considered – also taking consideration the accident loads which may arise as a result of a blow-out of gas/oil in the well area, or as a result of discharge of gas from the mud treatment system, pipes, gas separators and similar equipment.

Amended by Regulation of 11 April 2003 No. 493 (in force on 1 July 2003).

6 Refer also to Regulations of 22 December 1993 No. 1239 on risk analyses for mobile offshore units.

Section 5

General provisions

1. On all units, updated fire control drawings shall be displayed, giving a schematic presentation of fire preventive and fire extinguishing arrangements. The drawings shall be permanently displayed in the control stations and central, clearly visible places in the accommodation spaces which permits of a quick survey and they shall give a clear picture of the arrangements. Coloured symbols in accordance with IMO Res. 654(16), NS 6160 or equivalent approved standards shall be used.
2. It is the duty of everybody on board to exercise caution when dealing with anything which may cause a fire. This applies in particular in the case of storage and use of inflammable equipment and materials, such as explosives, inflammable fluids and gases, and substances which are liable to self-ignite, etc.
3. Where a particular fire-extinguishing system, equipment or arrangement is required, this may be substituted by a corresponding other system, equipment or arrangement which can be documented to be at least as effective as that which is required.
4. Use of fire, naked lights or performance of spark-inducing work operations is only allowed where this can take place without risk of fire or explosion and only with the consent of the fire safety supervisor. No-smoking shall be notified by the necessary number of signs in Norwegian and English and by internationally understood symbols in the areas covered by the prohibition.
5. Welding or cutting with gas or electricity must take place in a safe manner and in accordance with the regulations in force at the time in question. Equipment for electric welding shall comply with the regulations stipulated by the Norwegian Directorate for Civil Protection. Whenever hot work is planned, a permit must be issued prior to the commencement of such work. The work must be carried out with the observance of all necessary safety rules. The fire safety supervisor shall ensure:
   - that welding and cutting equipment is in order;
   - that the work area is gas-free, and that as far as possible no combustible articles are located near the work area. Combustible articles which cannot be removed, must be properly covered.
   - that a duty firefighter and necessary fire safety equipment are at hand. After completion of the work, the work site shall be inspected carefully so that smouldering fires is prevented.

Amended by Regulations of 11 April 2003 No. 493 (in force on 1 July 2003), 28 June 2004 No. 1046.

Chapter II
Fire extinguishing

Section 6

Fire pumps

1. The unit shall be provided with at least 2 separate fire pump systems. One system shall be connected to the emergency power source. The fire pumps shall normally only be used to fight fires. By fire pump system is meant the total system for feeding water, i.e. water inlet, fire pump(s), delivery pipes, power source(s), power transmission(s), fuel line(s)/tank(s).
2. The fire pump systems shall be separated and be located so that fire in one area does not put all fire pump systems out of operation. For each system, remote starting of pumps and remote control of necessary valves shall be arranged.
3. Each fire pump system shall have capacity to simultaneously deliver the quantities of water calculated to be necessary for the biggest design fire[1]. The total fire pump capacity shall in no case be less than 180 m^3/hour. The pressure shall be suited to calculated consumption and sufficient to satisfactorily operate the fire-extinguishing equipment in use. The fire main pressure shall in no place be less than 7 bar at the greatest calculated consumption.
4. Fire pumps shall start automatically upon a drop in pressure in the ring main. In the command centre from which fire extinguishing is being led, and in any other places from which the fire pumps can be operated, there shall be a satisfactory indication of whether the fire pump system is running or not running.

Amended by Regulation of 11 April 2003 No. 493 (in force on 1 July 2003).

1 Reference is also made to Regulations of 22 December 1993 No. 1239 on risk analyses for mobile offshore units.

Section 7

Fire mains

1. There shall be a ring main for fire water supply to all areas on the unit. The design of the fire mains shall be in accordance with the requirements of the MOU classification society and the diameter of the fire main shall be sufficient to supply water for the greatest calculated consumption.
2. Each fire pump system shall be connected to the ring main in a suitable way, so that damage to the fire main in an area does not cause all supplies to be lost.
3. The ring main with supply shall to the greatest possible extent be routed outside areas where it might easily be subject to damage. The ring main shall be protected against outside influences where necessary.
4. The ring main shall be equipped with the necessary number of shut-off valves and cross lines to be able to isolate parts of the ring main. Service lines to hazardous areas shall be connected to the ring main outside the hazardous area. Service lines to hazardous areas shall be connected to the ring main outside the hazardous area. Service lines to machinery spaces of category A, mud rooms, shale shaker rooms, drilling areas, production plants, etc. shall be provided with shut-off valves which are located in readily accessible places outside the areas referred to above. Such valves shall, in addition to manual operation, be capable of remote control if located in less accessible places or where it is likely that any possible explosion or fire makes them less accessible or dangerous to approach.
5. The fire-fighting system shall be protected against frost regard being had to the minimum temperatures which may be expected. Insulation of the fire main and arrangement of heating coils around the main will be required for units operating in cold waters.

Amended by Regulation of 11 April 2003 No. 493 (in force on 1 July 2003).

Section 8

Hydrants and fire hoses, etc.

1. The number and position of hydrants shall be such that at least two jets of water not emanating from the same hydrant can reach any part of the unit. One jet of water shall be discharged from a single hose length and the other from maximum three hose lengths. One single hose length shall not exceed 15 m and not be less than 10 m. At each hydrant there shall be a hose station. A hose station shall consist of hose with associated dual purpose (jet and waterfog) nozzle including connection joints to the hydrant and 2 sets of connecting keys.
2. Fire hoses shall, together with the necessary equipment, adaptors and tools, be kept ready for use in easily accessible places near the hydrants and shall be stored in lockers suitable for the purpose. Fire hoses shall be at least 51 mm in diameter. Within the accommodation a smaller diameter is acceptable. All connections shall fit everywhere on the unit.

Amended by Regulation of 11 April 2003 No. 493 (in force on 1 July 2003).

Section 9

International shore connection

The unit shall be provided with at least one international shore connection in accordance with Regulation 19 of Chapter II-2, SOLAS 1974 as amended in 1981. The shore connection shall be able to be connected to the fire main on any side of the unit.

Amended by Regulation of 11 April 2003 No. 493 (in force on 1 July 2003).

