

# Regulations on technical requirements for building works

(Technical Regulations)

**The english version of the lawtext is not approved by the Storting (Parlament), and can not be considered as a formal lawtext.**

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## ***REGULATIONS ON TECHNICAL REQUIREMENTS FOR STRUCTURES***

Laid down by the Ministry of Local Government and Regional Development on 23 March 2010 pursuant to the Act of 27 June 2008 No. 71 relating to planning and the processing of building applications (Planning and Building Act) sections §§ 11-1, 12-1, 21-10, 23-8, 27-6, 28-1, 28-7, 29-3, 29-4, 29-5, 29-6, 29-7, 29-8, 29-9, 29-10, 30-1, 30-2, 30-4, 30-5, 30-6 and section 7 of the Act of 16 June 1994 No. 20 concerning notified bodies whose task is to carry out conformity assessments. Implementation of EEA Agreement, Annex II chapter III on lifts (Directive 95/16/EC), chapter XXI on construction products (Directive 89/106/EEC), chapter XXIV on machinery (Directive 2006/42/EC), Annex IV on energy (Directive 78/170/EEC) with amendments (Directive 82/885/EEC), (Directive 90/396/EEC and Directive 92/42/EEC) with amendments (Directive 93/68/EEC) and (Directive 2002/91/EC) and Annex VII on the recognition of professional qualifications (Directive 2005/36/EC).

### **PART ONE - GENERAL PROVISIONS**

#### **Chapter 1 Common Provisions**

##### **Section 1-1. *Purpose***

These regulations are intended to ensure that projects are planned, designed and executed on the basis of good visual aesthetics, design for universal accessibility, and in a manner that ensures the project complies with the technical standards for health, safety, the environment and energy.

##### **Section 1-2. *The regulations' application to particular projects***

(1) The following apply to agricultural buildings and equivalent non-agricultural buildings for domestic animals:

- a) chapters 1 to 7
- b) sections 8-1, 8-3, 8-5, first paragraph, 8-8 and 8-9, first and second paragraphs
- c) chapters 9 to 11
- d) sections 12-4, first paragraph, 12-5, first to third paragraphs, 12-6, first to third paragraphs, 12-7, first paragraph, 12-13, first paragraph, 12-14, 12-15, first paragraph and second paragraph, point (a), 12-16, first paragraph, 12-17, first to fourth paragraphs, 12-18, first paragraph, 12-19, 12-20 and 12-21, first and second paragraphs

- e) sections 13-1, first paragraph, 13-6, first paragraph, 13-9, 13-11, 13-12 and 13-14 to 13-21
  - f) chapter 14 with the exception of section 14-7
  - g) chapters 15 to 17.
- (2) The following apply to leisure homes with a single dwelling unit:
- a) chapters 1 to 7
  - b) sections 8-1 and 8-3.
  - c) chapters 9 to 11
  - d) sections 12-5, first to third paragraphs, 12-7, first paragraph, 12-11, first and second paragraphs, 12-13, first paragraph, 12-15, first paragraph, 12-16, first paragraph, points (a) to (d), 12-17, first to fourth paragraphs, 12-19 and 12-20
  - e) section 13-1, first paragraph, 13-4, 13-5, 13-12 and 13-14 to 13-21
  - f) chapter 14. Only sections 14-5, first and second paragraphs, 14-6 and 14-8 apply to leisure homes with heated usable floor space of less than 150 m<sup>2</sup>. Nonetheless, the requirements in chapter 14 do not apply to leisure homes with heated usable floor space of less than 50 m<sup>2</sup>.
  - g) chapters 15 to 17.
- (3) The provisions in the second paragraph shall apply correspondingly to shelters for summer dairy farming, reindeer husbandry or forestry.
- (4) The regulations shall apply, with the exception of chapters 8, 12, 13 and 14, which shall apply insofar as they are appropriate, to structures and installations, including temporary ones.
- (5) The regulations shall apply, with the exception of chapters 8, 12 and 13, which shall apply insofar as they are appropriate, to temporary buildings. In the case of chapter 4, only section 14-5, first and second paragraphs, applies.

## **Chapter 2 Documentation of compliance with the requirements**

### **Section 2-1. *Verification of functional requirements***

- (1) Performance requirements stipulated in the regulations must be complied with.
- (2) In those areas in which performance requirements are not stipulated in the regulations, compliance with the regulations' functional requirements shall be verified either:
  - a) by structures being designed according to pre-accepted performance requirements, or
  - b) by structures being designed according to performance requirements verified by analysis that demonstrates compliance with the regulations' functional requirements.
- (3) If compliance with the regulations' functional requirements is verified by analysis, it must be proven that the applied method of analysis is suitable and valid for the purpose. The assumptions used shall be described and justified. The analysis shall state the necessary safety margins.
- (4) Functional requirements must be in verified in writing.

### **Section 2-2. *Verification of performance requirements***

- (1) Compliance with performance requirements may be verified using methods that conform to Standards Norway's standards or equivalent standards.
- (2) Performance requirements must be in verified in writing.

### **Section 2-3. *Documentation of solutions***

Designers shall prepare adequate documentation confirming that the solutions chosen meet the regulations' requirements.



## **Chapter 3 Documentation of products**

### **Section 3-1. General requirements relating to construction products**

- (1) The provisions in this chapter apply to products that are manufactured and sold for use in structures. The provisions implement Directive 89/106/EEC (Construction Products Directive), Directive 95/16/EC (Lifts Directive) and Directive 2006/42/EC (Machinery Directive).
- (2) Pursuant to this chapter, construction products with documented characteristics shall be able to be marketed and sold freely.
- (3) Documentation is required proving that the products have the characteristics necessary to ensure the completed structure complies with the requirements stipulated by the regulations before products are built into structures.
- (4) Sections 3-2, second paragraph, and 3-4 to 3-11 do not apply to construction products ordered or manufactured for a particular structure and the method of manufacture is not a part of the manufacturer's ordinary activities.
- (5) Sections 3-2, second paragraph, and 3-4 to 3-11 do not apply to construction products that are not of material importance in ensuring the structure complies with the requirements in these regulations.

### **Section 3-2. Requirements relating to characteristics, approval and verification**

- (1) The characteristics of any product covered by the Construction Products Directive shall be such that when it is properly used it helps to ensure the structure complies with fundamental requirements concerning:
  - a) mechanical resistance and stability
  - b) safety in case of fire
  - c) hygiene, health and the environment
  - d) safety in use
  - e) protection from noise and vibrations
  - f) energy economy and heat retentionas described in detail in these regulations and in Annex I to the Construction Products Directive.
- (2) The product shall be subjected to approval and verification systems pursuant to the applicable requirements for attestations of conformity, cf. Section 3-5.

### **Section 3-3. *Marketing, sales and use of products***

- (1) Manufacturers and their agents, including importers, links in distribution chains, and distributors, shall ensure the characteristics of construction products are documented and the product documentation is available before the product is marketed or used in a structure.
- (2) The documentation shall state the product's characteristics pursuant to the relevant technical specifications and the product's origin. The documentation shall be written in Norwegian or another Scandinavian language.
- (3) Before a construction product is made available on the market, the entity selling the product must ensure it is accompanied by satisfactory product documentation. The use of incorrect or incomplete information liable to be misleading with regard to the product's lawful use in a structure or with regard to the product's characteristics is not permitted.

### **Section 3-4. *Technical specifications as a basis for documentation***

- (1) The characteristics and documentation of construction products shall conform to technical specifications. Technical specifications are:
  - a) harmonised product standards published in the Official Journal of the European Union
  - b) European technical approvals announced via the European Organisation for Technical Approvals (EOTA)
  - c) national technical specifications regarded as conforming to the fundamental requirements and which are published in the Official Journal of the European Community
  - d) other satisfactory technical specifications, provided they do not conflict with the EEA Agreement.
- (2) In those cases where a harmonised product standard exists for a construction product, the product documentation shall be drawn up in accordance with Annex ZA of the harmonised standard.

### **Section 3-5. *Attestation of conformity***

- (1) Product documentation for construction products shall contain an attestation of conformity to relevant technical specifications.
- (2) The manufacturer or its agent is responsible for ensuring attestations of conformity exist and comply with the information stated in the relevant technical specifications.
- (3) The procedure for attestation of conformity, stipulated in resolutions of the European Commission or technical specifications for the product, shall be followed.

### **Section 3-6. Reciprocal approval**

- (1) If a construction product may lawfully be marketed in another EEA member state, the product shall be approved for marketing in Norway without new testing or verification.
- (2) Nevertheless, further documentation may be required in cases where it can be proved that the levels of protection in Norway and other EEA member states diverge. The requirement for further product documentation must be necessary and proportional, cf. article 13 of the EEA Agreement.

### **Section 3-7. Lifting equipment**

This provision applies to permanent lifting equipment such as lifts, lifting platforms, escalators, moving pavements, and stair lifts, with the exception of lifting equipment that is part of a manufacturing process. The following requirements apply:

- a) Lifts and their pertinent safety components shall comply with the Lifts Directive.

Lifts are defined in article 24 of the Machinery Directive as: A lifting appliance serving specific levels, having a carrier moving along guides which are rigid and inclined at an angle of more than 15 degrees to the horizontal, intended for the transport of: persons, persons and goods, goods alone if the carrier is accessible, that is to say a person may enter it without difficulty, and fitted with controls situated inside the carrier or within reach of a person inside the carrier.

Lifting appliances moving along a fixed course even where they do not move along guides which are rigid shall be considered lifts falling within the scope of the Machinery Directive.

A carrier (lift car) means a part of the lift by which persons and/or goods are supported in order to be lifted or lowered.

