

# Regulations concerning the design and layout of workplaces, work premises and accommodation (the Workplace Regulations)

## Chapter 1. Introductory provisions

### Section 1-1. Purpose

The purpose of these regulations is to ensure that employees' safety, health, and welfare are safeguarded by:

- a. workplaces and work premises being adapted and designed for the work that is performed, the individual employee and for special risk factors.
- b. accommodation provided to the employee by the employer being properly constructed, furnished and maintained.

### Section 1-2. Scope

The Regulations apply to all permanent and temporary workplaces, access routes and to new and existing work premises. Chapter 3A of the Regulations applies to accommodation provided by the employer to the employee.

Section 2-10 and Chapter 9 of the Regulations do not apply to offshore petroleum activities and activities on onshore facilities as referred to in Section 6,(e) of the Framework Regulations.

Sections 2-22, 2-23, Chapter 3A, and Section 6-5 of the Regulations do not apply to offshore petroleum activities.

These regulations will apply to Svalbard unless otherwise warranted by the Regulations of 18 January 1993 No 33 relating to the coal mines on Svalbard.

### Section 1-3. To whom the regulations apply

Employers shall ensure that the provisions of these regulations are implemented.

For undertakings with no employees, the following provisions apply:

- Chapter 4 Safety equipment,
- Chapter 5 Signage and marking,
- Section 6-5 Safeguards to prevent falls
- Chapter 7 Chemicals and pollutants in the working atmosphere, and
- Chapter 8 Work in surroundings that may entail exposure to biological agents.

In addition to the above-mentioned chapters, the following sections apply to agricultural and forestry undertakings:

- Section 2-11 Lighting
- Section 2-14 Climate, ventilation, air quality etc.
- Section 2-18 Traffic and access
- Section 2-20 Loading ramps, loading bays, tipping sites and quays

- Section 2-21 Escape routes and emergency exits
- Section 3-7 Lavatories
- Section 3-10 First aid rooms and first aid equipment

The following apply to lessors of work premises and quay facilities:

- Chapter 2 Requirements for workplaces and work premises,
- Chapter 3 Requirements for personnel rooms, rooms for cleaning equipment, first aid rooms and first aid equipment,
- Section 4-2 Evacuation and rescue equipment – the first, second, third, fourth and fifth paragraphs,
- Section 4-3 Fire prevention, explosion prevention and fire extinguishing equipment – the first paragraph,
- Section 6-5 Safeguards to prevent falls, and
- Section 8-1 Workplaces with biological health risks.

## Section 1-4. Definitions

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

1. *work premises*: rooms that the undertaking uses in connection with the work such as workrooms, personnel rooms, access areas etc.;
2. *workplace*: any place, whether indoors, outdoors or underground, where work of a permanent or temporary nature is carried out;
3. *workroom*: a room in which employees must be present in order to carry out work that forms part of the undertaking's regular activities;
4. *work equipment*: technical installations etc. such as machinery, lifting equipment, safety components, containers, means of transport, appliances, installations, tools and any other object used in connection with the production of a product or the performance of work;
5. *access route*: roads, stairs, corridors, lifts etc. used by employees to get to workplaces or between workplaces and personnel rooms;
6. *biological agents*: live or dead micro-organisms, cell cultures, endoparasites and prions that can cause infections, allergies or toxicity in humans;
7. *acoustic signal*: a coded acoustic signal that is triggered and transmitted with the aid of a device that is designed for this purpose, without the use of a human or artificial voice;
8. *light signal*: a signal emitted through a device designed for lighting from the inside or from behind in a way that lights up the surface;
9. *personnel room*: changing room, drying room, washroom, shower room, lavatory, messroom, rest room, break room or sleep room;
10. *fume extractors*: a device that removes polluted air near the source before the pollution spreads to the surroundings;
11. *risk*: a function of the probability of an undesirable incident taking place and the consequences for the employees' life or health;
12. *safety signage*: signs that, by means of shapes, symbols, colour and, if relevant, text, provide information and instructions on how to behave in different situations with regard to

safety or health;

13. *jetting device*: a collective term for devices that control the direction of a jet of fluid. Includes the nozzle, extension, holding and support devices and valve devices to control the flow of liquid. The pressure of the jet exceeds 25 bar;

14. *hot work*: work where heat is used, such as open flame, hot surfaces or ignition sparks. Hot work also includes work operations such as welding, soldering, torch cutting and grinding of metal etc. which can also give rise to hazardous gases;

15. *warning colours*: colours with a specific meaning that warn of hazardous conditions;

## Section 1-5. Exemption

The Norwegian Labour Inspection Authority, the The Norwegian Ocean Industry Authority and the Civil Aviation Authority of Norway may grant exemption from the regulations in their respective areas if warranted on special grounds, if justified from a health and safety perspective and not in breach of the EEA Agreement.

# Chapter 2. Requirements for workplaces and work premises

## Section 2-1. Design and fitting out of workplaces and work premises

Work premises and the access to premises shall be designed and furnished with a view to the activities and workplaces that the premises will hold, and they shall provide an adequate standard of welfare.

Workplaces shall be dimensioned, arranged and adapted to the nature of the work, to the work equipment and to the individual employee. The floor space shall be big enough to provide free space for good and varied working positions and movements, and for the work and use of work equipment not to entail a risk to health and safety.

Work equipment shall be placed and assembled in relation to the surroundings so that the performance of work and the use and maintenance of work equipment do not entail a risk to health and safety.

Foundations and fastening devices for work equipment shall ensure that the appliance is stable. Workplaces, work equipment and processes shall be screened off when work is performed that may entail strain, hazards or health risks for other employees due to, for example, light, radiation, spatter, noise or air pollution.

When designing and furnishing workplaces and work premises, special consideration must be paid to the risk of violence and threat of violence.

## Section 2-2. Work chairs

Work chairs shall be steady, allow the user freedom of movement and enable a stable, comfortable position. If necessary, the chair shall prevent the transmission of vibrations.

If there is a risk of unfortunate muscular strain, for example in connection with work at a computer

screen, it must be possible to adjust the height of the seat and the height and tilt of the backrest. If necessary, it must also be possible to regulate the depth of the seat.

A footrest shall be made available on request.

It must be possible to install arm rests as required.

### Section 2-3. Work tables

Work tables and desks must be sufficiently big to allow for expedient and flexible positioning of the work equipment.

If there is a risk of unfortunate muscular strain, for example in connection with work at a computer screen, there must be sufficient room for supporting the forearms and hands.

It must be possible to adjust the working height to good working positions.

### Section 2-4. Employees with disabilities

Permanent workplaces shall be designed, dimensioned and furnished to accommodate employees with disabilities so that they are able to work in the undertaking.

Personnel rooms shall be designed and located as necessary to accommodate employees with disabilities so that they are able to work in the undertaking.

Particular consideration shall be given to access routes, mechanical means of transport, doors, showers, washbasins and lavatories.

### Section 2-5. Safety in connection with cleaning, maintenance, installation etc.

Buildings, building elements and installations shall be designed, placed and furnished in a way that allows maintenance and cleaning to take place free of risk.

Safe operation of windows, skylights and ventilation systems that can be opened or adjusted must be possible, and they must be designed and positioned so that they do not pose a danger to employees when they are open.

Before work is started on the installation, adjustment, testing and inspection of buildings or technical installations, safe access and necessary headroom and clear width must be ensured.

Access to roofs shall preferably be through doors or hatches.

Building parts, skylights or structures that are too fragile to step on and where there is a risk of falling shall be secured by marking, barriers, walkways or other means of securing.

On buildings where the height under the eaves exceeds 5 m, loose ladders may only be used for access if they are braced/tied off. The ladder shall be long enough to extend 1 m above the roof.

Anchor points for safety lines shall be installed as necessary in expedient places where this is necessary for securing during the work.