Section 10

Fire extinguishing arrangements in machinery spaces and other spaces of high fire risk

1. The following spaces shall be provided with a fixed-arrangement fire extinguishing system for total space extinguishing:

1.1. All machinery spaces of category A, including emergency generator room regardless of output.

1.2. Machinery spaces other than machinery spaces of category A which are of vital importance to the safety of the unit where manual fire fighting would be incapable of preventing considerable damage or would entail great danger to the fire-fighting personnel. Examples of such spaces could be thruster rooms, pump rooms, switchboard rooms, and transformer rooms.

1.3. Any space other than a machinery space where the fire risk according to the risk analysis is estimated to be so high that manual fire fighting will not be sufficient or will entail great danger to the fire-fighting personnel.

2. The following types of fixed-arrangement fire extinguishing systems are acceptable:

2.1. Fixed fire-extinguishing systems shall comply with the requirements of SOLAS 1974, consolidated edition 2014 chapter II-2, regulation 10.4.1.1. Gas fire-extinguishing systems shall not use gases as referred to in SOLAS chapter II-2 regulation 10.4.1.3, carbon dioxide or other gases which are toxic to humans in the concentrations necessary to extinguish fires.

2.2. Water fire-extinguishing systems shall have a pressure tank capable of supplying the fire-extinguishing system with the amount of water necessary to achieve complete fire protection of the area needing the largest amount of extinguishing water for at least one minute, cf. section 26 subparagraph 2.5. The volume of the tank shall be at least twice as large as the amount of water required to fulfil the requirement of the first sentence. The tank shall be capable of manual release.

2.3 A fixed high-expansion foam fire-extinguishing system in accordance with SOLAS Chapter II-2, Regulation 9.

3 In addition to the requirements of subparagraph 2, the following applies:

3.1 The fire-extinguishing system shall be connected to a fire detection system. The fire-extinguishing system shall be released automatically in the event of fire and shall be secured against error sources from the fire detection system, and shall in addition be capable of manual release.

3.2 In spaces where unintentional release of the system could cause a critical situation or risk to life or health, the system shall only be capable of manual release.

4. In addition to systems required in subparagraph 1, machinery spaces of category A shall be provided with one portable dry-powder extinguisher with a kink-free hose containing at least 25 kg powder, and also at least one certified portable foam applicator unit (cf. subparagraph 4). In lieu of a portable foam applicator unit, a 50 kg portable certified powder aggregate with 8 m hose with nozzle may be accepted. In addition there shall be a sufficient number of certified portable fire extinguishers, nevertheless at least 2 in every category A machinery space and in emergency generator rooms.

5. Portable foam applicator units.

5.1. Foam applicator units with a foam rate of 6-10: One foam applicator unit shall consist of:
- One foam nozzle having a water capacity of 400-500 l/minute at 5 bar
- One intermediate injector with a suction hose of 2.5 m
- One 25 m hose (same dimension as the other hoses on board)
- Two containers of foam concentrate each containing 20-30 l.

5.2. Foam applicator units with a foam rate of 75-200: One foam applicator unit shall consist of:
- One intermediate foam pipe having a water capacity of at least 150 l/minute at 5 bar
- One intermediate injector with a suction hose of 2.5 m
- One 25 m hose (same dimension as the other hoses on board)
- Two containers of foam concentrate each containing 20-30 l.

5.3. Hose connections shall fit all hydrants on board. The required foam containers shall be corrosion resistant.

5.4. The above equipment shall be stored in a box of steel or other equivalent material. The box shall be provided with brief instructions for use written in Norwegian and English. The instructions for use shall, as far as possible, illustrate the application of the equipment with symbols/drawings.

Amended by Regulations of 11 April 2003 No. 493 (in force on 1 July 2003), 18 December 2014 No. 1911 (in force on 1 January 2015).

Section 11

Fire extinguishing system for galley ventilation

A permanently installed fire-extinguishing system shall be provided in the extractor ventilation duct from the grease filter from the galley. When the system is released, the ventilation shall shut down automatically and the fire dampers shall close.

Section 12

Portable fire extinguishers

1. Accommodation spaces, machinery spaces, service spaces and other areas where fires may break out, shall be provided with a sufficient number of certified portable fire extinguishers. These extinguishers shall be located in appropriate places and shall always be ready for use. One of the portable fire extinguishers intended for use in a particular space, shall be placed near the entrance to that space. Extinguishers which may be exposed to freezing shall be frost-proof. Sufficient quantities of recharging material for the portable fire extinguishers shall be provided on the unit at all times.
2. Required portable fire-extinguishers shall have a total weight not exceeding 20 kg. CO_2 extinguishers shall have a CO_2 charge of at least 5 kg. Water extinguishers shall have a charge of at least 9 l. Dry-powder extinguishers shall have a charge of at least 12 kg.
3. In the accommodation, there shall be no more than 15 m between each portable fire extinguisher. All public spaces shall be provided with portable fire extinguishers. In corridors at least one portable fire extinguisher shall be placed at each exit.
4. The following types of extinguishers and appropriate combinations of extinguishers, shall as a general rule be used in the various parts of the unit:

   Accommodation:
   – water extinguishers and
   – dry-powder extinguishers and, if desired, in addition to this
   – CO_2 extinguishers.

   Dry-powder extinguishers shall be located in the vicinity of fuse boxes and other electrical installations.

   Water extinguishers shall be located so that there is always another water extinguisher within reasonable distance.

   Control stations:
   – dry-powder extinguishers, and/or
   – CO_2 extinguishers.

   Machinery spaces:
   – dry-powder extinguishers, and/or
   – CO_2 extinguishers.

   Service areas:
   – water extinguishers, and/or
   – dry-powder extinguishers, and/or
   – CO_2 extinguishers.

Amended by Regulation of 11 April 2003 No. 493 (in force on 1 July 2003).