Lifting appliances which move at a speed equal to or slower than 0.15 m/s are defined as other lifting appliances.

- b) Other lifting appliances shall comply with the Machinery Directive.
- c) Conformity assessments used as a basis for EC type approval shall be performed by a notified body. The product shall be assessed against technical specifications and against relevant safety requirements in the directives.
- d) In the case of lifts and their related safety components, installers of lifts pursuant to the Lifts Directive and other lifting equipment pursuant to the Machinery Directive shall carry out a conformity assessment according to the procedure laid down in the respective directives.

**Section 3-8. *Liquid and gaseous fuel fired hot water boilers***

- (1) This provision applies to liquid and gaseous fuel fired hot water boilers fired with a rated output of between 4 kW and 400 kW. The provision does not apply to boilers which can use various types of fuel.
- (2) Hot water boilers shall have a declaration of conformity, or EU type approval, which includes the boiler's energy efficiency. The type approval shall be performed by a notified body and assessed directly against the safety requirements described in the directive that apply to the product in question.
- (3) Type testing and assessment shall be performed in accordance with the rules stipulated in or in pursuant to, respectively:
  - a) Directive 92/42/EEC on hot water boilers
  - b) Directive 90/396/EEC on gas appliances
  - c) Directive 93/68/EEC on the coordination of CE marking rules.

**Section 3-9. *Heat generators for space heating and hot water production***

- (1) This provision applies to heat generators for space heating and the production of hot water for consumption in new or existing buildings, with the exception of non-industrial buildings. Heat generators include hot water boilers, steam boilers, warm air heating systems with components, and, particularly, related burner equipment adapted to the type of fossil fuel used.
- (2) Heat generators shall be checked by a notified body at the production site or upon installation and shall be marked with their important energy related data.
- (3) The verification and labelling shall be performed pursuant to the rules in Directive 78/170/EEC on the performance of heat generators, with the amendments in Directive 82/885/EEC.
- (4) The following heat generators are exempt from the directive:
  - a) heat generators that exclusively use electrical resistance heating
  - b) heat pumps
  - c) connections to district heating plants
  - d) solid fuel fired heat generators
  - e) boilers with flue gas condensation

**Section 3-10. *Notified body***

- (1) A notified body shall attest that construction products comply with their stated technical specifications.

(2) A notified body shall be nominated by the National Office of Building Technology and Administration pursuant to the provisions of the Act of 16 June 1994 No. 20 concerning notified bodies.

(3) An enterprise must be accredited by a national accreditation body in order to be nominated as a notified body. Nonetheless, a notified body that is not accredited can in special circumstances be nominated provided that the nominating authority can document that the body possesses the necessary competence.

### **Section 3-11. CE marking**

(1) A CE mark shows that a product complies with technical specifications as described in section 3-4, first paragraph, points (a) to (c).

(2) The following products shall have a CE mark affixed as stipulated in the products' applicable directives:

- a) lifts and their pertinent safety components that comply with fundamental requirements stipulated in the Lifts Directive
- b) lifting appliances that comply with fundamental requirements stipulated in the Machinery Directive
- c) hot water boilers that comply with fundamental requirements stipulated in the directive on hot water boilers

(3) The affixing of a CE mark on construction products that comply with the Construction Products Directive is voluntary.

(4) The CE mark shall be affixed on the product by the manufacturer or its agent.

(5) The CE mark shall consist of the letters "CE" in the following graphic form:



(6) If the CE mark is reduced or enlarged, the proportions appearing in the model above shall be retained.

(7) The CE marking shall comply with the requirements stipulated in the applicable directive for the products and can include:

- a) the identity number of the body participating in the production control phase
- b) the manufacturer's name or identifying mark

- c) the last two digits of the year the marking was affixed and, if necessary, the product certificate number
  - d) declared product characteristics, classification and similar as stated in directives applying to the product.
- (8) The various parts of which the CE mark consists shall insofar as possible be of the same height and not under 5 mm.
- (9) Information that is necessary from the standpoint of safety shall be in Norwegian.

**Section 3-12. *Products with defects***

- (1) Construction products that are defective in relation to the requirements in these regulations, including incomplete or incorrect documentation, shall not be marketed, sold or used in structures.
- (2) The first paragraph also applies to construction products that may be a hazard to safety, health or the environment, even though they have been declared as conforming to the requirements.

**Section 3-13. *Surveillance authority***

- (1) The National Office of Building Technology and Administration is the surveillance authority for construction products.
- (2) The Ministry of Local Government and Regional Development is the appeals body for decisions taken by the surveillance authority.

**Section 3-14. *Surveillance of construction products***

- (1) The surveillance authority may require the submission of product documentation and other information that is available in connection with the marketing and use of construction products, including documentation of attestations of conformity and testing, and calculation data used in the preparation of product documentation.
- (2) The surveillance authority shall be granted access to products, rooms, areas or other places deemed necessary to carry out an assessment of the product.
- (3) If there are grounds for suspecting that construction products are being marketed sold or used that have deficiencies pursuant to these regulations, the building authorities and other public authorities that process projects pursuant to the legislation relating to the sector covered by section 29-7 of the Planning and Building Act shall report the situation to the surveillance authority.
- (4) If the manufacturer or its agent recalls a defective product from the market, a report shall be submitted to the surveillance authority.

**Section 3-15.** *Reactions from the surveillance authority*

- (1) If the surveillance authority finds that construction products do not have satisfactory product documentation pursuant to these regulations, including incomplete or incorrect documentation, it may issue an administrative order to cease marketing, sales and use of the product until satisfactory product documentation is available. The surveillance authority may impose coercive fines pursuant to section 32-5 of the Planning and Building Act if the administrative order is not complied with.
- (2) The surveillance authority may issue administrative orders to recall a product as described in the first paragraph or require other actions to ensure the product is brought into compliance with the rules in these regulations.
- (3) The surveillance authority may impose violation charges pursuant to section 32-8 of the Planning and Building Act if construction products are marketed or used without satisfactory product documentation pursuant to these regulations.
- (4) In cases where normal or reasonably expected use of construction products may pose a serious risk to safety, human health or the environment, the surveillance authority may temporarily suspend marketing, sale and use of the product in order to perform necessary examinations and safety assessments.

**Section 3-16.** *Fees*

The surveillance authority may charge a fee for the surveillance work associated with the execution of product surveillance. Fee rates shall be set by the National Office of Building Technology and Administration.

## **Chapter 4 Management, operation and maintenance (MOM) documentation**

### **Section 4-1.** *Documentation for the operating phase*

(1) Responsible designers and responsible contractors shall, within their areas of responsibility, provide responsible applicants with the documentation necessary to satisfactorily carry out the start-up, management, operation and maintenance of the structure, technical installations and systems.

(2) In cases where such documentation is obviously superfluous, this requirement does not apply.

### **Section 4-2.** *Retention of documentation for the operating phase*

Documentation for the operating phase shall be handed over to and retained by the owner of the structure.



## **Chapter 5 Degree of utilisation**

### **Section 5-1. Requirements for degree of utilisation**

- (1) The purpose is to regulate the volume of buildings above ground level and the total area of buildings in relation to the required outdoor recreational area, the impact on infrastructure and the environment. The degree of utilisation shall be stipulated in the requirements of the land-use element in the municipal master plan or in the zoning plan for a specific area.
- (2) The degree of building utilisation may be stipulated by one or more of the following methods
  - a) Built-up area (BYA)
  - b) Percentage of built-up area (%-BYA)
  - c) Usable area (BRA)
  - d) Percentage of usable area (%-BRA).

For areas regulated for shopping precincts or shops the degree of utilisation shall always be set out as usable area (BRA)

### **Section 5-2. Built-up area (BYA)**

Built-up area is calculated on the basis of NS 3940 Area- and volume calculations for buildings, though such that parking area is included in the basis for calculation in accordance with section 5-7. Built-up area for a building plot shall be denoted  $m^2$  - BYA and given in non-decimal figures.

### **Section 5-3. Percentage of built-up area (%-BYA)**

Percentage of built-up area indicates the ratio between built-up area in accordance with section 5-2 and the building plot area. Percentage of built-up area is written %-BYA and given in non-decimal figures.

### **Section 5-4. Usable area (BRA)**

- (1) Usable area for buildings on a building plot is stated in  $m^2$  and given in non-decimal figures
- (2) Usable area is calculated on the basis of NS 3940, Area- and volume calculations for buildings, though such that parking area is included in the basis for calculation in accordance with section 5-7. In addition the following applies:
  - a) For buildings with a storey height over 3 m, usable area is calculated as if a horizontal plane had been laid every three metres. It may be stipulated in plans for land use that usable area shall be calculated without the addition of hypothetical

- planes.
- b) The planning requirements shall stipulate how the usable area fully or partly below ground level shall be included in the degree of utilisation assessment.
  - c) When applying usable area as a basis for energy efficiency calculations, a hypothetical horizontal plane laid every three metres for buildings with a storey height over 3 m shall not apply.

**Section 5-5. *Percentage of usable area (%-BRA).***

Percentage of usable area indicates the ratio between usable area in accordance with section 5-4 and the building plot area. Percentage of usable area is written %-BRA and given in non-decimal figures.

**Section 5-6. *Minimum outdoor area (MUA)***

For dwellings, schools, day nurseries etc. where the judgement of the municipality consider it necessary to set aside a minimum outdoor area, the planning provisions should stipulate a minimum outdoor area, including play area. MUA is stated in m<sup>2</sup> in non-decimal figures per unit/dwelling/schoolpupil/ children in day nursery etc. and is written m<sup>2</sup> MUA. Outdoor areas are those parts of the building plot that are not built on or set aside for driving or parking and are suited to this purpose. Parts of terraces not covered by roofs and roof terraces may, subject to the judgement of the municipality, be counted as outdoor areas.