Where necessary to ensure safety, hatches, doors and gates shall be provided with a safety mechanism so that they can be secured in open position. It must be possible to open them from either side.

### Section 2-6. Floors and decks

Floors and decks must be free of dangerous bumps, holes and slopes and be fixed and stable so that intended use of vehicles and means of transport can take place safely.

Floors of work premises, loading ramps, goods receptions etc. must be even and comfortable to walk on, and with a design and surface that prevent the floors from getting slippery.

It must be possible to clean the floors of work premises and personnel rooms so as to achieve a satisfactory standard of hygiene.

## Section 2-7. Walls and ceilings

It must be possible to clean and maintain walls and ceilings in work premises so as to maintain a satisfactory standard of hygiene.

Transparent partition walls, particularly partitions made exclusively of glass, shall be clearly marked and withstand the loads they may be exposed to. If the partition walls can break, they must be separated from workplaces or traffic routes/passageways to prevent harm to employees.

## Section 2-8. Ceiling height

The ceiling height of workrooms and personnel rooms shall be adapted to the floor space of the room and the activities that take place there. Particular consideration shall be given to ventilation systems, lighting and the dimensions of fixtures and furnishing.

## Section 2-9. Doors and gates

The location, number and dimensions of doors and gates, and the materials used, are determined by the nature and use of the work premises or areas.

Doors for pedestrians must be provided in the immediate vicinity of gates primarily intended for vehicle traffic, except where it is safe for pedestrians to use such gates. Such doors must be clearly marked and must never be blocked.

Doors must not be placed under openings for vertical movement of goods.

Doors and gates with glass panels or that are transparent must be secured against breaking and be fitted with satisfactory warning marks at eye height.

Swing doors and gates must be designed so as to avoid collisions.

It must be possible to open mechanical doors and gates manually at all times.

Doors and gates must be fitted with safety systems if shutting them accidentally entails danger.

Mechanical doors and gates must function in a manner that does not expose employees to danger. They must be fitted with easily recognisable and accessible shut-down devices.

Sliding doors must be fitted with a safety device to prevent them from being derailed or falling over.

## Section 2-10. Daylight and views of the outdoors

Each individual workplace must have access to daylight and views of the outdoors.

Premises without daylight or views of the outdoors may be used as workplaces in the following cases:

- a. when the workplace must be located underground for technical or safety-related reasons;
- b. when warranted by the nature of the work;
- c. when justified by the size of the premises or the amount of time the employee spends there;
- d. when conversion of existing premises would entail major disadvantages and expenses.

Where possible, messrooms must have daylight and views of the outdoors.

## Section 2-11. Lighting

Work premises and workplaces shall be designed and furnished so that each workplace has satisfactory lighting to protect the employees' health and safety.

Workplaces outdoors and underground must be sufficiently illuminated by artificial lighting if there is insufficient daylight. Where required for safety reasons, traffic routes must also be illuminated.

The intensity of the illumination must be adapted to the prevailing working and traffic conditions.

The lighting installations must be adapted to the climatic conditions.

Lighting installations in work premises, workplaces, access routes, traffic routes and loading bays must be placed in such a way that there is no risk of accident to employees as a result of the chosen type of lighting.

The lighting must be arranged so that any stroboscope effect does not lead to danger due to misunderstanding of the motion or direction of motion of machinery components.

## Section 2-12. Visibility conditions

There must be good colour and contrast conditions without too great luminance variation within the field of vision, having regard to the nature of the work and the employees' eyesight.

Workplaces must be designed so as to avoid disturbing reflective light or contrast glare that can impede work at computer screens, machinery, instruments readings etc. by coordinating the design of the workplace and work station with the positioning and technical characteristics of the artificial light sources. Light sources such as windows and other openings, transparent or translucent walls and light-coloured equipment and walls must not cause direct glare and cause as little reflection as possible.

Windows must be fitted with adequate adjustable screening devices to reduce daylight penetration to workplaces with computer screens.

## Section 2-13. Emergency lighting

Workplaces where employees can be exposed to danger if the artificial lighting fails must be provided with emergency lighting of sufficient intensity.

Escape and evacuation routes, as well as emergency exits, must be equipped with sufficient emergency lighting to cover the need should the ordinary lighting fail.

## Section 2-14. Climate, ventilation, air quality etc.

Work premises must be designed and furnished so that each individual workplace, personnel rooms etc. have a satisfactory climate with regard to temperature, humidity, draught, air quality and unpleasant odours, and protection against toxic or hazardous substances etc. When assessing the climate and air quality, consideration shall be given as necessary to the physical strains that the employees are exposed to.

The air in areas where employees work or stay must have a fully adequate oxygen content. Areas underground where access is permitted must be provided with a continuous supply of fresh air.

Consideration shall be given to the effect of solar radiation so that the employees are not exposed to unnecessary thermal strain.

Where necessary out of consideration for the employees' health, ventilation systems must be provided with fault warning signals.

## Section 2-15. Radiation

Premises must be designed and furnished so that each individual workplace is adequately protected against radiation.

Workplaces and work premises where the risk assessment shows that exposure to artificial optical radiation can exceed the limit values shall be marked with appropriate warnings or signs in accordance with Chapter 5 of these regulations. If technically possible, the workplace shall be provided with access restriction.

## Section 2-16. Noise and vibrations

Work premises and workplaces shall be designed and fitted out so that each individual workplace is protected against noise and vibrations and so that alertness is not reduced or conversation made difficult.

Sound-absorbing materials and sound barriers shall be used as necessary so that workplaces and personnel rooms are protected against noise.

Noise and vibrations from technical installations shall be given consideration when workplaces and work premises are designed, so as not to give rise to unnecessary noise and vibrations.

Foundations and fastening devices for work equipment must ensure that the appliance does not cause unnecessary noise or vibration.

## Section 2-17. Access to drinking water

Employees shall have access to drinking water.

## Section 2-18. Traffic and access

Safe access shall be provided from public areas to work premises and personnel rooms, between personnel rooms and the individual workplaces, and between workplaces.

Where employees must use a boat to get to and from the workplace, safe transport shall be ensured.

If means of transport are used on traffic and access routes, pedestrian routes must be provided at an appropriately safe distance.

Vehicular traffic routes shall be located at an appropriate distance from doors, gates, pedestrian traffic routes, corridors and stairs. They shall be dimensioned based on the volume of traffic and the nature of the activities.

Workplaces and traffic routes including stairs, occupied by the employees during the work, shall be designed so that the movement of pedestrians and vehicles can take place with due regard to safety.

On building and construction sites where it is necessary to pass danger zones, covered or, alternatively, built-in traffic routes shall be provided.

The entrance to buildings or other structures under construction whose height exceeds 6 m shall be protected by screens or be adequately cordoned off. The same applies to areas near walls that are regularly occupied by employees.

Traffic and access routes shall be clearly marked if this is required to protect the employees.

Vehicular traffic routes shall be marked with permanent warning colours.

## Section 2-19. Mechanical means of transport for carrying persons

Mechanical means of transport such as escalators, moving walkways, lifts etc. shall be installed and work with due regard to safety. They shall be provided with necessary safety devices and easily recognisable and accessible emergency stop mechanisms.

## Section 2-20. Loading ramps, loading bays, tipping sites and quays

Loading ramps, quays and loading bays, including goods receptions, must be dimensioned for the goods to be transported and the equipment to be used for transportation and handling of the goods. Information about permitted loads must be visible and easy to understand.

Loading ramps must have at least one exit. More than one exit must be provided where technically possible and required due to the length of the loading ramp.

Loading ramps, quays etc. must be secured to prevent employees from falling down.

Permanent tipping sites and other areas where the use of vehicles can entail a particular risk must be equipped with barriers that prevent vehicles from running over the edge.

Quay facilities must be provided with edge rails dimensioned to take account of the use of the quay.