Section 12a

Control of fire-fighting equipment

1. Fire-fighting equipment and fire alarm systems shall be inspected in accordance with MSC.1/Circ.1432 (Revised guidelines for the maintenance and inspection of fire protection systems and appliances), and Res. A.951(23) (Improved guidelines for marine portable fire extinguishers) or NS 3910:2015 (Firefighting equipment – Maintenance of portable fire extinguishers).
2. The portable fire extinguishers shall be pressure-tested every ten years.
3. Annual inspections of equipment as referred to in sections 10 to 12, and inspections every two, five and ten years pursuant to the first and second paragraphs shall be undertaken by a person holding a qualification document for the relevant area of inspection.
4. Other inspections pursuant to the first paragraph shall be undertaken by crew members holding a certificate of proficiency in advanced fire-fighting or a certificate of competency deck officer of engineer officer, cf. Regulations of 22 December 2011 No. 1523 on qualifications and certificates for seafarers section 51.

Added by Regulation of 19 January 2016 No. 37 (in force on 1 February 2016).

Section 13

Firefighter's outfit

1. Each unit shall be provided with at least 8 sets of firefighter's outfit.
2. Each set of firefighter's outfit shall consist of:

2.1. One certified self-contained compressed air breathing apparatus. The breathing apparatus shall be capable of functioning for at least 2 hours including necessary spare charges, based on an air consumption of 60 l/minute. Each breathing apparatus shall be supplied with one extra membrane, one set of gaskets, one extra headband set, one box of silicone grease, and necessary tools. Additionally, 3 sets of instruction manuals and posters for each type of apparatus which is delivered on board shall be provided.

2.2. A fire-proof lifeline of sufficient length (8pprox.. 30 m) and strength attached by means of a snaphook to a harness.

2.3. A safety lamp (hand lamp) certified for use in a hazardous area, zone 1. Where dry batteries are used, these shall be of an alkaline type.

2.4. A small fire-axe capable of being attached to a belt or a harness.

2.5. A suitable protective suit for fire-fighting and smoke diving operations satisfying the requirements of EN 469.

2.6. One set of safety boots and gloves.

2.7. One fire helmet with vizor and neck protector.

2.8. A blanket made of fire-retardant material.

Amended by Regulations of 11 April 2003 No. 493 (in force 1 July 2003), 18 December 2014 No. 1911 (in force on 1 January 2015), 26 June 2025 No. 1372.

Section 14

Supplement for firefighter's outfit

In addition to the firefighter's outfit, the following shall be provided on board:

1. One high pressure compressor suitable for filling air bottles for compressed air-operated breathing apparatus. The compressor shall have a capacity of at least 75 l free air per minute. The compressor shall be located where the air is clean enough to be used as breathing air.
2. One portable certified UHF radio set for internal communication for each set of firefighter's outfit, extinguishing supervisor, technical fire team, and wheelhouse, at least 11 sets. The sets shall also be certified for use in a hazardous area, zone 1. The radio sets may be used for other internal communication on board but the required number of sets shall always be available in case of fire. The UHF sets shall have connecting cables for smoke diving equipment.
3. One certified self-contained compressed air breathing apparatus intended for use in the radio room and located near the entrance to the radio room.
4. For every other set of firefighter's outfit:
   - a portable acetylene/oxygen cutting apparatus;
   - a crowbar and one steel bar with a wedged tip.
5. The necessary number of axes, to be placed in the vicinity of exits.
6. Key personnel with supervising responsibility in the event of a fire according to the unit's muster list shall wear clothing the colour or marking of which is clearly distinguishable from that of other personnel.

Amended by Regulations of 11 April 2003 No. 493 (in force on 1 July 2003), 18 December 2014 No. 1911 (in force on 1 January 2015), 26 June 2025 No. 1372.

Section 15

Storage and location of firefighter's outfit

The firefighter's outfits shall be stored in special rooms, and shall be ready for immediate use. The outfits shall be stored in at least four locations separated from each other so that access to all firefighter's outfits cannot be blocked by fire in one area. At least two outfits should be stored at each location. Equipment referred to in section 13 subparagraph 2 shall be stored together. Two of the sets shall be stored in the vicinity of the helicopter deck.

Amended by Regulations of 11 April 2003 No. 493 (in force on 1 July 2003), 26 June 2025 No. 1372.

Chapter III
Fire safety measures on helicopter decks

Sections 16-18

Repealed by Regulation of 2 March 1999 No. 397, in force on 1 September 1999.

Chapter IV
Fire safety measures

Section 19

Protection of accommodation spaces, service areas, machinery spaces and control stations

1. The hull, superstructures, load-bearing bulkheads, deck and deck houses shall be constructed of steel or other equivalent material.
2. Corridor bulkheads, including doors, shall satisfy the requirements for fire-safe Class A or Class B divisions, cf. section 20. The bulkheads shall extend from deck to deck and all the way to adjacent bulkheads. If the ceiling all the way is of Class B-15, the corridor bulkheads may terminate at the ceiling. Doors to the accommodation may be provided with a small closable ventilation grill in the lower part.
3. Stairways shall be made of steel or equivalent material. A stairway connecting only two decks shall be enclosed on at least one of the decks. The enclosure shall be of steel or non-combustible bulkhead class B. Stairways connecting more than two decks shall be enclosed on all decks. Such enclosures and doors shall be of steel and insulated to at least A-60 with the exception of boundaries to rooms of little or restricted fire risk. Doors in stairway enclosures shall be close-fitting, self-closing and without ventilation openings. Self-closing doors shall not be capable of being kept open by means of a hold-back hook. Doors may be kept open by means of magnetic door holders or the like which are released in conjunction with the fire alarm system or which can be remote-released.
4. Lift trunks and doors to such trunks shall be of steel. Any trunk connecting more than two decks shall be insulated as a stairway enclosure.
5. Air spaces enclosed behind ceilings, panelling or linings shall be suitably divided by closefitting draught stops not more than 14 m apart.
6. Ceilings, linings, bulkheads and insulation, except for insulation in cooling and refrigerating rooms, shall be of non-combustible material. Vapour barriers and adhesives used in connection with insulation and also insulation materials for cold water pipes, need not be of non-combustible materials. The use of such materials shall nevertheless be as restricted as practicable, and uncovered surfaces shall have low flamespread characteristics.
7. Framework and nailbattens and their associated grounds and joining pieces for bulkheads, linings, ceilings and draught stops shall be made of non-combustible material.
8. Deck coverings shall be of a certified material which does not readily ignite and which has low flame spread characteristics and does not pose a toxic or explosion hazard at high temperatures as determined in accordance with the FTP Code.
9. Surface materials of interior bulkheads, linings, and ceilings shall be certified, have low flame spread characteristics and shall not generate large amounts of smoke or toxic substances as determined in accordance with the FTP Code. This requirement shall also apply to any barrier laminates on the backside of the panelling or ceiling.
10. Paints, varnishes and other types of finishes used on interior surfaces shall be certified, have low flame spread characteristics and shall not generate large amounts of smoke or other toxic substances as determined in accordance with the FTP Code.
11. Furniture, cupboards, curtains, carpets, etc. shall comply with the following requirements:

11.1. Furniture with drawers or cabinets or cupboards, for instance desks, wardrobes, dressing tables, chests of drawers or dressing chests shall be made of certified, non-combustible material, except that the surface of such furnishings may be a combustible veneer not more than 2 mm thick.