**Section 5-7. *Parking area***

An application for a building permit shall show how parking is to be provided. The area for parking is included in the calculation basis for the degree of utilisation. The number of parking spaces and provisions for car parking shall be in accordance with current zoning plan and/or the provisions of the municipal master plan.

**Section 5-8. *Building plot***

In this chapter a building plot means land in the land-use part of the municipal master plan or the zoning plan set aside as an area for buildings or construction. Unless otherwise is stipulated in provisions of the individual plan, the stipulated degree of utilisation also applies to the individual property.

**Section 5-9.** *The height of buildings*

Cornice- and roof ridge heights are to be specified with contour figures or in metres from graded ground. Heights are measured as in section 6-2. Deviations from the height provisions of section 29-4 first paragraph of the Planning and Building Act must be stipulated in the individual plan. The municipality may in the provisions of the plan stipulate heights for various parts of a building.

## **Chapter 6. Calculation and measurement rules**

### **Section 6-1. *Number of storeys***

The number of storeys in a building is the total number of measurable levels lying above one another and which constitute the main part and additional parts of the building. However, the following levels are not included in the number of storeys:

- a) a basement that only contains an additional part that has a ceiling of less than 1.5 m above the average level of terrain around the building after grading
- b) a mezzanine that has usable floor space of less than 1/5 of the underlying full storey's usable floor space
- c) an attic only containing an additional part and which has usable area of less than 1/3 of the underlying storey's usable floor space

### **Section 6-2. *Height***

- (1) The cornice height is the height to the intersection between the outer surface of the outer wall and the roof surface. If a wall has a turret or a parapet that protrudes more than 0.3 m above the roof surface, the height is taken as the height to the top of the turret or parapet. The cornice height is measured relative to the mean height of the terrain around the building after grading is completed.
- (2) The roof ridge height is the height to the intersection between two sloping roof surfaces. The roof height is measured relative to the mean height of the terrain around the building after grading is completed.
- (3) The height described in section 29-4, second paragraph, of the Planning and Building Act is the average cornice height of the façade facing the boundary of an adjoining property.
- (4) Municipalities may stipulate in their planning rules that heights shall be measured relative to graded terrain, existing terrain, street level or a specified contour height. In the case of a building which extends across a block, the municipality decides which heights shall be used for the various parts of the building. The same applies to corner buildings and to structures covering a very large area or with an unusual shape.

### **Section 6-3. *Distance***

The distance is measured as the shortest horizontal distance between the structure's façade line and the neighbouring structure's façade line or the boundary of an adjoining property. In the case of structures with protruding building components, the distance is increased by an amount equivalent to the amount the building component protrudes in excess of 1.0 m from the façade line.

**Section 6-4. Area**

Minor projects as described in section 29-4 third paragraph point (b) of the Planning and Building Act are buildings in which neither the total usable floor space nor developed area exceeds 50 m<sup>2</sup>. The same applies to other minor projects that cannot be measured pursuant to *Norwegian Standard NS 3940 Area and volume calculations for buildings*

## **PART TWO – ACTS OF NATURE, OUTSIDE AREAS AND THE EXTERNAL ENVIRONMENT**

### **Chapter 7 Protection against acts of nature**

#### **Section 7-1. *General requirements relating to protection against acts of nature***

- (1) Structures shall be sited, designed and constructed to ensure satisfactory protection against damage or significant nuisance from acts of nature.
- (2) Projects shall be designed and constructed to ensure that structures, building land and adjoining terrain are not exposed to damage or significant nuisance as a consequence of the project.

#### **Section 7-2. *Protection against flooding and storm surges***

- (1) Structures which would suffer particularly severe consequences due to flooding shall not be sited in areas prone to flooding.
- (2) The flooding safety class of structures in areas prone to flooding shall be stipulated. Structures shall be sited, designed or protected against flooding such that the largest nominal annual probability in the table below is not exceeded. In cases where there is a risk to life, the same safety class as for landslides and avalanches shall apply, cf. section 7-3.

*Table: Safety classes for structures in areas prone to flooding*

<b>Flooding safety class</b>	<b>Impact</b>	<b>Greatest nominal annual probability</b>
F1	slight	1/20
F2	moderate	1/200
F3	severe	1/1000

- (3) The first and second paragraphs apply correspondingly to storm surges.
- (4) Structures shall be sited or protected such that damage due to erosion does not occur.

**Section 7-3. Protection against landslides and avalanches**

- (1) Structures which would suffer particularly severe consequences due to a landslide or avalanche, including the secondary effects of a landslide or avalanche, shall not be sited in areas prone to landslides or avalanches.
- (2) The landslide/avalanche safety class of structures in areas prone to landslides or avalanches shall be stipulated. Structures and their related outside areas shall be sited, designed or protected against landslides or avalanches such that the largest nominal annual probability in the table below is not exceeded.

*Table: Safety classes for siting structures in areas prone to landslides or avalanches*

<b>Landslide/avalanche safety class</b>	<b>Impact</b>	<b>Greatest nominal annual probability</b>
S1	slight	1/100
S2	moderate	1/1000
S3	severe	1/5000

**Section 7-4. Protection against landslides and avalanches - exemption for tidal waves due to rock falls**

- (1) Permission may still be granted to build structures not covered by section 7-3, first paragraph, in areas prone to flooding due to rock falls in those case were all the following conditions are met:
  - a) the consequences of building restrictions are severe and the development is socially vital,
  - b) personal safety is addressed by a proper emergency system based on real-time monitoring, warnings and evacuation, and a special assessment has been carried out of whether or not there should be restrictions concerning the construction of structures that are difficult to evacuate. The warning period shall not be shorter than 72 hours and the evacuation time shall be a maximum of 12 hours,
  - c) there are no alternative, appropriate, safe building sites,
  - d) physical safety measures against the secondary effects of rock falls have been clarified, and
  - e) the development has been clarified in the regional master plan, land-use element of the municipal master plan or zoning plan (area zoning plan), including through an environmental impact assessment.
- (2) Smaller extensions, additions or building below existing structures may be permitted without with the requirement for a plan pursuant to the first paragraph, point (e) and a dispensation pursuant to chapter 19 of the

Planning and Building Act, as long as the extension does not result in an increased risk to life and health.



## **Chapter 8 Outside areas and siting of structures**

### **Section 8-1. *Outside areas***

Outside areas shall be adequately suitable and designed for their function. Outside areas are defined as developed access ways, parking spaces, outdoor recreation areas linked to a structure and outdoor recreation areas for the general public.

### **Section 8-2. *Outside areas subject to design for universal accessibility requirements***

(1) The following shall be designed for universal accessibility pursuant to the provisions in the regulations:

- a) outside areas for the general public
- b) common outside areas for larger residential areas
- c) outside areas for residential buildings requiring a lift
- d) outside areas for structures for the general public
- e) outside areas for work buildings

(2) The first paragraph does not apply in those cases where an outside area or part of an outside area is pursuant to its function unsuitable for people with impaired mobility.

### **Section 8-3. *Siting of structures***

Structures shall be well-adapted to the terrain with regard to good architectural design, visual aesthetics, natural conditions, safety, health, the environment, accessibility, usability and energy needs. Structures shall be sited such that light and sun conditions, as well as sound and vibration factors, are taken into account.

### **Section 8-4. *Outdoor recreation areas***

(1) Outdoor recreation areas shall pursuant to their function be suitable for recreation, play and activities for various age groups.

(2) Outdoor recreation areas shall be sited and designed such that good quality is achieved, including in relation to light and sun conditions, noise and other environmental impacts.

(3) Outdoor recreation areas shall be designed to avoid risk to people. Play areas shall be shielded from traffic. Level differences shall be secured to prevent fall injuries.

- (4) Structures shall, pursuant to their function, have adequate outdoor recreation areas.
- (5) The following apply to outdoor recreation areas subject to design for universal accessibility requirements:
- a) Developed areas set aside for play and recreation shall have a horizontal field with a solid surface of a minimum 1.6 m x 1.6 m, which enables participation and equitable use.
  - b) Level differences in outdoor developed areas shall be secured and/or marked with visual and tactile means.
  - c) Columns, railings, etc shall visually contrast with their surroundings.
  - d) There shall be room for a wheelchair where seating is constructed.
  - e) Developed swimming areas shall be equipped or designed to ensure it is easy to enter and exit the water.

**Section 8-5.** *General requirements relating to pedestrian access and walking lines*

- (1) Pedestrian access ways must be safe and designed for the expected traffic and transport. Pedestrian access ways are defined as footpaths from a drivable road and parking at the entrance to a structure and outdoor recreational area, and between these.
- (2) Key walking lines that cross open areas in larger squares and squares subject to design for universal accessibility requirements must have clearly demarcated walking zones or the necessary guide lines. Patterns in roadways that give misleading directional information shall be avoided.

**Section 8-6.** *Pedestrian access ways to structures*

- (1) Pedestrian access ways to structures containing dwelling units shall be free of steps and have a maximum gradient of 1:20. A maximum gradient of 1:12 is permitted for shorter sections of up to 3.0 m. For every 0.6 m height difference there must be a resting platform with the following minimum dimensions: 1.6 m x 1.6 m. If the terrain is too steep to comply with the gradient requirements, the requirement of pedestrian access to be free of steps and gradient requirements to buildings containing dwelling units that are not required to have a lift, shall not apply.
- (2) Pedestrian access ways to structures subject to design for universal accessibility requirements must be free of steps and have a maximum gradient of 1:20. A maximum gradient of 1:12 is permitted for shorter sections of up to 3.0 m. For every 0.6 m height difference there must be a resting platform with the following minimum dimensions: 1.6 m x 1.6 m. If the terrain is too steep to comply with the 1:20 gradient requirement, the maximum gradient shall be 1:10.