Quay facilities must be provided with mooring bollards of a type that allows vessels to be moored safely, and that are so solid that they will certainly withstand the loads to which they may be exposed. The bollards must not be placed so that moorings will block ordinary traffic and transport on the quay.



## Section 2-21. Escape routes and emergency exits

It must be possible to evacuate all workplaces and personnel rooms quickly and safely in situations of danger.

Buildings and workplaces must be equipped with an adequate number of escape routes and emergency exits, which must be open for free movement at all times and easy to open from the inside without any special aids. Doors in escape routes must open in the escape direction.

The number, distribution and dimensions of the escape routes and emergency exits must be adapted to the use, equipment and dimensions of the workplace, and the maximum number of persons that may be present.

Escape routes and emergency exits must lead as directly as possible to the open air or to an area of safety or room fitted out to protect against any dangers that may arise, and where the employees can remain in safety until they can be rescued or the danger is over.

In connection with underground rock work, there must be at least two solid and easily accessible exits to the surface. Should it prove impossible to establish two exits in connection with underground rock work other than mining, measures shall be taken to ensure that safe evacuation is possible.

Escape routes and doors placed in escape routes must be adequately marked.

## Section 2-22. Design of guard rails

Where guard rails are required, cf. Section 6-5, they must be of a height and design that ensure that protection is achieved and that employees are not exposed to danger.

The guard rails must be at least 1 metre high. On system scaffolds, the height of the guard rails can be reduced to an absolute minimum of 0.95.

The guard rails must not have openings that are so wide that there is a danger of employees falling through them. When horizontal strips are used as fall protection, there must be at least one knee board between the handrail and deck or toe board.

Where there is a risk of falling objects, the guard rails must be provided with a toe board that is at least 0.10 metres high. On scaffolds, toe boards must be at least 0.15 metres high. On wooden scaffolds with a deck height of less than 8 metres, the toe board must be at least 0.1 metres high. There must be no gap between the toe board and the decking. Other covering must be used where the toe board does not provide adequate protection.

## Section 2-23. Design of ladders

Ladders must be adequately dimensioned and securely fastened. The steps must be slip-resistant. Ladders must have a siderail or handrail that terminates at guard rail height over the upper level and, if necessary, be fitted with safeguards to prevent falls, for example hoops.

Long ladders must be provided with a rest landing.

When ladders function as escape routes, they must be marked so that they are clearly visible.

## Section 2-24. Special protective measures for outdoor workplaces

Outdoor workplaces shall be arranged so as to ensure, as far as possible, that employees

- a. are protected against unfavourable weather conditions;
- b. are protected against falling objects;
- c. are not exposed to harmful noise or harmful external exposures such as gas, vapour or dust;
- d. can leave the workplace quickly or be saved quickly in a situation of danger;
- e. cannot slip or fall.

Employees must have access to premises where they can stay when necessary out of consideration for their safety and health and the working environment.

If necessary, workplaces on outdoor scaffolds must be covered in tarpaulin or similar and be provided with local heating and lighting.

## Chapter 3. Requirements for personnel rooms, rooms for cleaning equipment, first aid rooms and first aid equipment

### Section 3-1. Location of personnel rooms

Personnel rooms must be expediently located in relation to personnel entrances and the workplace.

### Section 3-2. Dimensioning and fitting out of personnel rooms

When dimensioning personnel rooms, account shall be taken of the following, among other things:

- a. the nature of the work;
- b. the maximum number of employees who will normally use the room at the same time;
- c. that it must be provided with tables and chairs with backrests in a number adapted to the number of employees;
- d. that the undertaking must be able to employ both women and men. Equipment that is not linked to the activities that normally take place in the room must not be placed or installed in personnel rooms.

### Section 3-3. Pregnant and breastfeeding women

Pregnant and breastfeeding women shall be given an opportunity to lie down and rest under suitable conditions.

### Section 3-4. Changing rooms

Workplaces shall normally be provided with separate changing rooms for men and women. Each employee shall be provided with sufficient space for hanging up clothes etc.

If circumstances so require, separate lockers shall be provided for work clothes and private clothes.

The changing rooms must allow the employees to lock in their clothes during working hours, and, where necessary, lockable cubicles shall be provided to prevent the loss of valuables.

The employees shall be provided with sufficient room to change.

Changing rooms shall be provided with a mirror and the necessary number of seats for changing clothes and shoes.

Changing rooms shall be provided with sufficient ventilation.

### Section 3-5. Messrooms

The undertaking shall normally have a messroom or access to adequate premises outside the undertaking.

The messroom must be big enough to accommodate the maximum number of employees who eat at the same time.

The messroom must be expediently fitted out and, if necessary, be arranged so that employees can prepare meals there.

### Section 3-6. Washrooms

Undertakings shall have a dedicated washroom or washing facilities.

Separate washrooms or washing facilities shall be provided for men and women, or provisions made for separate use of these rooms.

The floor of the washroom shall be designed and have a surface that prevents it from being slippery.

There must be sufficient floor space in front of the washstands.

Adequate and suitable showers shall be provided for the employees if required by the nature of the work or for health reasons.

The shower rooms must be sufficiently big to allow each individual employee enough room to wash under conditions of an appropriate standard of hygiene.

The showers must have running hot and cold water.

In cases where showers are not required, the washroom or washstand shall be provided with a hand basin with hot and cold water.

If shower rooms or hand basins are separate from the changing rooms, there must be easy access between them.

### Section 3-7. Lavatories

Undertakings shall have an appropriate number of lavatories, and separate lavatories shall be provided for men and women. A hand basin shall be provided in connection with lavatories.

A shared lavatory may be used in small undertakings.

## Section 3-8. Room for cleaning equipment

A room shall be provided for cleaning equipment, which must be fitted out and equipped according to the planned cleaning method.

## Section 3-9. Drying of clothes

In undertakings where some or all the work takes place outdoors, or if otherwise warranted by the work, a separate drying room or other possibility of drying wet clothes and footwear shall be provided.

## Section 3-10. First aid rooms and first aid equipment

Appropriate first aid equipment must be easily available in all places where the working conditions so require.

If warranted by the size of the workplace, the nature of the work or the risk of accidents, one or more first aid rooms shall be fitted out that are adapted to the use of stretchers.

The first aid rooms shall be provided with necessary first aid equipment and easily visible first aid instructions. Appropriate and sufficient breathing and resuscitation equipment must be available where employees can be exposed to harmful air.

The first aid room and other storage places for first aid equipment must be properly marked.

# Chapter 3A. Requirements for accommodation provided by the employer to the employee

## Section 3A-1. General accommodation requirements

Accommodation provided by the employer to the employee must be properly constructed, furnished and maintained. Among other things, the accommodation must be suitable in terms of:

- a. daylight and views,
- b. maintenance and possibility of satisfactory cleaning and good standards of hygiene,
- c. temperature, humidity, ventilation and air quality,
- d. toxic and harmful substances,
- e. biohazards,
- f. storage, preparation and consumption of food,
- g. clothes storage,
- h. washing and drying clothes,
- i. fire and electrical safety.

In situations of danger, employees staying in the accommodation must be able to be quickly and safely evacuated from all rooms. Section 2-21 of the Workplace Regulations relating to escape routes and emergency exits applies correspondingly to accommodation conditions.

Rooms and places referred to in Section 3A-2 to Section 3A-4 must not be installed or equipped in

a manner that prevents them from performing their function.

First aid equipment should be available in the immediate vicinity.

### Section 3A-2. Requirement for single occupancy rooms as bedrooms

The employer must ensure that each employee has their own separate bedroom. Bedrooms must have windows that can be opened and that can be used as an escape route.

The requirement for single occupancy rooms as bedrooms does not apply:

- a. for seasonal work for up to 12 weeks during the calendar year,
- b. for short-term work outside of the ordinary workplace when it is difficult to provide single-occupancy rooms for employee use.