11.2. Free-standing furniture such as chairs, sofas, beds and tables shall be made with frames of non-combustible material.

11.3. Curtains and other hanging textiles shall be made of materials certified in respect of their resistance to the spread of flames as determined in accordance with the FTP Code.

11.4. Carpets shall be certified in respect of their low flame spread characteristics.

11.5. Materials used for all upholstery purposes and bedding shall be certified in respect of their resistance to ignition and the spread of flames as determined in accordance with the FTP Code.

12. Ventilation ducts leading to hazardous areas shall not be permitted to pass through accommodation spaces, service spaces or control stations.
13. Ventilation ducts leading to accommodation spaces, service spaces or control stations shall not be permitted to pass through hazardous areas.
14. Ventilation ducts for machinery spaces of category A and galleys shall not be permitted to pass through accommodation spaces, service spaces or control stations where such ducts are not in accordance with the specifications laid down in subparagraphs 14.1 or 14.2:

14.1. The ducts are made of steel and with a thickness of at least 3 mm in the case of ducts with a diameter/width of up to 300 mm and at least 5 mm in the case of ducts with a diameter/width equal to or greater than 760 mm. For canal sizes between 300 and 760 mm the thickness of the steel shall be determined by interpolation.

The ducts are insulated to Class A-60 standard throughout in accommodation spaces, service spaces or control stations.

14.2. The ducts are constructed as provided in 14.1 first sentence and fitted with fire dampers near the spaces to which the ducts lead. The ducts are insulated to Class A-60 standard from the machinery spaces and galleys to at least 5 m beyond each fire damper.

15. Ventilation ducts for accommodation spaces, service spaces or control stations shall not be permitted to pass through machinery spaces of category A and galleys where such ducts are not in accordance with the specifications laid down in subparagraphs 15.1 or 15.2:

15.1. The ducts are constructed as provided in 14.1 and insulated to Class A-60 standard within machinery spaces of category A and galleys.

15.2. The ducts are constructed as provided in 14.1 within machinery spaces of category A and galleys and fitted with fire dampers in the divisions to those spaces.

16. All ventilation ducts, where not required to be constructed of steel, shall be of certified non-combustible material.

17. Where ventilation systems penetrate bulkheads or decks of category A, precautions shall be taken to reduce the likelihood of smoke and hot gases passing from one deck to another through the system. Ventilation ducts shall, where necessary, be insulated as required for the relevant bulkhead or deck.

Ducts of 750 cm^2 or more in sectional area which penetrate bulkheads or decks of category A shall be fitted with fire dampers. Penetrations less than 750 cm^2 in sectional area need not be fitted with fire dampers provided the penetration for a total length of at least 900 mm is made of steel, has a thickness of at least 3 mm and is fire insulated to the same standard as the relevant bulkhead or deck. Ventilation ducts may penetrate adjoining spaces without fire dampers being fitted provided the ducts in their entire length within said spaces have the same fire integrity as the deck or bulkhead which the duct penetrates.

18. Fire dampers shall be automatic. Additionally, they shall be capable of being operated (opened/closed) from the control station and locally from both sides of the division in which they are fitted. Indication of the actual position (opened/closed) of the fire dampers shall be provided locally and in the control station. The fire dampers shall be certified in accordance with IMO resolution A.754(18) or equivalent.

19. Main intakes and outlets of all ventilation systems shall be capable of being closed from an easily accessible and safe place outside the spaces being ventilated. Additionally, it shall be possible to close such openings from the control station.

20. Ventilation fans shall also be capable of being stopped from the places referred to in the preceding subparagraph.

21. Where in individual cases other materials than steel are permitted to be used in pipe systems for sanitary systems, etc., penetrations in bulkheads and decks of category A shall be made of steel and shall have a total length of at least 900 mm, or other certified penetration.

22. Windows and sidescuttles facing the drill-floor shall be provided with dead-lights of steel or equivalent material. Such dead-lights may be substituted by a water deluge system which protects the windows and sidescuttles. Windows and sidescuttles approved for a thermal load corresponding to A-60 rating may be used without deadlights or deluge systems.

23. Windows and sidescuttles, except windows in wheelhouses, shall be of a non-opening type. Windows in wheelhouses shall, if they can be opened, be capable of being closed quickly.

24. Exterior doors shall be made of steel and shall be self-closing. Stricter rules may be applied in pursuance of other sections or regulations.

Amended by Regulation 11 April 2003 No. 493 (in force on 1 July 2003).

Section 20

Fire integrity of bulkheads and decks

1. In addition to requirements referred to in section 19, bulkheads and decks shall as a minimum be constructed and insulated in accordance with the tables in subparagraphs 2 and 3.