- (3) Pedestrian access ways to structures containing dwelling units that are required to have a lift and structures subject to design for universal accessibility requirements shall also have
- a) a minimum clearance width of 1.8 m. A minimum clearance width of 1.4 m is permitted for shorter sections. The maximum cross fall shall be 2 per cent.
  - b) a solid, non-slip surface
  - c) visual and tactile demarcation
  - d) the necessary lighting
- (4) Pedestrian access ways to buildings subject to accessible dwelling unit requirements shall have a minimum clearance width of 1.6 m. A minimum clearance width of 1.4 m is permitted for shorter sections.

**Section 8-7. Pedestrian access ways to outdoor recreation areas subject to design for universal accessibility requirements**

Pedestrian access ways to outdoor recreation areas subject to design for universal accessibility requirements must be free of steps and have a maximum gradient of 1:20. A maximum gradient of 1:12 is permitted for shorter sections of up to 3.0 m. For every 0.6 m height difference there must be a resting platform with the following minimum dimensions: 1.6 m x 1.6 m. In those case where there is more than one outdoor recreational area with the same function, at least one of these must have pedestrian access that complies with the requirements. Other pedestrian access ways shall have a maximum gradient of 1:10. If the terrain is too steep to comply with the 1:20 gradient requirement, the maximum gradient shall be 1:10. In addition the following apply:

- a) The minimum clearance width shall be 1.8 m. A minimum clearance width of 1.4 m is permitted for shorter sections. The maximum cross fall shall be 2 per cent.
- b) There must be a solid, non-slip surface and visual and tactile demarcation.

**Section 8-8. Vehicular access**

Structures shall have satisfactory vehicular access ways suitable for the structure's function.

**Section 8-9. Parking spaces and other standing spaces**

- (1) Structures shall have the necessary parking spaces and standing spaces suitable for the structure's function.
- (2) Structures shall have sufficient standing spaces for expected goods deliveries.

(3) Buildings containing dwelling units that are required to have a lift and structures subject to design for universal accessibility requirements shall have a sufficient number of parking spaces for people with impaired mobility and sufficient other standing spaces for wheelchairs, prams, etc. The following apply to parking spaces:

- a) Parking spaces must be close to the main entrance.
- b) Parking spaces in structures must be sited close to lifts.
- c) Parking spaces must have adequate lighting and be clearly marked and signposted.

(4) Outside areas for the general public shall have a sufficient number of parking spaces for people with impaired mobility and sufficient other standing spaces for wheelchairs, prams, etc. The following apply to parking spaces:

- a) Parking spaces must be close to the main entrance.
- b) Parking spaces must have adequate lighting and be clearly marked and signposted.

**Section 8-10. Steps in outside areas**

(1) Steps in outside areas must be easy and safe to navigate.

(2) Steps in outside areas subject to design for universal accessibility requirements shall also:

- a) have an even gradient and each riser have the same height
- b) bannisters with handrails on both sides that follow the entire course of the flight of stairs and end after the first and last step with a rounded edge
- c) tactile and visual warning fields before the uppermost first step, an awareness field before and into the lowest step, and a visually marked contrast field on the front edge of the other treads.

## **Chapter 9 External environment**

### **Section 9-1. *General requirements relating to the external environment***

Structures shall be designed, constructed, operated and demolished, and waste managed, in a manner that results in the least possible impact on natural resources and the external environment.

### **Section 9-2. *Substances posing a health or environmental risk***

Construction products shall be chosen that have no or a low content of substances posing a health or environmental risk.

### **Section 9-3. *Soil contamination***

Surveys shall be carried out to find out if there is any ground contamination when planning structures. Any ground contamination must be treated in accordance with chapter 2 of the Regulations relating to pollution control (Pollution Regulations).

### **Section 9-4. *Selected habitats***

The following provisions apply when laid down in regulations pursuant to sections 52 and 53, fifth paragraph, of the Nature Diversity Act concerning specific habitats, which occur in the municipality and the conditions of the habitat have not been clarified in a legally binding plan.

- a) The construction, siting and designing of projects shall take particular account of occurrences of a selected habitat to avoid diminishing the habitat's distribution and the occurrence's ecological status.
- b) Where the impact on the selected habitat has not been clarified pursuant to the rules concerning impact assessments in chapter 4 of the Planning and Building Act, the developer shall prepare an environmental impact assessment of the project's effects on the habitat.

### **Section 9-5. *Waste***

- (1) Structures shall be ensured a justifiable and intentional lifetime such that quantities of waste over a structure's lifetime are kept to a minimum.
- (2) Waste means materials and objects from building, renovating or demolishing buildings, structures and installations. Waste consisting of excavated soil from building activities are not covered by these rules.
- (3) Construction products suitable for reuse and material recovery shall be chosen.

**Section 9-6. *Waste management plan***

- (1) Waste management plans for the following types of projects shall explain the planned management of waste by type of waste and quantity:
  - a) construction, additions, extension and building below a building if the project exceeds 300 m<sup>2</sup> of usable floor space
  - b) substantial modification, including façade alteration, or substantial repair of the building if the project affects parts of a building that exceeds 100 m<sup>2</sup> of usable floor space
  - c) demolition of a building or part of a building that exceeds 100 m<sup>2</sup> of usable floor space
  - d) construction, additions, extension, building below, modification or demolition of structures and installations if the project generates more than 10 metric tons of building and demolition waste
- (2) Projects affecting more than one building, structure or installation shall be considered as a whole.

**Section 9-7. *Surveys of hazardous waste and environmental restoration plans***

- (1) When existing structures are modified or demolished, a survey shall be carried out of building elements, installations and similar that may constitute hazardous waste, cf. section 11-4 of the Regulations concerning recovery and treatment of waste (Waste Regulations).
- (2) A separate environmental restoration plan shall be drawn up for the projects listed in section 9-6, first paragraph, points (b) to (d).
- (3) The environmental restoration plan shall as a minimum contain information about:
  - a) who carried out the survey
  - b) the date of the survey
  - c) the year of construction and previous use if known
  - d) the results of representative material tests and analyses
  - e) the occurrence and quantity of hazardous waste by type
  - f) the location of hazardous waste in the building, indicated by a photograph or drawing in cases of doubt
  - g) how hazardous waste is identified by marking, signposting or other measures
  - h) how it is planned to remove the hazardous waste

- i) where it is planned to deliver the hazardous waste
- j) all finds of hazardous waste, compiled in a table

**Section 9-8. *Waste separation***

A minimum of 60 per cent by weight of the waste generated by projects in section 9-6, first paragraph, shall be separated into different types of waste and delivered to approved waste recipients or directly to recovery.

**Section 9-9. *Final report on actual disposal of waste***

A final report describing the actual disposal of waste by type of waste and quantity shall be prepared for projects in section 9-6, first paragraph. The delivery to an approved recipient or directly to recovery shall be documented.

**Section 9-10. *Emissions requirements relating to wood stoves***

- (1) Enclosed wood-burning heaters shall be adequately designed to prevent pollution. Emissions from such a stove shall not exceed the values stipulated in *Norwegian Standard NS 3059 Enclosed wood heaters - Smoke emissions - Requirements*.
- (2) In those cases where older heaters of historical value are necessary out of consideration to the interior of buildings of cultural-historical, antiquarian or preservation value, heaters of historical value may nevertheless be used.

## **PART THREE - REQUIREMENTS RELATING TO STRUCTURES**

### **Chapter 10 Structural safety**

#### **Section 10-1. Personal and material safety**

Structures shall be sited, designed and constructed to ensure they do not represent a danger to people and domestic animals and to ensure that any collapse or accident does not result in unacceptably great material damage or loss to society.

#### **Section 10-2. Structural safety**

- (1) The characteristics of construction products and materials shall ensure that the fundamental requirements for a structure's mechanical resistance and stability are complied with.
- (2) Structures shall be designed and constructed to ensure the attainment of an adequate level of safety against failure and sufficient rigidity and stability for loads that may occur during their intended use. This requirement applies to structures under construction and completed structures.
- (3) The fundamental requirements for a structure's mechanical resistance and stability, including ground conditions and safety measures during construction and upon completion, can be complied with by designing structures in accordance with *Norwegian Standard NS-EN 1990 Eurocode: Basis of structural design* and additional standards in the series NS-EN 1991 to NS-EN 1999, with associated national additions.

#### **Section 10-3. Falls from and collisions with structures**

- (1) Roof and façade materials with affixed equipment and devices must be executed and fastened to ensure they do not fall down under expected climatic conditions and design loads.
- (2) Structures shall be secured so that ice and snow cannot fall onto places where people and domestic animals may be.
- (3) Distances from underlying terrain to roof protrusions and other overhead fixed or movable components of a structure shall be satisfactory to ensure collisions are avoided.



## Chapter 11 Safety in case of fire

### I General requirements relating to safety in case fire

#### Section 11-1. *Safety in case of fire*

- (1) Structures must be designed and constructed to ensure the attainment of an adequate level of safety in case of fire for people present in or on the structure, for material assets, and for environmental and social factors.
- (2) There must be an adequate opportunity to rescue people and domestic animals and for effective fire extinguishing.
- (3) Structures shall be sited, designed and constructed to ensure the probability of fire spreading to other structures is minimal.
- (4) Structures where a fire may pose a serious environmental hazard or affect other material community interests, shall be designed and constructed to ensure the probability of harm to the environment or other material community interests is minimal.