A maximum of four employees can share a bedroom in such instances. In any event, there must be a minimum of 4 square metres of floor space per person when multiple people are sleeping in the same room.

Seasonal work refers to work that is of such a nature that it is only performed for a limited part of the year. Maintenance and restoration work etc. is not considered seasonal work.

Bedrooms must be located in such a manner that employees are disrupted as little as possible and must not be access points for other rooms.

An employers' association and trade union with right of nomination pursuant to Section 39 of the Labour Disputes Act may agree on exceptions from the requirement of single-occupancy bedrooms stipulated in the first paragraph, first sentence, in order for two employees to share a bedroom.

### Section 3A-3. Requirement for living area

The living area must be in the immediate vicinity of the bedroom and must be furnished with a sufficient number of tables and chairs with backrests to accommodate the number of employees who normally use the living areas at the same time. The minimum area per person is 1.5 square metres.

If the bedroom is sufficiently large, the living area requirement may be met by the bedroom area. The prerequisites in the first paragraph will then correspondingly apply in the combined bedroom and living area.

There should be wireless internet access where possible.

### Section 3A-4. Access to shower and toilet

There must be access to a lockable shower and lockable toilet in the immediate vicinity. At a minimum, there must be access to one toilet and one shower per five employees.

There must be access to a hand sink in connection with the toilet. The hand sink must have hot and cold running water.

There must be access to separate showers and toilets for women and men, or separate use of such facilities.

Showers must be sufficiently large and have hot and cold running water. There must be access to a mirror. There must be sufficient ventilation to eliminate steam.

## Chapter 4. Safety equipment

### Section 4-1. Alarm and warning systems

In workplaces where flammable, explosive or hazardous chemicals are present, sufficient warning and communication systems must be in place to warn the employees and relevant rescue and emergency services of an accident, injury or emergency situation.

When necessary, monitoring equipment shall be installed for automatic and continuous recording of gas concentrations in specific places.

When important in relation to safety or evacuation, the alarm systems must activate a fail-safe function in technical systems, for example devices to cut off power automatically from electrical installations and internal combustion engines.

### Section 4-2. Evacuation and rescue equipment

Evacuation and rescue equipment shall be provided in places where the working or evacuation conditions make it necessary, for example where there is a risk of drowning or of a potentially hazardous atmosphere.

Quays, pools and manholes etc. shall be provided with a loose or fixed ladder or another device that makes it possible to escape without the help of others. On quays and other places where it is necessary, a life buoy, rescue pole/ hook or a boat should be easily accessible.

In connection with work underground, mechanical aids must be available for transport, if evacuation requires great physical effort.

The rescue equipment must be in good working order and ready for use at all times, and it must be easily accessible.

Storage sites for rescue and evacuation equipment must be properly marked.

### Section 4-3. Fire prevention, explosion prevention and fire extinguishing equipment

The workplace must be arranged so as to prevent the risk of fire and explosion.

Adequate fire extinguishing equipment must be easily available in workplaces underground, in port areas, where hot work is carried out and next to machinery where there is a risk of fire or explosion.

The operating room on the divers' platform that contains components of important to safety in connection with underwater operations must be properly fire-proofed.

Manually operated fire extinguishing equipment must be easy to use and, if necessary, be protected from damage.

### Section 5-4. Provisions on the use of safety signs and signals

The use of safety signs and signals shall be planned to ensure:

- a. that the location of other signs or other light or sound sources does not affect the visibility or audibility of the signs or signals required pursuant to these regulations;
- b. that several signs are not placed near each other;
- c. that light signals that can be confused are not used at the same time;
- d. that one light signal is not used near another light source of a similar type;
- e. that two or more acoustic signals are not used at the same time;
- f. that acoustic signals are not used if background noise can prevent the signal from being perceived;
- g. that signs or signalling devices are easy to understand and clearly visible in relation to the dangers of which they warn;
- h. that a necessary number of signs or signalling devices are installed according to the degree of danger or risk, or the zone to be covered;
- i. that signs and signalling devices are inspected before they are put into operation and subsequently regularly cleaned, maintained, inspected, repaired and, if necessary, replaced to ensure that they work correctly and as intended;
- j. that signs that require an energy source are provided with an emergency power supply in case of a power failure, unless the risk disappears with the power failure;
- k. that the initiation of light and acoustic signals indicates when a required action starts. The light and acoustic signals must last for as long as the action requires;
- l. that light and acoustic signals are reset immediately after each use;
- m. that measures are taken to supplement or replace the relevant signs where the hearing or sight of affected employees is impaired, for example as a result of wearing personal protective equipment;
- n. Areas, rooms or enclosures used for storage of large quantities of hazardous, flammable or explosive substances or mixtures must be indicated by an appropriate safety sign chosen among those illustrated in Section 5-7 (2) or marked as provided for in Section 5-13, unless the marking on the individual packaging or container is sufficient for this purpose. If there is no suitable safety sign in Section 5-7 to warn against hazardous chemicals or mixtures, the relevant hazard pictogram must be used as provided for in the Regulations of 16 June 2012 No 622 on the classification, labelling and packaging of substances and mixtures (CLP); cf. Regulation (EC) no. 1272/2008 Annex V.

## Section 5-5. Design of safety signs

Symbols for safety signage must be as simple as possible and contain essential information only. The symbols used must resemble the ones shown in Section 5-7 as closely as possible. Any minor deviations must not be capable of causing misunderstandings.

Safety signs shall be made of materials suitable to the environment in which they are to be placed. Safety signs must be of a size and colour and have illuminating properties of a type whereby the signs are easily observed and understood.

## Section 5-6. Placement, lighting and removal of safety signs

Safety signs must be placed so as not to represent a danger or undesired obstacle. Luminescent colours, reflective material or artificial illumination must be used where the natural light is poor.

Safety signs must be illuminated, luminous or be sufficiently luminescent to be visible in an emergency situation.

Safety signs must be removed when the situations they refer to no longer exist.

## Section 5-7. Safety signs to be used

1. Prohibition signs are signs that prohibit actions that, directly or indirectly, can cause danger.

Prohibition signs must have:

- a round shape;
- a black pictogram on a white background, with red edging and diagonal line (slanting downwards from left to right across the pictogram at a 45-degree angle to the horizontal); the red part must take up at least 35% of the area of the sign.

2. Warning signs are signs that warn of risk and danger. Warning signs must have:

- a triangular shape;
- a black pictogram on a yellow background with black edging, with the yellow part taking up at least 50% of the area of the sign.

3. Mandatory signs are signs that impose a specific action. Mandatory signs must have:

- a round shape;
- a white pictogram on a blue background, where the blue takes up at least 50% of the area of the sign.

4. Emergency signs are signs that provide information about emergency exits or first aid equipment. Emergency signs must have:

- a rectangular or square shape;
- a white pictogram on a green background, where the green part takes up at least 50% of the area of the sign.

5. Alarm signs are signs that indicate the location of emergency stop devices, manual call points, evacuation signals and seals. Alarm signs must have:

- a square shape
- a white pictogram on a red background, where the red part takes up at least 50% of the area of the sign.

6. Fire protection signs are signs that indicate the location of equipment to be used in case of fire. Fire protection signs must have:

- a rectangular or square shape;
- a white pictogram on a red background, where the red part takes up at least 50% of the area of the sign.



## Section 5-8. Requirements for light signals

The light emitted by a sign must produce a luminous contrast to its environment, in accordance with the intended conditions of use for the sign. The light must not reduce visibility or make the sign less visible.

The surface of the light signal may be of a single colour or contain a symbol on a specified background.

The colours must be in accordance with the table in Section 5-3.

When the light signal contains a symbol, the symbol must meet the provisions of this chapter.