2. Fire integrity of bulkheads separating adjacent areas.[1]

Spaces		*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*
Control stations	(1)	A-0 d/	A-60	A-60	A-60	A-60	A-60 a/	A-60 a/	A-60 e/	A-60	+
Corridors	(2)		C	B-15	B-15 A-0 b/	B-15	A-60	A-0	A-0 e/	A-0	+
Accommodation spaces except corridors and stairways	(3)			B-15 A-0 b/	B-15 A-0 b/	B-15	A-60	A-0	A-0 e/	A-30	+
Stairways	(4)				B-15 A-0 b/	B-15 A-0 b/	A-60	A-0	A-0 e/	A-0	+ +

Service areas (low risk)	(5)					C	A-60	A-0	A-0	A-0	+
Machinery spaces of category A	(6)						+ a/	A-0 a/	A-60 e/	A-60	+
Other machinery spaces	(7)							A-0 a/c/	A-0 e/	A-0	+
Hazardous areas	(8)								–	A-0 e/	–
Service spaces (high risk)	(9)									A-30 c/	+
Open deck	(10)										–

3. Fire integrity of decks separating adjacent areas1.

Spaces below ¬, above ∅		*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*
Control stations	(1)	A-0	A-0	A-60	A-0	A-15	A-60	A-60	A-60 e/	A-60	+
Corridors	(2)	A-60	+	+	A-0	+	A-60	A-0	A-0 e/	A-0	+
Accommodation spaces except corridors and stairways	(3)	A-60	A-0	+	A-0	+	A-60	A-0	A-0 e/	A-0	+
Stairways	(4)	A-60	A-0	A-0	+	A-0	A-60	A-0	A-0 e/	A-0	+
Service areas (low risk)	(5)	A-60	A-0	A-0	A-0	+	A-60	A-0	A-0	A-0	+
Machinery spaces of category A	(6)	A-60	A-60	A-60	A-60	A-60	+ a/	A-60	A-60 e/	A-60	+
Other machinery spaces	(7)	A-60	A-0	A-0	A-0	A-0	A-0 a/	+ a/	A-0 e/	A-0	+
Hazardous areas	(8)	A-60	A-0	A-0	A-0	A-0	A-60	A-0	–	A-0 e/	–
Service areas (high risk)	(9)	A-60	A-0	A-60	A-0	A-0	A-0	A-0	A-0 e/	A-0 c/	+
Open deck	(10)	+	+	+	+	+	+	+	–	+	–

1 Notes to be applied to the tables in section 20, subparagraphs 2 and 3.

Note 1:
a) Where the space contains an emergency source of power or components of an emergency source of power, this space is not permitted to be adjacent to a space containing the unit's diesel generator installation or components of this installation. The space for the emergency source of power shall be located at a safe distance from the hazardous area.
b) For classification of bulkheads, see section 19, subparagraphs 2 and 3.
c) Where spaces are of the same numerical category and superscript c appears, a bulkhead or deck of the rating showed in the tables is only required when the adjacent spaces are for a different purpose.
d) Bulkheads separating the chartroom of the wheelhouse from the radio room may be of B-15 rating.
e) Depending on the classification area the Norwegian Maritime Authority may stipulate stricter requirements with regard to fire integrity and structural separation of adjacent areas/spaces after a more detailed estimate of risk, cf. section 4.

+ denotes that a division is required to be of steel or equivalent material, but is not required to be «A» class standard. Exterior surfaces which may be exposed to hydro carbon fires, shall be specially considered.

– denotes no requirements.

Note 2: Accommodation spaces and control stations shall be located outside hazardous areas and shall be separated as far as practicable from such areas. Exterior surfaces facing the drilling or production area shall at least be insulated to A-60 standard. On the basis of the results of risk analyses/calculations of design fire, class 'H' fire divisions may be required.

Note 3: When locating main machinery spaces/generator spaces, the fire integrity towards the drilling area shall be specially considered.

Note 4: Installation of sprinkler systems gives no reduction in the insulation values.

Amended by Regulations of 11 April 2003 No. 493 (in force on 1 July 2003), 19 December 2012 No. 1345 (in force on 1 January 2013).

Section 21

Thermal load from flare boom

The thermal load from the flare booms shall be calculated in accordance with API 520, Part 1, Appendix A, and the consequences for relevant machinery, equipment, etc. on the unit shall be evaluated and taken into consideration. The thermal load where personnel may stay for short periods, shall not exceed 6.3 kW/m^2 [1].

1 When burning off for longer periods, the thermal load should not exceed 4.7 kW/m2 where personnel may stay.

Chapter V
Alarm and intercommunication system

Section 22

Fire alarm

1. An electrically operated alarm system shall be provided so that those on board can be warned in case of danger.

2. In addition, an automatic fire alarm and fire detection system shall be provided in accommodation spaces, control stations, machinery spaces, service areas (high risk), mud rooms, shale shaker rooms and other areas exposed to fire hazards. The two alarm systems may be integrated. Alarm bells (sirens) or other satisfactory audible warning system shall be provided in accommodation spaces, in machinery spaces, on the drill floor, on open decks and in other areas where work is carried out, so that everybody on board can hear the alarm when it is activated.
3. The electric installations of the alarm system shall be in accordance with regulations in force on electrical installations, maritime installations, and the electrical equipment regulations laid down by the Norwegian Directorate for Civil Protection. Alarm bells may be replaced by pneumatically operated typhoons.
4. The power supply system shall consist of at least two independent sources of power, each capable of supplying the alarm system for a period of 18 hours. One of the sources of power shall be an emergency source of power consisting of batteries being continuously charged.
5. The detection system shall be divided into loops. There shall be separate loops for accommodation spaces, for machinery spaces of category A and for hazardous areas.
6. All areas in machinery spaces of category A and in emergency generator rooms shall be effectively monitored by suitable detectors. Areas particularly exposed to fire near engines, generators and oil-fired boilers shall be particularly well covered. The detector installation shall be based on two different detector principles one of which shall be sensitive to combustion gases (smoke detectors). In accommodation spaces the detector installation shall be based on smoke detectors.
7. There shall be manually operated call points on the drill floor on the helicopter deck or in its immediate vicinity, in the wheelhouse, control stations, machinery spaces of category A, other major service spaces, common rooms, stairways, and corridors in accommodation spaces.
8. In spaces where the noise level exceeds 90 db(A), flashing or rotating lights connected to the system shall be mounted in addition to bells (sirens).
9. Automatically activated alarms shall first initiate signals in the fire alarm central (i.e. the room containing centralised fire-recording equipment) and in the wheelhouse or some other place where there is continuous watch. From the fire alarm central it shall be possible to manually activate alarm to the entire unit or to particular areas. If the signals indicated in the fire alarm central have not received attention within 2 minutes, alarm signals shall be automatically initiated all over the unit. Activation of manually operated call points shall initiate alarm signals direct all over the unit.
10. Lifeboat alarm is given by a continuous signal on the siren or horn, at the same time as a continuous alarm is given by the alarm system. The fire alarm is given by intermittent alarm by the alarm system.
11. Automatic fire alarm systems shall be certified in accordance with the requirements of recognised standards such as EN-54, IEC 92-504 or equivalent.
12. It shall be verified that the system is in accordance with the relevant regulations and works satisfactorily and that the alarm bells and loudspeakers, etc. which have been mounted can be heard by those on board everywhere in accommodation spaces, service spaces and machinery spaces. At least once a year there shall be a practical test to check that the alarm system works satisfactorily.