#### Section 11-2. *Hazard classes*

Based on the threat a fire could entail in relation to danger to life and health, a structure, or different areas of use in a structure, shall be categorised into hazard classes pursuant to the table below. The hazard classes shall provide a basis for design and construction to ensure escape and rescue in case of fire.

*Table: Hazard classes*

Hazard classes	Structures designed for only the sporadic presence of people	People in the structure are familiar with the opportunities for escape, including escape routes, and can get to safety unassisted	Structures designed for overnight stays	Intended use of the structure does not represent a serious fire hazard
1	yes	yes	no	yes
2	yes/no	yes	no	no
3	no	yes	no	yes
4	no	yes	yes	yes
5	no	no	no	yes
6	no	no	yes	yes

**Section 11-3. Fire classes**

Based on the consequences a fire could entail in relation to danger to life and health, social interests and the environment, a structure, or different areas of a structure, shall be categorised into fire classes pursuant to the table below. The fire classes shall provide a basis for design and construction to ensure the structure's load bearing capacity in case of fire.

*Table: Fire classes*

<b>Fire class</b>	<b>Impact</b>
1	Slight
2	Moderate
3	Serious
4	Very serious

**II Load bearing capacity and stability in case of fire and explosion**

**Section 11-4. Load bearing capacity and stability**

- (1) Structures shall be designed and constructed to ensure the structure as a whole, as well as its individual parts, attains an adequate level of safety with regard to load bearing capacity and stability.
- (2) The thermal load from the energy of a fire and the expected progress of a fire in the structure must be taken into account when designing for adequate load bearing capacity and stability in case of fire.
- (3) Load bearing systems in structures in fire classes 1 and 2 shall be designed to maintain adequate load bearing capacity and stability for a minimum of the time necessary to escape and rescue persons and domestic animals in or on the structure.
- (4) Main load bearing systems in structures in fire classes 3 and 4 shall be designed to maintain adequate load bearing capacity and stability for the complete duration of a fire, as this can be modelled.
- (5) Secondary structures and structures that are only load bearing for one storey or for the roof shall be designed to maintain adequate load bearing capacity and stability during the time necessary to escape and rescue persons in or on the structure.

**Section 11-5. Safety in case of explosion**

Structures whose intended use may pose an explosion hazard shall be designed and constructed to maintain personal safety and load bearing capacity at an adequate level.

### **III Measures to prevent ignition and the development and spread of fire and smoke**

#### **Section 11-6.** *Measures to prevent the spread of fire between structures*

- (1) Fires shall be prevented from spreading between structures in order to maintain the safety of people and domestic animals, and so that a fire does not cause an unreasonably large financial loss or social consequences.
- (2) The distance between low-rise structures shall be at least 8.0 m, unless measures are taken to prevent fires spreading between the structures during the time required for escape and rescue in the other structure. The provision does not apply to low-rise structures comprising only one dwelling unit.
- (3) When low-rise structures are constructed with a distance of less than 8.0 m between them, the structures' total gross floor space shall be limited so that a fire does not result in an unreasonably large financial loss, unless other measures are implemented to prevent such losses.
- (4) High-rise structures shall be a minimum distance of 8.0 m from other structures, unless the structure is constructed to ensure fire will be prevented from spreading for the full duration of a fire.
- (5) Structures that, either due to their very nature or the activity taking place in them, entail a particularly high probability of fire spreading, shall be designed, constructed and protected or sited to ensure the particularly high probability of fire spreading to other structures is reduced to an acceptable level.

#### **Section 11-7.** *Fire sections*

- (1) Structures shall be divided into fire sections so that a fire within one fire section does not result in unreasonably large financial or material losses. A fire shall, given the anticipated extinguishing efforts, be able to be limited to the fire section in which it started.
- (2) In fire sections with different fire classes, the characteristics of the fire barrier between the different fire classes shall be determined by the highest fire class. Underlying storeys shall have a fire class at least equal to the storeys above.

#### **Section 11-8.** *Fire cells*

- (1) Structures shall be appropriately divided into fire cells. Areas posing differing risks to life and health and/or in which the risk of fire occurring differs shall be separate fire cells unless the same level of safety can be obtained by other means.

(2) Fire cells shall be constructed in a manner that prevents the spread of fire and conflagration gases to other fire cells during the time necessary for escape and rescue.

**Section 11-9.** *The fire characteristics of products and materials*

(1) Structures shall be designed and constructed to ensure the probability of fires occurring, developing and spreading is minimal. The use of the structures and time necessary for escape and rescue shall be taken into account.

(2) Products and materials shall not have characteristics that make an unacceptable contribution to the development of a fire. Weight shall be given to the possibility of ignition, speed of heat transfer, smoke production, development of burning drops and time to flashover.

**Section 11-10.** *Technical installations*

(1) Technical installations shall be designed and installed to ensure an installation does not substantially increase the risk of a fire occurring or a fire and smoke spreading.

(2) Installations intended to perform a function during a fire shall be designed and constructed to ensure their function is maintained for the necessary time. This also includes the necessary supply of water, electricity or signals that are needed to maintain the installation's function.

#### **IV Facilitating escape and rescue**

**Section 11-11.** *General requirements relating to escape and rescue*

(1) Structures shall be designed and constructed to allow speedy and safe escape and rescue. Account shall be taken of people with impaired mobility.

(2) The time available for escape shall be greater than the time required to escape from the structure. An adequate safety margin shall be included.

(3) Fire cells shall be laid out in such a way and have interior fittings that facilitate speedy and efficient warnings, escape and rescue.

(4) Escape routes from places to the exits from a fire cell must be clear and facilitate speedy and efficient escape.

(5) During the time a fire cell or escape route shall be used by people escaping, no temperatures, concentrations of smoke gases or other circumstances shall occur that hinder escape.

(6) Signs, symbols and text showing escape routes and safety equipment must be able to be read and understood while escaping when fire or smoke are developing.

**Section 11-12.** *Measures that influence evacuation and rescue times*

(1) In structures designed for activities that could result in evacuation and rescue taking a long time, proactive measures shall be implemented that increase the available escape time. The following shall, as a minimum, be complied with:

- a) Structures, or parts of structures, in hazard class 4 that require a lift shall have an automatic fire extinguishing system. Parts of a structure with and without automatic fire extinguishing system shall have different fire sections.
- b) Structures in hazard class 6 shall have an automatic fire extinguishing system.
- c) In the case of temporary structures and structures that are not connected to public or equivalent private water supplies, a dispensation may be granted from the requirement for an automatic fire extinguishing system.
- d) In those cases where an automatic fire extinguishing system is required, other measures may nonetheless be used that can hinder, limit or control a fire locally where it arises.

(2) Structures shall have equipment that enables the early discovery of fires such that the necessary escape time is reduced. The following shall, as a minimum, be complied with:

- a) Structures designed for activities in hazard classes 2-6 shall have a fire alarm system.
- b) In structures designed for few people and smaller structures, smoke detectors can be used if the escape situation is particularly simple and clear. Smoke detectors shall be connected to the mains and have a battery backup. In fire cells needing more than one smoke detector, the detectors shall be connected in series. In structures without power supplied by the mains, battery operated smoke detectors may be used.

(3) In structures containing many people or in which escape and evacuation routes may be long and involve changes of direction, the escape routes shall be well lit and marked such that escape can be effected in a speedy and efficient manner. Large structures and structures designed for a large number of people, as well as structures designed for activities in hazard classes 5 and 6, shall have a satisfactory guide system.

- (4) Structures in hazard classes 5 and 6, other structures for the general public, as well as work buildings, shall have evacuation plans drawn up for them before the structure is occupied.
- (5) Technical fire installations of importance for escape and rescue efforts shall be clearly identified by signs, unless the equipment is intended for people in a single dwelling unit and it must be assumed the people are well acquainted with its location.

**Section 11-13. Exits from fire cells**

- (1) Fire cells shall have at least one exit to a safe location or exits to two independent escape routes or one exit to an escape route that has two alternative directions of escape that lead to independent escape routes or safe locations.
- (2) Fire cells in structures in hazard class 4 with up to 8 storeys can have an exit to a stairwell executed as an escape route. Dwelling units are required to have at least one window or balcony available for rescue and fire extinguishing efforts, cf. section 11-17.
- (3) Fire cells consisting of more than one storey, or which have a mezzanine, shall have at least one exit from each storey. In the case of structures in hazard classes 1, 2, 3 and 4, the exits from these levels, besides the entrance level, may be windows that facilitate safe escape.
- (4) In low-rise structures intended for activities in hazard classes 1, 2, 3 and 4, the exit from a fire cell may either lead to a safe location or to an escape route that only has one direction of escape, provided that each fire cell has windows designed for and which can facilitate safe escape.
- (5) Fire cells for a large number of people shall have an adequate number of, and a minimum of two, exits leading to an escape route.
- (6) The exit from fire cells designed for only the sporadic presence of people can pass through another fire cell.
- (7) Doors to escape routes shall be designed and constructed to ensure speedy escape and avoid a risk of congestion. The following shall, as a minimum, be complied with:
  - a) Doors shall be adequately wide and high, and they must be easy to open without a key.
  - b) Doors shall open outwards in the direction of escape. Doors to escape routes may nevertheless open inwards away from the direction of escape if there is no risk of congestion during an evacuation.