## Section 5-9. Requirements for the use of light signals

If a device can emit both continuous and intermittent light signals, the intermittent signals shall be used to indicate a higher degree of danger or a more urgent need for the recommended/mandatory intervention or action than is indicated by the continuous light signal.

When an intermittent light signal is used, the frequency of the flashes must be such as to ensure that the message is clearly perceived and that any confusion between different light signals is avoided.

If an intermittent light signal is used instead of or together with an acoustic signal, identical signal codes must be used.

Devices for emitting intermittent light signals in case of serious danger must be subject to special surveillance or be fitted with a spare lamp.

## Section 5-10. Requirements for acoustic signals

Acoustic signals must:

- a. have a sound level that is considerably higher than the background noise level and be audible without being unnecessary loud or painful;
- b. be easily recognisable, especially with regard to the duration of the sound pulses and the frequency between them or between groups of sound pulses, and be distinct from other acoustic signals and ambient background noise.

If a device can emit an acoustic signal at variable and constant frequencies, the variable frequency should be used to indicate a higher level of danger or a more urgent need for the requested/imposed intervention or action than indicated by the constant frequency.

Acoustic signals for evacuation must be continuous.

## Section 5-11. Permanent signs and marking

Permanent marking with safety signs must be used where employees can be exposed to danger and where a prohibition or absolute requirements have been introduced to ensure safety.

Escape routes and equipment for evacuation, rescue, first aid and fire extinguishing must be permanently marked.

## Section 5-12. Noise zones

The entrance to a room or area where employees may be exposed to noise that is equal to or exceeds the upper action values provided for in Chapter 2 of the Regulations concerning Action and Limit Values shall be marked with a mandatory sign to indicate that hearing protection must be worn.

## Section 5-13. Containers and pipes

Containers that are used at the workplace for chemical substances or mixtures classified as hazardous pursuant to the Regulations of 16 June 2012 No. 622 relating to the classification, labelling and packaging of chemical substances and mixtures (CLP), containers used to store such substances or mixtures and visible pipes that contain or transport such substances or mixtures, shall be marked with the relevant hazard pictogram in accordance with the said regulations, cf. Regulation (EC) No. 1272/2008 Annex V.

The marking shall be placed on the visible side(s) and be in the form of signs, self-adhesive labels or painted symbols.

Pipelines must also be marked with an arrow to indicate the direction of flow and have colour-coded marking to show which substances or mixtures are carried through the pipeline.

The marking used on pipelines shall be in an easily visible position near the most dangerous points such as valves, flanges or couplings, and at appropriate intervals.

The first paragraph does not apply to containers used at the workplace during short periods or containers with frequently replaced content, on the condition that satisfactory alternative action is taken, particularly in terms of information and/or training, that ensures the same level of protection.

The marking in the said first paragraph may be:

- replaced by warning signs laid down in Section 5-7 (2), using the same pictograms or symbols. If there is no suitable safety sign in Section 5-7 (2) the relevant hazard pictogram must be used, as stipulated in the Regulations of 16 June 2012 No. 622 relating to the classification, labelling and packaging of chemical substances and mixtures (CLP), cf. Regulation (EF) no. 1272/2008 Annex V.
- complemented with additional information, such as the name of and/or formula for the hazardous substance or mixture and information about risks.
- for transport or moving of containers in the workplace, complemented or replaced by signs used throughout the EEA for transport of hazardous chemicals or mixtures.

## Section 5-14. Signage for the storage of large quantities of substances or mixtures that may entail a health hazard

At storage sites for substances or mixtures that may entail a health hazard, warning signs shall be posted to indicate general danger.

Areas, rooms or enclosures used for the storage of large quantities of substances or mixtures that

may entail a health hazard shall be marked with appropriate safety signs.

The signs shall be of a size that makes them clearly visible and easy to understand. The sign mentioned in the second paragraph shall be placed next to the storage site or on the door leading into the storage room.

### Section 5-15. Fire extinguishing equipment

Fire extinguishing equipment shall be marked and identified with permanent safety signs and, if necessary, warning colours. The colour for marking the equipment shall be red. The red surface must be big enough for the equipment to be easily recognisable.

Entrances to storage sites for fire extinguishing equipment and areas where fire extinguishing equipment is kept shall be marked with a sign.

### Section 5-16. Obstacles and dangerous locations

Places where there is a risk of colliding with obstacles, of falling down or of falling objects must be permanently marked with warning colours or with safety signs.

They shall be marked with alternating yellow and black or red and white stripes in the areas of the undertaking that the employees have access to during their work. The stripes shall form an angle of approximately 45 degrees and be of more or less equal size.

The dimensions of the marking must be commensurate with the scale of the obstacle or the dangerous location.

Example:



### Section 5-17. Vehicular traffic routes

When necessary to ensure safety, vehicular traffic routes shall be marked with continuous stripes in a clearly visible colour, preferably white or yellow, taking into account the colour of the surface.

The stripes must be located so that they indicate the necessary safe distance between the vehicles and any objects in the vicinity, and between pedestrians and vehicles.

Permanent vehicular traffic routes in outdoor areas shall, if necessary, be marked as mentioned in the first and second paragraphs, unless they are provided with appropriate barriers or pavements.

Information about permitted loads must be visible and easily understandable on quays and in other areas where driving may entail a danger of overloading.

### Section 5-18. Harmful atmosphere

Entrances to areas where there is a risk of low oxygen content or hazardous and explosive gas concentrations shall be provided with prohibition and mandatory signs according to the risk in question.

## Section 5-19. Biological agents

Areas where there is a risk of biologically related health hazards shall be marked with a warning sign.

## Section 5-20. High-pressure jetting

Where work is being carried out with a jetting device, the danger zones shall be marked.

# Chapter 5. Signage and marking

## Section 5-1. Requirements for safety signage

Safety signs must quickly and clearly draw attention to objects and situations that may entail danger. Safety signs must not replace necessary protective devices.

## Section 5-2. Safety signage for traffic in work areas

When traffic in a work area may entail a safety risk, the employer shall ensure that necessary signs are posted.

## Section 5-3. Warning colours for signs

Signs that contain a warning colour shall be in accordance with the following table:

<b>Warning colour</b>	<b>Type of sign</b>	<b>Instructions and information</b>
Red	Prohibition sign	Dangerous behaviour Stop
Red	Alarm sign	Shutdown Emergency cutout devices Evacuate
Red	Fire protection sign	Identification and location Be careful
Yellow or amber	Warning sign	Take precautions Examine
Blue	Mandatory sign	Special behaviour or action Wear personal protective equipment
Green	Emergency sign Emergency exit sign First aid sign	Premises, doors, exits, escape routes, equipment

## Section 5-4. Provisions on the use of safety signs and signals

The use of safety signs and signals shall be planned to ensure:

- a. that the location of other signs or other light or sound sources does not affect the visibility or audibility of the signs or signals required pursuant to these regulations;
- b. that several signs are not placed near each other;
- c. that light signals that can be confused are not used at the same time;
- d. that one light signal is not used near another light source of a similar type;
- e. that two or more acoustic signals are not used at the same time;
- f. that acoustic signals are not used if background noise can prevent the signal from being perceived;
- g. that signs or signalling devices are easy to understand and clearly visible in relation to the dangers of which they warn;
- h. that a necessary number of signs or signalling devices are installed according to the degree of danger or risk, or the zone to be covered;
- i. that signs and signalling devices are inspected before they are put into operation and subsequently regularly cleaned, maintained, inspected, repaired and, if necessary, replaced to ensure that they work correctly and as intended;
- j. that signs that require an energy source are provided with an emergency power supply in case of a power failure, unless the risk disappears with the power failure;
- k. that the initiation of light and acoustic signals indicates when a required action starts. The light and acoustic signals must last for as long as the action requires;
- l. that light and acoustic signals are reset immediately after each use;
- m. that measures are taken to supplement or replace the relevant signs where the hearing or sight of affected employees is impaired, for example as a result of wearing personal protective equipment;
- n. Areas, rooms or enclosures used for storage of large quantities of hazardous, flammable or explosive substances or mixtures must be indicated by an appropriate safety sign chosen among those illustrated in Section 5-7 (2) or marked as provided for in Section 5-13, unless the marking on the individual packaging or container is sufficient for this purpose. If there is no suitable safety sign in Section 5-7 to warn against hazardous chemicals or mixtures, the relevant hazard pictogram must be used as provided for in the Regulations of 16 June 2012 No 622 on the classification, labelling and packaging of substances and mixtures (CLP); cf. Regulation (EC) no. 1272/2008 Annex V.