Amended by Regulations of 22 May 1990, 11 April 2003 No. 493 (in force on 1 July 2003), 28 June 2004 No. 1046.

Section 23[1]

Communication system

1. The unit shall be equipped with a two-way intercommunication system, which may be a telephone system with a power supply which is independent of the main net. Means shall be provided for two-way communication between *inter alia* control rooms, wheelhouse, radio room, machinery spaces, offices, day rooms, mess rooms and officers' cabins.
2. The unit shall further be provided with a public address system through which messages can be transmitted from the control centre, control stations, radio room and offices to the whole unit, selectively or collected. Highest priority shall be given to the control centre. The loudspeaker circuits shall be so arranged that the public address system receives a satisfactory signal from at least two independent circuits all over the unit. Each circuit shall be protected against overload caused by earth fault or short circuit. Any fire or explosion within an enclosed space or other limited areas shall not disrupt the operation and functioning of the public address system in other spaces or areas. The power supply system shall consist of at least two independent sources of electrical power, one of which shall be a battery source of electrical power being continuously charged. The battery source shall have a capacity equalling 18 hours' operation of the system.
3. There shall be a separate loudspeaking communication system between the drill floor, derrick platform and lower deck.
4. Where an integrated public address system and alarm system has been arranged, there shall be at least two independent amplifiers and tone generators with automatic switch-over in case of fault. Each amplifier shall have sufficient capacity to operate the alarm and public address system. The loudspeaker circuits shall be so arranged that a satisfactory loudspeaker function from at least two independent circuits is maintained all over the unit after a fault in one of the amplifiers. The alarm function shall have priority over the communication function. The battery

source of electrical power shall have sufficient capacity to supply both the public address system and the alarm system for a period of 18 hours.

5. The public address system shall be certified in accordance with the requirements of a recognised standard.

Amended by Regulations of 2 March 1999 No. 397 (in force on 1 Sept 1999), 11 April 2003 No. 493 (in force on 1 July 2003).

1 Cf. also Regulations of 4 September 1987 No. 857 on anchoring/positioning systems on mobile offshore units, section 6 subparagraph 7.1, and Regulations of 13 January 1986 No. 31 on deck cranes, etc. on mobile offshore units, section 5 subparagraph 11.

Chapter VI
Gas detection, Emergency shut-down

Section 24

Gas hazard/system

1. Areas with systems carrying oil/gas and drilling mud which may give off gas shall be designed and segregated from other areas/systems in such a way that gas leaks are quickly detected, the dispersion of gas is prevented, and the consequences of a possible fire and explosion are reduced.
2. Areas for accommodation spaces shall be located as far away as possible from drilling and production areas.
3. For flotels, constructions and maintenance vessel, and other mobile units which do not have gas sources on board but where escaped hydrocarbon gas may come from near-by installations, the gas hazard shall be assessed from the company's operational strategy for the unit in the event of a critical situation.

   Based on the company's specified operational strategy, an assessment must be made of how the gas detection and emergency shut-down systems of the flotel should be arranged, and to what extent it is necessary that the equipment remaining after an emergency shut-down is explosion-protected. Electrical equipment which shall be able to function after an emergency shut-down shall be certified for use in a hazardous area, zone 2.
4. Mechanical ventilation systems shall be designed so that as far as practicable the spread of gas, fire, and explosion is prevented. Ventilation systems for accommodation spaces and control stations shall be arranged in such a way that the penetration into these areas of any flammable, toxic and noxious gases and smoke is prevented. Overpressure ventilation from areas as safe as possible may be one way of complying with this requirement.
5. Control stations shall be located according to an evaluation of possible accidents, such as e. g. explosion and fire.
6. Gas discharge from safety valves etc. which may occur under abnormal operating conditions shall be led through pipes to an area without explosion or fire hazard.
7. The risk of explosion in double bottoms shall be considered. If there is a risk that an explosive atmosphere may form because of leaks from adjacent spaces, oil leaks from pipelines in double bottoms etc., the double bottom shall normally be fitted with adequate mechanical ventilation. The ventilation shall provide overpressure in relation to adjacent zone 1 and 2 areas. (Cf. section 25 subparagraph 1.2).
8. Tools etc. intended for use in a gaseous atmosphere (e. g. for stopping a gas leak) shall be designed for use in hazardous areas.
9. In hazardous areas the fastening of equipment shall be especially evaluated with regard to the risk that the equipment may fall down or bump together so that sparks are created.

Amended by Regulations of 11 April 2003 No. 493 (in force on 1 July 2003), 29 June 2007 No. 1006 (in force on 1 July 2007).

Section 25

Gas detection

1. Gas detectors outside hazardous areas.

1.1. Gas detectors for hydrocarbon gas (HC) shall be installed in all ventilation intakes for the accommodation spaces. In geographical areas where H_2S gas may occur in the reservoir, the company shall consider the need to also install H_2S detectors in the same ventilation intakes.

Gas detectors for hydrocarbon gas (HC) shall be installed in all external intakes for combustion air.

For other ventilation systems, there shall either be arranged gas detectors for HC gas in all ventilation intakes, or these ventilation systems shall be automatically shut off when gas is detected (low level) in hazardous areas zone 1 or zone 2. (Cf. section 26 subparagraph 1.1.)

1.2. If mechanical ventilation has been arranged for double bottoms, the air intake shall be monitored by gas detectors. If a leak in a double bottom may lead to the formation of hydrocarbon gas, outlets shall also be monitored by gas detectors.

1.3. Certified portable gas detectors for hydrocarbon gas (HC) and hydrogen sulphide gas (H_2S) (at least two of each) shall be easily accessible on board. (Cf. section 25 subparagraph 5.1.)

2. Gas detectors in hazardous areas, zone 1 and zone 2.

2.1. Gas detectors for hydrocarbon gas (HC) and hydrogen sulphide gas (H_2S) shall be permanently installed in:

- the drill floor area
- the shale shaker room, above or inside the outlet for the drilling fluid backflow from the well
- other areas where drilling fluid, reduction valves or blow-out preventors on deck may give off gas.