#### **Section 11-14.** *Escape routes*

- (1) Escape routes shall, in a clear and easily understandable way, lead to a safe location. They shall be of adequate width and constructed as a separate fire cell designed for speedy and efficient escape.
- (2) Where an escape route goes over more than one storey, stairs shall be separated from the rest of the escape route and other fire cells, so that the stairs' function as a safe escape route is safeguarded during the stipulated available escape time.
- (3) Escape routes that contain two directions of escape shall be divided into appropriate units so that smoke and conflagration gases do not block both directions of escape.
- (4) Main entrances to structures, or a part of structures, for larger numbers of people shall facilitate safe escape.
- (5) Doors in escape routes shall be designed and constructed so as to ensure speedy escape and avoid a risk of congestion. The following shall, as a minimum, be complied with:
  - a) Doors shall be adequately wide and high, and they must be easy to open without a key.
  - b) Doors shall open outwards in the direction of escape.
- (6) A roof-covered yard or street may be used as an escape route if it is designed for safe escape. There shall also be an alternative escape route besides the roof-covered space. Smaller fire cells located at courtyard level may use the roof-covered area as an escape route from both exits, provided that the space is designed for safe escape.
- (7) Lifts and escalators may not be included as parts of evacuation or escape routes. Such devices shall come to a stop in a safe manner in the event of a fire alarm. Moving pavements specially designed for safe use can be included as part of an evacuation or escape route.

#### **Section 11-15.** *Facilitating rescues of domestic animals*

Structures designed for keeping domestic animals shall be designed and constructed to ensure the speedy and safe rescue of domestic animals.

### **V Facilitating the extinguishing of fires**

#### **Section 11-16.** *Facilitating the manual extinguishing of fires*

- (1) Structures shall be designed for the effective manual extinguishing of fires.
- (2) In or on all structures where a fire may occur there shall be fire extinguishing equipment that facilitates effective fire fighting efforts in the

initial phase of a fire. This is in addition to any automatic fire extinguishing system.

(3) Fire extinguishing equipment shall be sited to facilitate effective extinguishing efforts. In the case of smaller structures designed for activities in hazard class 1, the equipment may be located in neighbouring structures.

(4) Fire extinguishing equipment must be clearly marked unless it is intended for people in a single dwelling unit and it must be assumed the people are well acquainted with its location.

**Section 11-17. *Facilitating the work of rescue and fire fighting personnel***

(1) Structures shall be sited and designed to ensure rescue and fire fighting personnel, and their required equipment, are able to gain useful access to and inside the structure for rescue and fire fighting efforts.

(2) Structures shall be designed to ensure fires can be easily located and fought.

(3) Technical fire installations of importance for escape and fire fighting efforts shall be clearly marked.



## Chapter 12 Layouts of and building components in structures

### I Introductory provisions relating to layouts and building components

#### **Section 12-1.** *Requirements relating to structures designed for universal accessibility*

Structures for the general public and work buildings shall be designed for universal accessibility pursuant to the provisions in the regulations, unless the structure or part of the structure is, given its function, unsuitable for people with impaired mobility.

#### **Section 12-2.** *Requirements relating to accessible dwelling units*

(1) Dwelling units in buildings that require lifts shall have all primary functions on the entrance level. The entrance level shall be accessible to people with impaired mobility pursuant to the provisions in the regulations.

(2) Dwelling units in buildings that do not require lifts and which have all primary functions at the entrance level, shall be accessible at the entrance level pursuant to the provisions in the regulations, unless according to section 8-6 the requirements to pedestrian access shall not apply.

(3) Primary functions shall be defined as living room, kitchen, bedroom, bathroom and toilet.

#### **Section 12-3.** *Requirements relating to lifts in structures*

(1) Structures for the general public and work buildings with two or more storeys shall have lifts. Structures with up to and including three storeys and little traffic by persons may have a lifting platform. Lifting platforms and lifts shall be accessible to all. The following requirements relating to dimensions apply:

- a) At least one lift car shall have minimum interior dimensions of 1.1 m x 2.1 m in structures with three storeys or more.
- b) At least one lift car shall have minimum interior dimensions of 1.1 m x 1.6 m in structures with only two storeys.
- c) Lifting platforms shall have minimum interior dimensions of 1.1 m x 1.6 m.

(2) Buildings with three storeys or more containing dwelling units shall have lifts. The requirement does not apply for houses with one unit and in those cases where the access from the entrance to the dwelling unit is limited to one storey. Lifting platforms may replace lifts in structures containing dwelling units with three storeys. Lifting platforms shall serve a maximum of six dwelling units. The following requirements relating to dimensions apply:

- a) At least one lift car shall have minimum interior dimensions of 1.1 m x 2.1. m.
  - b) Lifting platforms shall have minimum interior dimensions of 1.1 m x 1.4 m.
- (3) In those cases where lifting platforms can be used pursuant to the first and second paragraphs, these can be substituted by a lift with the equivalent dimensions.
- (4) All measurable levels shall be included in the number of storeys.

## **II Entrances, layouts, communication routes, rooms, etc**

### **Section 12-4. Entrance**

- (1) Entrances shall be clearly visible, centrally located and easily understood in relation to access. Entrances shall be safe and easy to use. Entrances are defined as a structure's access area by the main entrance doors.
- (2) Buildings subject to accessible dwelling unit requirements and structures subject to design for universal accessibility requirements shall comply with the following:
- a) The lighting installed in entrances shall ensure the entrance and main entrance doors are visible in relation to surrounding surfaces.
  - b) There must be a visual and tactile awareness field in front of main entrance doors.
  - c) Entrances shall be free of steps.
  - d) There shall be a horizontal field with minimum dimensions of 1.5 m x 1.5 m outside main entrance doors. If the doors are side hinged, this horizontal field shall lie outside the swing radius of the doors.
  - e) Automatic door opener buttons shall be located in a position accessible to people in wheelchairs and such that collisions with doors are avoided.

### **Section 12-5. Layouts**

- (1) The layouts of structures shall be suitable for the structure's function.
- (2) The layouts of structures shall make it easy to orient oneself in them.
- (3) Structures shall be designed to ensure any risk of harm to people and domestic animals, as well as falls, is avoided.

(4) The layouts of and division of rooms in structures for the general public shall ensure as many people as possible can access it in an equitable manner and use all parts of the structure open to the general public.

(5) The layouts of and division of rooms in work buildings shall be tailored to the needs of the workplace. Work buildings shall be designed to ensure people with impaired mobility can work in the structure.

#### **Section 12-6. Communication routes**

(1) Communication routes shall be safe, appropriate and usable for the expected traffic and transport.

(2) Communication routes shall be easy to find and orient oneself in.

(3) Height differences and openings in the floor shall be secured to ensure they do not pose a danger to people and domestic animals. Height differences shall be clearly marked and have the necessary lighting.

(4) Buildings subject to accessible dwelling unit requirements shall, in addition to the first and third paragraphs, comply with the following:

a) Communication routes to accessible dwelling units shall be free of steps.

b) Corridors and porticoes shall have a minimum clearance width of 1.5 m. Adequate space that allows two wheelchairs to pass each other shall be set aside in long corridors. Short sections of less than 5.0 m, which have no doors, may have a minimum clearance width of 1.2 m.

(5) Structures subject to design for universal accessibility requirements shall, in addition to the first and third paragraphs, comply with the following:

a) Communication routes shall be free of steps. The gradient shall not be greater than 1:20.

b) Corridors and porticoes shall have a minimum clearance width of 1.5 m. Adequate space that allows two wheelchairs to pass each other shall be set aside in long corridors. Short sections of less than 5.0 m, which have no doors, may have a minimum clearance width of 1.2 m.

c) There shall be signage and marking that provides the general public with necessary information. Signage and marking shall be easy to read and understand. There shall be lighting necessary to attain a minimum visual luminance contrast of 0.8 between text and ground colour. Signs and marking shall be sited in an accessible location and be easily visible to seated people and pedestrians. The storey number shall be visually and tactilely readable on all storeys.

d) Auditory information shall be supplemented with visual information.

- e) Dazzling lighting shall be avoided in communication routes.
- f) Columns and similar components shall be sited to ensure they do not obstruct communication routes. Columns shall be visible in relation to their surroundings to avoid the risk of collisions. Columns and similar components shall have a minimum luminance contrast of 0.4 in relation to their surroundings or be marked at two heights with a minimum luminance contrast of 0.8 in relation to the background colour.
- g) Directional information shall be provided if necessary where the direction of travel changes. Repeated information shall be as identical as possible throughout the building.
- h) Large rooms, where the main walking lines cross open spaces, shall have defined walking zones or guide lines. Patterns in the floor that provide misleading directional information shall be avoided.

**Section 12-7. Requirements relating to rooms and other areas for people**

- (1) The design of rooms and other areas for people shall be tailored to their function and have adequate dimensions, ceiling heights and space for fixed and loose interior fittings.
- (2) The entrance level of an accessible dwelling units shall be designed for wheelchairs. Rooms shall have access ways free of steps and a turning space with a minimum diameter of 1.5 m. Rooms shall be designed to ensure wheelchair users can perform necessary functions in a satisfactory manner.
- (3) Rooms designed for constant occupancy in accessible dwellings shall have access ways with a clearance width of 0.9 m to doors and windows that lie outside furnished zones.
- (4) Rooms and other areas for people in structures subject to design for universal accessibility requirements shall have:
  - a) dimensions, designs, lighting and acoustic conditions that enable equitable participation
  - b) access ways free of steps and a turning area with a minimum diameter of 1.5 m. Turning spaces for wheelchairs shall be sited to ensure wheelchair users can perform necessary functions in a satisfactory manner.
  - c) receptions and noticeboards shall be centrally sited in relation to the main access point and be easy to find.
- (5) In structures subject to design for universal accessibility requirements that have a large number of rooms with the same function, it is sufficient for 1/10 of the rooms to be designed for universal accessibility pursuant to the provisions in the regulations. However, this

does not apply in those cases where the expected use indicates that more or all rooms should be designed for universal accessibility.