## Section 5-5. Design of safety signs

Symbols for safety signage must be as simple as possible and contain essential information only. The symbols used must resemble the ones shown in Section 5-7 as closely as possible. Any minor deviations must not be capable of causing misunderstandings.

Safety signs shall be made of materials suitable to the environment in which they are to be placed. Safety signs must be of a size and colour and have illuminating properties of a type whereby the signs are easily observed and understood.

## Section 5-6. Placement, lighting and removal of safety signs

Safety signs must be placed so as not to represent a danger or undesired obstacle. Luminescent colours, reflective material or artificial illumination must be used where the natural light is poor.

Safety signs must be illuminated, luminous or be sufficiently luminescent to be visible in an emergency situation.

Safety signs must be removed when the situations they refer to no longer exist.

## Section 5-7. Safety signs to be used

1. Prohibition signs are signs that prohibit actions that, directly or indirectly, can cause danger.

Prohibition signs must have:

- a round shape;
- a black pictogram on a white background, with red edging and diagonal line (slanting downwards from left to right across the pictogram at a 45-degree angle to the horizontal); the red part must take up at least 35% of the area of the sign.

2. Warning signs are signs that warn of risk and danger. Warning signs must have:

- a triangular shape;
- a black pictogram on a yellow background with black edging, with the yellow part taking up at least 50% of the area of the sign.

3. Mandatory signs are signs that impose a specific action. Mandatory signs must have:

- a round shape;
- a white pictogram on a blue background, where the blue takes up at least 50% of the area of the sign.

4. Emergency signs are signs that provide information about emergency exits or first aid equipment. Emergency signs must have:

- a rectangular or square shape;
- a white pictogram on a green background, where the green part takes up at least 50% of the area of the sign.

5. Alarm signs are signs that indicate the location of emergency stop devices, manual call points, evacuation signals and seals. Alarm signs must have:

- a square shape
- a white pictogram on a red background, where the red part takes up at least 50% of the area of the sign.

6. Fire protection signs are signs that indicate the location of equipment to be used in case of fire. Fire protection signs must have:

- a rectangular or square shape;

-a white pictogram on a red background, where the red part takes up at least 50% of the area of the sign.

## Section 5-8. Requirements for light signals

The light emitted by a sign must produce a luminous contrast to its environment, in accordance with the intended conditions of use for the sign. The light must not reduce visibility or make the sign less visible.

The surface of the light signal may be of a single colour or contain a symbol on a specified background.

The colours must be in accordance with the table in Section 5-3.

When the light signal contains a symbol, the symbol must meet the provisions of this chapter.

## Section 5-9. Requirements for the use of light signals

If a device can emit both continuous and intermittent light signals, the intermittent signals shall be used to indicate a higher degree of danger or a more urgent need for the recommended/mandatory intervention or action than is indicated by the continuous light signal. When an intermittent light signal is used, the frequency of the flashes must be such as to ensure that the message is clearly perceived and that any confusion between different light signals is avoided.

If an intermittent light signal is used instead of or together with an acoustic signal, identical signal codes must be used.

Devices for emitting intermittent light signals in case of serious danger must be subject to special surveillance or be fitted with a spare lamp.

## Section 5-10. Requirements for acoustic signals

Acoustic signals must:

- a. have a sound level that is considerably higher than the background noise level and be audible without being unnecessary loud or painful;
- b. be easily recognisable, especially with regard to the duration of the sound pulses and the frequency between them or between groups of sound pulses, and be distinct from other acoustic signals and ambient background noise.

If a device can emit an acoustic signal at variable and constant frequencies, the variable frequency should be used to indicate a higher level of danger or a more urgent need for the requested/imposed intervention or action than indicated by the constant frequency.

Acoustic signals for evacuation must be continuous.

## Section 5-11. Permanent signs and marking

Permanent marking with safety signs must be used where employees can be exposed to danger

and where a prohibition or absolute requirements have been introduced to ensure safety. Escape routes and equipment for evacuation, rescue, first aid and fire extinguishing must be permanently marked.

## Section 5-12. Noise zones

The entrance to a room or area where employees may be exposed to noise that is equal to or exceeds the upper action values provided for in Chapter 2 of the Regulations concerning Action and Limit Values shall be marked with a mandatory sign to indicate that hearing protection must be worn.

## Section 5-13. Containers and pipes

Containers that are used at the workplace for chemical substances or mixtures classified as hazardous pursuant to the Regulations of 16 June 2012 No. 622 relating to the classification, labelling and packaging of chemical substances and mixtures (CLP), containers used to store such substances or mixtures and visible pipes that contain or transport such substances or mixtures, shall be marked with the relevant hazard pictogram in accordance with the said regulations, cf. Regulation (EC) No. 1272/2008 Annex V.

The marking shall be placed on the visible side(s) and be in the form of signs, self-adhesive labels or painted symbols.

Pipelines must also be marked with an arrow to indicate the direction of flow and have colour-coded marking to show which substances or mixtures are carried through the pipeline.

The marking used on pipelines shall be in an easily visible position near the most dangerous points such as valves, flanges or couplings, and at appropriate intervals.

The first paragraph does not apply to containers used at the workplace during short periods or containers with frequently replaced content, on the condition that satisfactory alternative action is taken, particularly in terms of information and/or training, that ensures the same level of protection.

The marking in the said first paragraph may be:

- replaced by warning signs laid down in Section 5-7 (2), using the same pictograms or symbols.

If there is no suitable safety sign in Section 5-7 (2) the relevant hazard pictogram must be used, as stipulated in the Regulations of 16 June 2012 No. 622 relating to the classification, labelling and packaging of chemical substances and mixtures (CLP), cf. Regulation (EF) no. 1272/2008 Annex V.

- complemented with additional information, such as the name of and/or formula for the hazardous substance or mixture and information about risks.

- for transport or moving of containers in the workplace, complemented or replaced by signs used throughout the EEA for transport of hazardous chemicals or mixtures.

## Section 5-14. Signage for the storage of large quantities of substances or mixtures that may entail a health hazard



At storage sites for substances or mixtures that may entail a health hazard, warning signs shall be posted to indicate general danger.

Areas, rooms or enclosures used for the storage of large quantities of substances or mixtures that may entail a health hazard shall be marked with appropriate safety signs.

The signs shall be of a size that makes them clearly visible and easy to understand. The sign mentioned in the second paragraph shall be placed next to the storage site or on the door leading into the storage room.

### Section 5-15. Fire extinguishing equipment

Fire extinguishing equipment shall be marked and identified with permanent safety signs and, if necessary, warning colours. The colour for marking the equipment shall be red. The red surface must be big enough for the equipment to be easily recognisable.

Entrances to storage sites for fire extinguishing equipment and areas where fire extinguishing equipment is kept shall be marked with a sign.

### Section 5-16. Obstacles and dangerous locations

Places where there is a risk of colliding with obstacles, of falling down or of falling objects must be permanently marked with warning colours or with safety signs.

They shall be marked with alternating yellow and black or red and white stripes in the areas of the undertaking that the employees have access to during their work. The stripes shall form an angle of approximately 45 degrees and be of more or less equal size.