2.2 In addition to detectors located in spaces as specified in subparagraph 2.1 above, gas detectors for HC gas and H2S gas shall be installed in the extractor ventilation from spaces where gas will first naturally be released from the drilling fluid, i.e. usually in the shale shaker room.

2.3. There shall otherwise be gas monitoring in areas where this is reasonable, e. g. at test separators and similar.

2.4. The well monitoring company's own gas detection system is regarded as a separate system in addition to the above.

3. The gas detection system.

3.1. A gas detection central shall be located in a manned control station/emergency control station. A gas detection central or a slave panel clearly showing where gas has been detected shall be installed on the drill floor. A separate alarm shall be given for HC gas and H_2S gas. On flotels and other construction and maintenance vessels where gas detection systems have been arranged, the gas detections central shall be located in a manned control station.

3.2 The gas detection system shall indicate gas concentrations in per cent of the lower explosion limit (LEL) for HC gas and indicate parts per million (ppm) for H_2S gas.

3.3 It shall be possible to give gas alarm at two levels of concentration. Hydrocarbon gas (HC) at 20% of the LEL (low level) and 60% of the LEL (high level). Hydrogen sulphide gas (H_2S) at 10 ppm (low level) and 20 ppm (high level). A visual and audible alarm shall be given in the following areas at both low and high level gas indication:

- where gas is detected
- on the drill floor
- in the manned control station/emergency control station
- in other similar areas

Alarms shall be located in such a way as to be easily visible and audible and shall comply with a recognised standard[1].

3.4. The gas detection system shall be arranged with an alarm for failure in the power supply and signal cable rupture.

3.5. The gas detection system shall be supplied with electricity from two independent sources of power, one of which shall be an accumulator battery under automatic charging. In the event that the normal power supply fails, the reserve power supply shall automatically take over.

3.6. The gas detection central and gas detectors shall be certified.

4. Gas detectors.

4.1 Gas detectors shall be located so that any gas discharge is registered quickly and reliably. In order to achieve a reliable function, the type of detector and the limitations/recommendations specified by the manufacturer shall be taken into consideration.

5. Calibration and testing etc.

5.1. Gas detectors shall be of a type which can be easily calibrated/checked for errors.

5.2. When locations for gas detectors are chosen, special attention shall be paid to the possibilities for testing and calibration.

5.3. In areas where calibration/testing may be difficult, suitable gas detectors, for example of the self-monitoring type, must be used, combined with special testing systems.

Amended by Regulations of 11 April 2003 No. 493 (in force on 1 July 2003), 29 June 2007 No. 1006 (in force on 1 July 2007).

1 Cf., inter alia, IMO resolution A.830(19) – Code on Alarms and Indicators 1995.

Section 26

Emergency shut-down

1. Automatic emergency shut-down.

1.1. When a low-level gas concentration of (HC gas) or (H_2S gas) is registered in the ventilation intake for the accommodation spaces on drilling platforms, this ventilations system shall automatically shut down. This involves the stopping of fans and closing of dampers in intakes and outlets.

In mechanical ventilation for all other spaces outside hazardous areas, with the exception of spaces as referred to in subparagraphs 1.2, 1.4, and 1.5 below, either the individual ventilation system shall be automatically shut down separately when gas is registered, or alternatively be arranged so that all these ventilation systems are automatically shut down when gas is registered (low level) in hazardous areas, zone 1 or zone 2 (cf. section 25 subparagraph 1.1).

1.2. The ventilation for the machinery space should normally shut down automatically when low-level gas concentrations (HC) and (H_2S) are registered. (For combustion air, cf. section 26 subparagraph 1.5).

The choice of shut-down arrangements for machinery space ventilation must be evaluated against the possible need to maintain certain safety-critical functions/equipment in the machinery space.

1.3. Ventilation systems in connection with hazardous areas shall not shut down automatically.

1.4. Any standby fans to ventilate gas or prevent the penetration of gas shall start automatically in the event of low-level gas detection.

1.5. The supply of combustion air for motors for main and emergency generators shall be separated from the other machinery space ventilation systems. The separate combustion air intakes shall be fitted with gas detectors giving alarm in a manned control station. All diesel engines and similar on drilling platforms shall be fitted with a damper in the intake for the manifold which automatically cuts the supply of combustion air when the engine is raced because of gas. The requirement for automatic stopping of engines may, upon evaluation, be waived

for dynamically positioned mobile units if faults in the automatic system may lead to inadvertent stopping of the engines. In case of a manual emergency shut-down Level 2, the same damper shall be activated (cf. section 26 subparagraph 2.4.2. below).

1.6 In the event of gas detection the fire-extinguishing systems shall be automatically released if used to reduce explosion pressure. In spaces where unintentional release of the system could cause a critical situation or risk to life or health, the system shall only be capable of manual release.

2. Manual emergency shut-down.

2.1. It shall be possible to carry out a manual emergency shut-down of the unit from at least two strategic locations, one of which shall be outside hazardous areas (normally the drill floor and a manned control station). For flotels any manual emergency shutdown is required from only one station.

2.2 Manual emergency shut-down may be permitted as a step-by-step operation, in which case the activation on one level shall automatically activate all subjacent levels. The step-by-step emergency shut-down may be adapted to the individual unit, but subparagraph 2.4 below shall as a minimum be complied with. Alternatively, several (i.e. more than 2) step-by-step emergency shut-down levels may be used if this can be verified as being conducive to safety.

2.3. The manual activation mechanism, button, switch or similar, for emergency shutdown shall be protected against unintended operation.

2.4 Manual step-by-step emergency shut-down:

2.4.1. Level 1. Emergency shut-down includes:

- All ventilation systems except the ventilation systems in hazardous areas, ventilation necessary to maintain the operation of generator sets for the electrical power supply and ventilation for critical monitoring and safety equipment.
- Burners for auxiliary boilers and incinerators.
- Any well-flow testing equipment.