**Section 12-8. *Entrance halls and cloakrooms***

- (1) Entrance halls/entrances in accessible dwelling units shall have free clearance outside furnished zone and space for a turning area with a minimum diameter of 1.5 m for a wheelchair beyond the door's swing radius.
- (2) In the case of structures subject to design for universal accessibility requirements, at least 1/10 of the cloakrooms shall have a maximum operating height of 1.1 m.

**Section 12-9. *Bathrooms and toilets***

- (1) Dwelling units shall have at least one bathroom and toilet which comply with the following:
  - a) The size and layout shall ensure there is space for a turning area with a minimum diameter of 1.5 m in front of the toilet, a minimum of 0.9 m free floor space on one side of the toilet, and a minimum of 0.2 m on the other side. There shall be an access way with a clearance width of 0.9 m to the free space at the side of the toilet.
  - b) It shall be possible to install a shower zone free of steps.
  - c) Walls in the shower and toilet zone shall enable the subsequent mounting of the necessary equipment.
- (2) On floors with bathrooms and toilets in structures subject to design for universal accessibility requirements, 1/10, and a minimum of one, of these bathrooms and toilets shall be designed for universal accessibility and comply with the following:
  - a) The flooring and walls shall have a visible colour contrast. Fixed equipment shall have a visible colour contrast in relation to flooring/walls.
  - b) The size and layout shall ensure there is space for a turning area with a minimum diameter of 1.5 m in front of the toilet and a minimum of 0.9 m free floor space on both sides of the toilet. There shall be an access way with a clearance width of 0.9 m to the free space at the side of the toilet. Toilets shall have hand supports on both sides.
  - c) There shall be adequate unobstructed space under the sink.
  - d) Shower zones shall be free of steps and a minimum of 1.6 m x 1.3 m. The heights of showerheads shall be adjustable and shower zones shall have wall mounted equipment.

(3) In work buildings at least one toilet on each floor must comply with the requirements in the second paragraph.

**Section 12-10.** *Storage rooms and storage spaces*

(1) Dwelling units shall have adequate space for storing clothing, food, bicycles, prams, sports equipment, garden furniture, etc. The following shall, as a minimum, be complied with:

- a) Dwelling units shall, in addition to storage space for food and clothing, have interior storage space or storage rooms with a minimum of 3 m<sup>2</sup> of usable floor space. The interior storage room or storage space in one-room flats may be 1.5 m<sup>2</sup> of usable floor space or a minimum of 2 m in length of cupboards. Interior storage space or cupboard, which is additional to storage space for food and clothes, shall be placed inside the dwelling unit or within the building.
- b) Each dwelling unit shall have a minimum of 5 m<sup>2</sup> of usable floor space for storage space for bicycles, sports equipment, prams, etc. For one-room flat, the area required for each dwelling unit may be halved.

(2) Dwelling units subject to accessibility requirements shall have access ways to the storage space that are free of steps. The required storage space shall be accessible when using a wheelchair.

**Section 12-11.** *Balconies, terraces, etc.*

(1) Balconies, terraces, etc shall have adequate safety features and be of a quality that is adequate for their intended use.

(2) In the event of height differences greater than or equal to 0.5 m, they shall be secured with railings, cf. section 12-17.

(3) Buildings subject to accessible dwelling unit requirements and structures subject to design for universal accessibility requirements shall comply with the following:

- a) Access ways to balconies, terraces and outdoor spaces from the main level shall be free of steps and have a bevelled threshold of a maximum of 25 mm.
- b) Balconies, terraces and outdoor spaces shall have unobstructed floor space for a wheelchair that provides room for a turning circle of 1.5 m in diameter that lies outside the swing radius of the door.

**Section 12-12.** *Waste system and source separation*

(1) There shall be facilities for source separating waste. Semi-underground waste containers, pneumatic disposal units or other waste

systems shall be designed and constructed to prevent bothersome noise, odours or other nuisances.

(2) Common waste systems for residential buildings subject to accessible dwelling unit requirements and structures subject to design for universal accessibility requirements shall be easily accessible, have access ways free of steps and have a maximum disposal height of 1.1 m.

**Section 12-13.** *Saunas, refrigerated storage rooms and deep freeze storage rooms*

(1) Doors in saunas, refrigerated storage rooms and deep freeze storage rooms shall open outwards and be able to be opened from the inside without a key.

(2) Saunas in structures subject to design for universal accessibility requirements shall have an unobstructed space in front of benches of 1.5 m.

**Section 12-14.** *Receiving dock*

The locations, access ways, dimensions and design of receiving docks shall be tailored to a structure's function.

### **III Building components**

**Section 12-15.** *Doors, gates, etc*

(1) Doors, gates and similar components shall be easy to see and use, and be constructed in a way that prevents harm to people, domestic animals or equipment.

(2) Their width and height shall be designed for the expected traffic and transport, including escaping in case of fire and shall, as a minimum, comply with the following:

- a) Entrance doors and doors in communication routes shall have a minimum clearance width of 0.9 m. The clearance width in structures designed for many people shall be a minimum of 1.2 m.
- b) Internal doors in dwelling units shall have a minimum clearance width of 0.8 m.
- c) Internal doors in structures subject to design for universal accessibility requirements shall have a minimum clearance width of 0.9 m.
- d) Doors shall have a minimum clearance height of 2 m.

(3) Structures subject to design for universal accessibility requirements shall, in addition to the first and second paragraphs, comply with the following:

- a) Doors shall be visible relative to surrounding walls. The minimum luminance contrast shall be 0.4. The same applies to lifts and lifting platforms.
  - b) Doors designed to be opened manually shall be able to be opened with a maximum opening force of 20 N.
  - c) Automatic door opener buttons shall be installed outside the swing radius of the door. Buttons shall be clearly visible and located at an operating height of between 0.8 m and 1.1 m above the floor. They shall be located a minimum of 0.5 m from inside corners.
  - d) The maximum threshold height shall be 25 mm. Thresholds shall be bevelled.
  - e) If the doors are side hinged, there shall be minimum side clearance of 0.5 m on the door's locking side and 0.3 m on the door's hinged side. Side clearance of 0.3 m on both sides is adequate for sliding doors.
- (4) The first to third paragraphs, with the exception of the third paragraph, point (a), apply to buildings subject to accessible dwelling unit requirements.

#### **Section 12-16. Stairs**

- (1) Stairs shall be easy and safe to navigate. The width and height of stairs shall be designed for the expected traffic and transport, including escaping in case of fire. The following shall, as a minimum, be complied with:
- a) Flights of stairs shall have safe edges and handrails on both sides.
  - b) Flights of stairs shall have a regular incline and the risers shall be the same height for the entire length of the flight of stairs.
  - c) Treads in straight flights of stairs shall be the same depth. Treads in the walking line shall be a minimum of 0.25 m.
  - d) Landings shall be large enough to halt falls. Height differences of more than 3.3 m require a landing.
  - e) Stairwells shall be well lit so that the steps are visible. Treads shall have a non-slip surface.
  - f) Flights of stairs shall have a minimum clearance width of 0.9 m and minimum clearance height of 2.1 m. Internal flights of stairs in a dwelling unit shall have a minimum clearance width of 0.8 m and a minimum clearance height of 2.0 m.
  - g) Treads in flights of stairs that are not straight shall have an effective width equivalent to straight flights of stairs. Along the inside walking line the treads of curved flights of stairs shall be a minimum of 0.15 m.



- (2) In addition to the first paragraph, the following apply to main flights of stairs that serve more than one dwelling unit:
- a) The minimum clearance width shall be 1.1 m and the minimum clearance height shall be 2.1 m.
  - b) There shall be handrails at two levels on both sides, with upper edges 0.9 m and 0.7 m, respectively, above the front edge of the tread. Handrails shall continue 0.3 metres beyond the top and bottom steps and have rounded ends. Handrails shall follow flights of stairs continuously, including around landings.
  - c) Treads shall be marked such that a luminance contrast of 0.8 is attained in relation to the colour of the steps. The marking on treads shall span the entire width of the step and be a maximum of 40 mm deep.
  - d) The depth of landings from the front edge of a step or from the bannister to the opposite wall shall be a minimum of 1.5 m.
- (3) In addition to the requirements in the first and second paragraphs, the following apply to structures subject to design for universal accessibility requirements:
- a) Main flights of stairs shall have a minimum clearance width of 1.2 m.
  - b) Handrails shall have a virtually round cross-section with a luminance contrast of 0.8 in relation to the background colour. At the beginning of each storey, the storey indicator shall be marked. Handrails shall continue 0.3 metres beyond the top and bottom steps and have rounded ends.
  - c) There shall be a warning field in front of the top step and an awareness field in front of and up to the bottom step. These shall span the entire width of the stair. The fields shall be visually and tactilely marked with a luminance contrast of 0.8 in relation to the background colour.

### **Section 12-17. Railings**

- (1) The design and height of railings shall prevent falls and collisions. Railings shall be designed to prevent climbing.
- (2) Bannisters in flights of stairs and railings on ramps shall have a minimum height of 0.9 m. Railings in or on balconies, terraces, access ways, and similar installations shall have a minimum height of 1.0 m. Railings shall have a minimum height of 1.2 m in those places where the height difference is greater than 10.0 m above the terrain.
- (3) Handrails and railings shall be at a height of 0.9 m above floors/steps.