The dimensions of the marking must be commensurate with the scale of the obstacle or the dangerous location.

Example:



### Section 5-17. Vehicular traffic routes

When necessary to ensure safety, vehicular traffic routes shall be marked with continuous stripes in a clearly visible colour, preferably white or yellow, taking into account the colour of the surface.

The stripes must be located so that they indicate the necessary safe distance between the vehicles and any objects in the vicinity, and between pedestrians and vehicles.

Permanent vehicular traffic routes in outdoor areas shall, if necessary, be marked as mentioned in the first and second paragraphs, unless they are provided with appropriate barriers or pavements. Information about permitted loads must be visible and easily understandable on quays and in other areas where driving may entail a danger of overloading.

### Section 5-18. Harmful atmosphere

Entrances to areas where there is a risk of low oxygen content or hazardous and explosive gas

concentrations shall be provided with prohibition and mandatory signs according to the risk in question.

## Section 5-19. Biological agents

Areas where there is a risk of biologically related health hazards shall be marked with a warning sign.

## Section 5-20. High-pressure jetting

Where work is being carried out with a jetting device, the danger zones shall be marked.

# Chapter 6. Securing of dangerous workplaces and areas

## Section 6-1. Restrictions on access to danger zones

If workplaces or other areas include danger zones where there may be a risk to the employees' safety due to the nature of the work, for example where objects can fall down or the work involves use of a jetting device, these zones shall be secured against entry by unauthorised employees. Danger zones shall be clearly marked.

## Section 6-2. Securing of overhead electrical cables

On building or construction sites or other temporary work sites, existing overhead electrical cables shall, if possible, be routed away from the area or disconnected. If this is not possible, barriers or clear markings shall be put in place so that vehicles and energy distribution installations are kept at a distance.

When vehicles need to pass under overhead cables, appropriate danger signs shall be in place and the cables shall be shielded.

## Section 6-3. Securing against landslides, ingress of water etc.

Workplaces located at a height or depth shall be firm and stable at all times.

Workplaces, traffic and access routes that can be exposed to landslides, collapse, rock fall, ingress of water or similar must be secured by measures such as:

- a. when practicable in areas that have not been inspected and secured, the driver's cab, manoeuvring platform or workplace on vehicles or equipment must be provided with a protective roof;
- b. cofferdams or caissons in appropriate material of sufficient strength and that are arranged so that employees can get to safety in the event of water ingress or landslides;
- c. sufficiently firm and stable design or shoring of sidewalls in trenches and shafts;
- d. stable execution of traffic routes, storage and parking areas, landfill sites, terraces, excavation faces etc. so that they are able to support the load of the machinery and equipment to be used.

Terraces and traffic routes must be arranged and maintained to allow the safe movement of machinery.

## Section 6-4. Securing in connection with work on or near roads

In connection with work on or near roads or other areas that are open to traffic, the work site shall be sufficiently secured and marked with warning colours or safety signs.

## Section 6-5. Safeguards to prevent falls

Walkways, stairs, platforms and workplaces located at height must be firm and stable at all times and have a design and surface that prevent them from getting slippery.

Where practicable, walkways shall be established on structures where the work entails a risk of personal injuries from falls of more than 2 m to a lower level.

Walkways, stairs, platforms, floors, decks and similar structures must be provided with guard rails in accordance with Section 2-22 where there is a risk of persons or objects falling down. When the height exceeds 2 m, guard rails or other protective measures must always be in place.

Gaps of more than 0.30 m between walls and scaffolds or walkways must be secured. Above permanent workplaces and traffic areas, openings in floors and gratings are only permitted when such openings are passed infrequently, for example in connection with inspection and maintenance.

Gangways for ships etc. must have guard rails and safety nets. Quays must have fastening devices for safety nets at appropriate intervals.

# Chapter 7. Chemicals and pollutants in the working atmosphere

## Section 7-1. Ventilation and fume extraction

Work premises and workplaces, or other areas to which employees have access and where the work or processes may lead to pollution of the air, shall be provided with mechanical ventilation and process-adapted fume extractors so that the concentration of chemicals in the working atmosphere is kept at a completely safe level with regard to health and explosion hazards.

Ventilation and process-adapted fume extractors are to:

- a.remove the pollution at source so as to reduce exposure and the need for using use breathing protection to a minimum;
- b.reduce exposure to pollution throughout the zone that is occupied by people;
- c.prevent the spread of pollution to other premises.

Confined manholes, tunnels, pump stations and similar must have ventilation to ensure a supply of fresh air to all places where work is carried out.

Automatic notification of faults in ventilation systems and fume extractors must be given where necessary out of consideration for the employees' health and safety.

## Section 7-2. Recirculation of air in ventilation systems

Recirculation of air is only permitted if the employer can document that it does not entail a health risk for the employees.

Ventilation that entails recirculation of air containing carcinogenic, mutagenic or reproductively harmful chemicals or air from premises where hot work is carried out is not permitted.

The prohibition on recirculation does not apply to work where wood dust is released.

## Section 7-3. Design of fume extractors

Stationary fume extractors must discharge the exhaust air to the open air. Mobile fume extractors with appropriate filters for the pollutants in question shall be used where the use of stationary fume extractors is impracticable. The exhaust air from fume extractors with filters may not be discharged to confined spaces.

Rooms in which work with cytostatics is carried out must be provided with worktops with fume hoods. The fume hoods must have transparent sashes. Such rooms must have separate ventilation, and the exhaust air must be routed to the open air, either directly or after being cleaned as necessary.

## Section 7-4. Hygienic measures in the event of contact with hazardous substances and mixtures

In workplaces where hazardous substances and mixtures are handled so that there is a danger of spills and splashes, flushing with generous amounts of clean water must be possible.

Eyewash facilities shall be provided in the immediate vicinity of the workplace.

Washing facilities shall be provided in or in the immediate vicinity of work premises where employees may be exposed to carcinogenic, mutagenic or reproductively harmful chemicals.

## Section 7-5. Removal of chemical residues

Rooms and installations shall be designed so that chemical residues can be removed with as little use of other hazardous chemicals as possible.

# Chapter 8. Work in surroundings that may entail exposure to biological agents

## Section 8-1. Workplaces with biological health risks

Workplaces where biological agents are present that may entail a health risk for the employees shall be designed so that exposure is reduced to a minimum and so that the number of employees who may be exposed is kept as low as possible.

## Section 8-2. Hygiene and cleaning

Appropriate disinfection, washing and lavatory facilities must be available to employees who are exposed to biological agents.

## Section 8-3. Containment measures at wastewater treatment plants

Indoor aerated basins and other processes that can give off pollution to the working atmosphere must be covered or enclosed in order to keep the amount of biological agents and hazardous substances in the working atmosphere at a safe level, unless this is impracticable.

## Section 8-4. Containment measures in laboratories and isolation units

In laboratories where employees are or can be exposed to biological agents, or where laboratory are handled that have intentionally been infected with biological agents in infection risk group 2, 3 or 4, cf. Annex 2 to the Regulations concerning Action and Limit Values, or that are suspected of being carriers of such agents, the following containment measures must have been implemented in order to limit the risk of infection:

- a. at least containment level 2 for activities associated with group 2 biological agents;
- b. at least containment level 3 for activities associated with group 3 biological agents;
- c. at least containment level 4 for activities associated with group 4 biological agents.

Containment level 2 or better is required in laboratories where material is handled that may contain biological agents that can cause disease in humans, even if it is not the laboratory's intention to work with biological agents. Containment level 3 or 4 must be used in cases where this is deemed necessary on the basis of current knowledge or suspicion, unless it can be established that a lower containment level is sufficient on the basis of a statement from the competent authorities.