2.4.2. Level 2. Emergency shut-down includes:

- Equipment mentioned in subparagraph 2.4.1.
- Main generator set for electrical power supply including the ventilation system and other auxiliary systems for these.
- Emergency generator set.
- Battery systems with the exception of the battery systems which form part of the equipment referred to below in subparagraph 2.5.
- Pressure relief of any well-flow testing equipment.
- Other diesel engines and similar which are not approved for zone 2.

2.5. After a level 2 emergency shut-down the following equipment shall as a minimum be functional:

- Emergency lighting (battery lights)
- Control systems for the blow-out preventor (BOP)
- General alarm system
- Public address system (PA)
- Communication equipment for external and internal distress communication (UHF/VHF communication)
- Release system for fixed fire-extinguishing installations
- Equipment for release of anchor lines, including the deluge installation
- Light and sound signals as prescribed by section 13 subparagraphs 2.1 and 2.2 of the Construction Regulations[1]
- Diving system if this is necessary for the safety of the divers
- Indicating system for effectuated emergency shut-down.

The above equipment shall be certified for use in a hazardous area, zone 2. All electrical equipment shall comply with the regulations currently in force laid down by the Norwegian Directorate for Civil Protection. The battery package itself need not be specially explosion-protected if located in a safe area. Electrical equipment which is to remain in function during major gas discharges and which is protected by excess pressure (Ex.p.) must be ensured excess pressure even if the main and emergency power fails.

2.6. When emergency shut-downs in accordance with subparagraph 2.4 have been effectuated, this must be indicated on the drill floor, in a manned control station and in any emergence control station.

2.7. When an emergency shut-down has been activated, automatic attempts at re-starting the machinery shall be disconnected for as long as the shut-down is activated.

2.8. The emergency shut-down system shall be so constructed that operations in progress are safely terminated (e.g. hoisting of drill string). The emergency shut-down shall be carried out in a safe manner which will not involve any risk of further accidents.

2.9 The emergency shut-down system shall be so constructed that it will fail to the conditions which is safest for the unit both in the event of signal failure and failure in the power supply. What is the safest conditions shall be evaluated for each individual system.

2.10. The emergency shut-down system shall be protected against common mode failures and physical damage. This may be achieved by separation of equipment and appropriate physical and electrical division of the system.

2.11. From the central for emergency communication equipment (UHF/VHF) it shall be possible to communicate individually with the various UHF/VHF sets and with all of them simultaneously. UHF/VHF sets shall be capable of maintaining communication in noisy areas.

2.12 There shall be two sources of power for the operation of the emergency shut-down system. In the event of a failure in the regular power supply the reserve power supply shall automatically take over.

Amended by Regulations of 11 April 2003 No. 493 (in force on 1 July 2003), 28 June 2004 No. 1046, 18 December 2014 No. 1911 (in force on 1 January 2015).

1 Cf. Regulations of 4 September 1987 No. 856 on the construction of mobile offshore units.

Section 27

Operating and preparedness

1. For special operations which may involve an increased risk of gas discharge on the unit (e.g. testing of well flow) the operations manual shall contain procedures for preparing, starting, effectuating, and finishing the operation. Check lists or similar are expected to be used in order to ensure that all circumstances of significance to a successful operation are covered.
2. The operations/preparedness manual shall include plans/procedures in connection with possible minor gas discharges in hazardous areas and for major gas discharges spreading beyond hazardous areas. The procedures shall cover any possible gas situations and relevant emergency shut-down levels, including situations in which it may be correct to move the unit by releasing risers and anchor lines.

   The procedures shall further include all planned forms of emergency shut-off of the gas discharge, pressure relief, and also active fighting of the gas hazard, and evacuation.

   Preparedness procedures for flotels shall in addition contain alarm procedures and co-ordination between the permanent installation and the flotel.

Section 28

Maintenance of explosion-proof equipment

1. Maintenance of equipment.

   Special routines are required for the maintenance of electrical explosion-proof equipment so that this equipment maintains its function. Particular mention is made of flame-proof joints in flame-proof equipment (Ex.d.) and earthing of zener barriers for intrinsic safety equipment (Ex.i.). (Cf. regulations in force laid down by the Norwegian Directorate for Civil Protection.)
2. Maintenance of gas detection systems.

   There shall be a system for calibration and maintenance of gas detection systems. The systems shall be calibrated and tested before the unit is put into operation and subsequently as often as necessary for the systems to function as intended (minimum 90% accessibility).
3. Maintenance of the emergency shut-down system.

   There shall be a system for testing and maintenance of the emergency shut-down system. All function shall be tested before the unit is put into operation and subsequently as often as necessary for the systems to function as intended.

   Total shut-down (level 1 and level 2) shall be carried out at least once per year.

Amended by Regulations of 11 April 2003 No. 493 (in force on 1 July 2003), 28 June 2004 No. 1046.

Section 29

Equipment brought on board

Equipment which is sent on board by operator companies/service companies etc., such as workshop containers, testing equipment, logging equipment etc., shall have been checked through the operator's/service company's Safety Management System and documented as being in order prior to arrival on board. The equipment shall be adapted to the equipment to which it will be connected (e.g. pressure, class/barriers) and to the location (zone area) it will have on board. Emergency shut-down procedures for such equipment shall be clarified, whether the equipment is linked to the unit's own emergency shut-down system or not.

Amended by Regulations of 2 March 1999 No. 397 (in force 1 September 1999)

Chapter VII
Miscellaneous provisions

Section 30

Special provisions for existing units

Repealed by Regulation of 11 April 2003 No. 493 (in force on 1 July 2003).

Section 31

Exemptions

1. The Norwegian Maritime Authority may exempt a mobile offshore unit from one or more of the requirements of these Regulations when the company applies for such exemption in writing and one of the following requirements is met:
   a) it is established that the requirement is not essential and that the exemption is justifiable in terms of safety;
   b) it is established that compensating measures will maintain the same level of safety as the requirement of these Regulations;
   c) it is established that the requirement hinders the development and use of innovative solutions when such solutions will maintain the same level of safety as the requirements of these Regulations.
2. Statement from safety representative shall be attached to the application for exemption.

Amended by Regulations of 11 April 2003 No. 493 (in force on 1 July 2003), 18 December 2014 No. 1911 (in force on 1 January 2015).

Section 32

Entry into force

These Regulations enter into force at once.

Amended by Regulation of 29 June 2007 No. 1006 (in force on 1 July 2007, previously section 33).