In isolation units occupied by humans or animals that are or are assumed to be infected by biological agents in infection risk groups 3 or 4, cf. Annex 2 to the Regulations concerning Action and Limit Values, the containment measures mentioned in column A that are deemed necessary according to the risk assessment must be implemented.

The following containment measures shall be implemented in laboratories:

	<i>A</i> <i>Containment</i> <i>measure</i>	<i>B</i> <i>Containment level</i>		
		2	3	4
1.	The work premises shall be isolated from all other activities in the same building	No	Recommended	Yes

2.	The work premises shall be marked with a biological hazard sign	Yes	Yes	Yes
3.	An anteroom shall be provided	No	Yes, anteroom or airlock	Yes, airlock
4.	An observation window or similar arrangement shall be provided so that the occupants can be seen	Recommended	Yes	Yes
5.	It must be possible to communicate from inside the room	Recommended	Yes, handsfree telephone/calling system recommended	Yes, handsfree telephone/calling system
6.	The pressure in the work premises must be lower than the atmospheric pressure	No	Recommended, with air pressure control	Yes, with air pressure control
7.	Input and extract air from the work premises must be filtered with the aid of HEPA filters or similar	No	Yes, extract air	Yes, both extract and input air
8.	A safety cabinet shall be provided	No	Yes	Yes, class II safety cabinet
9.	The work premises must have emergency power	No	Recommended	Yes
10.	Each individual laboratory must have a complete set of equipment	No	Yes	Yes

11.	An autoclave must be available in the work premises	No	Yes	Yes
12.	Surfaces must be watertight and easy to clean	Yes, on worktops	Yes, on worktops and floors	Yes, on worktops, walls, floors and ceilings
13.	Surfaces must be resistant to acids, alkalis, solvents and disinfectants	Yes, on work tops	Yes, on worktops and floors	Yes, on worktops, walls, floors and ceilings
14.	The work premises must be sealable to permit disinfection	No	Yes	Yes
15.	Disinfection procedures must be specified	Yes	Yes	Yes
16.	Wastewater must be disinfected before disposal	No	Recommended	Yes
17.	Only designated employees shall have access	Recommended	Yes	Yes, via airlock
18.	Biological agents must be stored in a secure place	Yes	Yes	Yes, in a place with secured access
19.	Handling of infected material, including animals, shall take place in a safety cabinet, an isolated enclosure or in another appropriate containment	If necessary	Yes, if the infection is airborne	Yes

20.	A combustion plant shall be provided for the destruction of dead animals	Recommended	Yes (available)	Yes, on site
21.	Effective control of vectors shall be carried out, e.g. rodents and insects	Recommended	Yes	Yes

### Section 8-5. Containment measures in industrial undertakings

In connection with industrial processes where biological agents in infection risk groups 2, 3 and 4 are used, cf. Annex 2 to the Regulations concerning Action and Limit Values, the following measures shall be implemented:

- a. at least containment level 2 for activities associated with group 2 biological agents;
- b. at least containment level 3 for activities associated with group 3 biological agents;
- c. at least containment level 4 for activities associated with group 4 biological agents.

In connection with industrial use of biological agents in infection risk groups 2, 3 or 4, competent authorities may decide which measures must be implemented.

As regards activities covered by this section, where a final classification of a biological agents has not been possible, but where there are indications that the planned use can entail serious harm to the employees' health, the work shall be carried out in premises that at least correspond to containment level 3.

For industrial processes, the following containment measures shall be implemented:

	Containment measure	Containment level		
		2	3	4
1.	Viable micro-organisms shall be contained in a system that physically separates the work operation from the surrounding environment	Yes	Yes	Yes



2.	Closed production systems shall be placed in a confined area (rooms, buildings)	Recommended	Yes	Yes, confined area built for the purpose
3.	A biological hazard sign shall be posted	Yes	Yes	Yes
4.	An anteroom shall be provided	No	Yes, alternatively an airlock	Yes, airlock
5.	An observation window or similar arrangement shall be provided so that the occupants can be seen	Recommended	Yes	Yes
6.	It must be possible to communicate from inside the area	Yes	Yes, handsfree telephone/ calling system recommended	Yes, handsfree telephone/ calling system
7.	The confined area must have sufficient ventilation to reduce the air pollution to a minimum	Recommended	Recommended	Yes
8.	The pressure in the confined area must be lower than the atmospheric pressure	No	Recommended, with air pressure control	Yes, with air pressure control
9.	Input and extract air from the confined area shall be filtered with the aid of a HEPA filter	No	Yes, extract air	Yes, extract and input air

10.	The confined area must have emergency power	No	Recommended	Yes
11.	Gases released from the closed system shall be handled in a manner whereby	spreading is reduced to a minimum	spreading does not occur	spreading does not occur
12.	Sampling, adding substances to a closed system and transferring viable microorganisms to another closed system shall be performed in a manner whereby	spreading is reduced to a minimum	spreading does not occur	spreading does not occur
13.	Culture fluids shall not be removed from the closed system unless the viable microorganisms have been	rendered inert with the aid of recognised methods	rendered inert with the aid of recognised chemical or physical methods	rendered inert with the aid of recognised chemical or physical methods
14.	Seals shall be designed in a manner whereby	spreading is reduced to a minimum	spreading does not occur	spreading does not occur
15.	The confined area shall be designed to hold the entire content of the closed system in the event of spillage from that system	No	Yes	Yes
16.	Surfaces must be watertight and easy to clean	Yes, on worktops and similar	Yes, on worktops and similar and floors	Yes, on worktops and similar, floors and ceilings

17.	Surfaces must be resistant to acids, alkalis, solvents and disinfectants	Yes, on work-tops	Yes, on worktops and floors	Yes, on worktops, walls, floors and ceilings
18.	It must be possible to disinfect polluted equipment in the confined area (corresponding effect as autoclave)	No	Yes	Yes
19.	The confined area must be sealable to enable fumigation	No	Yes	Yes
20.	Disinfection procedures shall be specified	Yes	Yes	Yes
21.	Wastewater shall be treated before final disposal	rendered inert with the aid of recognised methods	rendered inert with the aid of recognised chemical or physical methods	rendered inert with the aid of recognised chemical or physical methods
22.	Only designated personnel shall have access	Recommended	Yes	Yes, via airlock
23.	Personnel shall wear protective clothing	Yes, work clothes	Yes, protective clothing	Yes, complete change of clothing
24.	Personnel shall have access to decontamination units and sanitary facilities	Yes	Yes	Yes
25.	Personnel shall shower before leaving the zone	No	Recommended	Yes

26.	Wastewater from washbasins and showers shall be collected and treated to render it inert before it is discharged	No	Recommended	Yes
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## Chapter 9. Fee for the processing of building applications

### Section 9-1. Duty to pay fee for the processing of building applications

Anyone who wishes to erect a building or perform construction work and who is obliged to obtain prior consent from the Labour Inspection Authority pursuant to Section 18-9 of the Working Environment Act shall pay a fee pursuant to Chapter 14 of the Regulations concerning Administrative Arrangements.

### Section 10-2. Fine for violations

If anybody acting on behalf of the undertaking violates provisions in these regulations or decisions made pursuant to these regulations, the undertaking may be fined pursuant to Section 18-10 of the Working Environment Act.

### Section 10-3. Entry into force

These regulations enter into force on 1 January 2013.

## Chapter 10. Final provisions

### Section 10-1. Penal sanctions

Wilful or negligent violation of these regulations or decisions made pursuant to these regulations, or aiding and abetting thereto, is a criminal offence pursuant to Chapter 19 of the Working Environment Act.

### Section 10-2. Fine for violations

If anybody acting on behalf of the undertaking violates provisions in these regulations or decisions made pursuant to these regulations, the undertaking may be fined pursuant to Section 18-10 of the Working Environment Act.

### Section 10-3. Entry into force

These regulations enter into force on 1 January 2013.