- (4) Openings in railings shall be a maximum of 0.10 m up to a height of 0.75 m. The horizontal distance between a building component and railings affixed to its outer surface shall be a maximum of 0.05 m.
- (5) Handrails in buildings subject to accessible dwelling unit requirements and structures subject to design for universal accessibility requirements shall be shaped to accommodate a good grip.

#### **Section 12-18. Ramps**

- (1) The width of ramps shall be designed for the expected traffic and transport. The minimum permitted width is 0.9 m.
- (2) Ramps shall have an even, non-slip surface and a maximum gradient of 1:20. A maximum gradient of 1:12 is permitted for sections of up to 3.0 m. For every 0.6 m height difference there must be a horizontal resting platform with a minimum length of 1.5 m.
- (3) Ramps shall have handrails on both sides at two heights: 0.7 m and 0.9 m above the surface. Handrails shall visually contrast with walls and railings.
- (4) The start of a ramp shall be marked across the entire span of the ramp with a minimum luminance contrast of 0.8 m between the marking and background. The same applies to passenger conveyors and moving pavements.

#### **Section 12-19. Ladders**

Ladders used for access in the operation of a structure shall be designed to prevent falls and be secured against use by children and unauthorised people.

#### **Section 12-20. Windows and other glazed fields**

- (1) Windows and other glazed fields that if broken could cause harm to people or domestic animals shall not be used unless they are protected against the risk of collision or falls. Such protection may take the form of a parapet or shielding with a minimum height of 0.8 m up to the glazed field or the use of safety glass.
- (2) Glazed fields and glass doors in communication routes shall use safety glass if they are not shielded in another manner.
- (3) Glazed fields in communication routes where there may be a risk of collision, shall be contrast-marked with glass markings visible from both sides and at two heights, with their centres at 0.9 and 1.5 metres above the finished floor. Patterns in glass markings on doors shall be different from those in glass markings in glazed fields.

- (4) Windows in structures where children may be present shall have a child-safety catch from the second storey upwards.
- (5) Windows and glazed fields shall be able to be cleaned and maintained without risk.

**Section 12-21.** *Signage, control and operating panels, handles, fittings, etc*

- (1) Signage, control and operating panels, handles, fittings, etc shall be easy to understand and operate.
- (2) Information shall be easy to read and understand. There shall be a visible contrast between text and background colours. Important information shall be accessible via text and sound or Braille.
- (3) Buildings subject to accessible dwelling unit requirements and structures subject to design for universal accessibility requirements shall comply with the following:
  - a) Operating panels shall be located at an operating height of between 0.8 m and 1.1 m above the completed floor. Power sockets shall be installed a minimum of 0.5 m from a corner.
  - b) Handles shall be placed at an operating height of between 0.8 m and 1.1 m, be designed with a functional grip and require an operating force that makes them easy to use.
  - c) Sink and shower fixtures shall have a single grip handle. Shower fixtures shall have a thermostat. This does not apply to buildings subject to accessible dwelling unit requirements.
  - d) In those cases where pursuant to the regulations the windows shall be opened windows, at least one of these must be able to be operated using one hand. The handle shall require little operating force and be located where it can be reached from a sitting position. This does not apply to structures for the general public.

## Chapter 13 The environment and health -

### I Air quality

#### **Section 13-1.** *General requirements for ventilation*

(1) Buildings shall have ventilation systems suitable for the rooms' pollution and humidity loads that ensure satisfactory air quality. The air quality in a building shall be satisfactory with regard to odours and pollution. Indoor air shall not contain harmful concentrations of pollutants that pose health hazards or cause irritation. Account shall be taken of the room type, interior fittings, equipment and pollution loads from materials, processes, people and domestic animals.

(2) The following shall, as a minimum, be complied with:

- a) Buildings and buildings' ventilation systems shall be sited and designed to ensure air quality. If the quality of the outdoor air is unsatisfactory with regard to preventing health risks or the risk of fouling ventilation equipment, it shall be purified before being piped into the building.
- b) Account shall be taken of design pollution loads from people.
- c) The air shall flow from rooms with higher air quality requirements to rooms with lower air quality requirements.
- d) Air inlets and outlets shall be designed and located to ensure that pollution from outlets does not re-enter inlets and the air entering the inlet is as unpolluted as possible.
- e) Polluting activities and processes shall insofar as possible be encapsulated, equipped with hood extraction or take place in premises with suitable, separate ventilation.
- f) Circulating air shall not be used if this results in the transfer of pollutants between rooms.
- g) Products and materials shall have characteristics that emit low levels of or no pollution into indoor air.

#### **Section 13-2.** *Ventilation in dwelling units*

(1) Dwelling units shall have ventilation that ensures an average supply of fresh air at a minimum rate of 1.2 m<sup>3</sup> per hour per m<sup>2</sup> floor space when the rooms or the dwelling unit are in use and a minimum of 0.7 m<sup>3</sup> per hour per m<sup>2</sup> floor space when the rooms or dwelling unit are not in use. If ventilation is controlled according to required level and reduced in parts of the time cycle, it shall be increased in the remaining periods to ensure adequate air quality while the rooms or the dwelling unit is in use.

(2) Bedrooms shall be supplied with a minimum of 26 m<sup>3</sup> of fresh air per hour per bed space when the room or dwelling unit is in use.

(3) Rooms not intended for constant occupancy shall have ventilation that ensures  $0.7 \text{ m}^3$  of fresh air per hour per  $\text{m}^2$  floor space.

(4) Kitchens, sanitation rooms and wet rooms shall have satisfactorily effective vents.

**Section 13-3.** *Ventilation in structures for the general public and work buildings*

(1) An average supply of fresh air at a minimum rate of  $26 \text{ m}^3$  per hour per person shall be supplied in structures for the general public and work buildings due to the pollution caused by people performing light activities. If heavier activities are being performed, the supply of fresh air shall be increased such that the air quality is satisfactory.

(2) The average supply of fresh air shall be at a minimum rate of  $2.5 \text{ m}^3$  per hour per  $\text{m}^2$  floor space when the building or rooms are in use and at a minimum of  $0.7 \text{ m}^3$  per hour per  $\text{m}^2$  floor space when the building or rooms are not in use. The requirement shall accommodate the need to extract odours and emissions given off from building materials and fixtures

## II Indoor thermal climate

**Section 13-4.** *Indoor thermal climate*

(1) The indoor thermal climate in rooms designed for constant occupancy shall be regulated in a manner that promotes health and satisfactory comfort when the rooms are used as intended.

(2) In rooms for constant occupancy at least one external window or door shall be designed for opening. For rooms in public buildings and work buildings where opening windows from considering the use, are considered undesirable, fixed frame windows may be used.

## III Radiation environment

**Section 13-5.** *Radon*

(1) Buildings shall be designed and constructed with radon-prevention measures to limit the inflow of radon from the ground. Radon concentrations in indoor air shall not exceed  $200 \text{ Bq/m}^3$ .

(2) The following shall, as a minimum, be complied with:

- a) Buildings designed for constant occupancy shall have a radon barrier towards the ground.
- b) Buildings designed for constant occupancy shall be designed with suitable measures in the building land that can be activated when the concentration of radon in the indoor air exceeds  $100 \text{ Bq/m}^3$ .

(3) The second paragraph does not apply if it can be documented that this is unnecessary to satisfy the requirements in the first paragraph.

#### **IV Sound and vibrations**

##### **Section 13-6.** *General requirements relating to sound and vibrations*

(1) Structures and user areas that form part of structures with adjoining outdoor recreation and play areas shall be planned, designed and constructed to ensure people satisfactory acoustic and vibration conditions based on their intended use. Satisfactory acoustic conditions shall be ensured for work, rest, recreation, sleep, concentration, communication, good speech comprehension, hearing warning signals, and the ability to orient oneself.

(2) In those places where particularly high sound levels are expected, special soundproofing measures shall be emphasised in the design and construction.

(3) The acoustic conditions in structures for the general public and work buildings with adjoining outdoor recreation areas, as well as common outdoor recreational spaces for larger residential areas, and recreational areas for residential buildings requiring a lift shall comply with design for universal accessibility requirements.

##### **Section 13-7.** *Soundproofing*

(1) Partitions between user areas shall have soundproofing characteristics that ensure satisfactory acoustic conditions with regard to airborne sound in user areas or in surrounding spaces.

(2) Structures shall be designed and constructed so that sound levels from impact noise and structure-borne noise from one user area are muffled so that other user areas are ensured satisfactory acoustic conditions.

##### **Section 13-8.** *Room acoustics*

(1) Rooms shall be designed and constructed to ensure satisfactory room acoustics.

(2) Rooms in structures for the general public and work buildings shall have a room geometry and sound absorption characteristics that provide room acoustics that ensure satisfactory acoustic conditions and good comprehension of speech.

**Section 13-9.** *Noise from technical installations and outdoor sources of sound*

- (1) Technical installations shall be sited, designed and executed to ensure satisfactory acoustic conditions in structures and user areas, rooms designed for constant occupancy in other buildings and outdoor recreation and play areas.
- (2) Structures shall, with regard to noise from outdoor sources, be sited, designed and constructed to ensure satisfactory acoustic conditions in the structure and in outdoor recreation and play areas. This also applies to sources of structure-borne noise.

**Section 13-10.** *Audio and speech transmission equipment*

Structures for the general public and rooms in work buildings shall have audio and speech transmission equipment unless it can be documented that this is not necessary to achieve good speech comprehension. Entrances to rooms with amplified audio and speech transmission shall be clearly marked.

**Section 13-11.** *Vibration conditions*

Structures shall, with regard to vibrations, be sited, designed and constructed to ensure satisfactory acoustic and vibration conditions in the structure and in outdoor recreation and play areas.

## **V Light and views**

**Section 13-12.** *Light*

- (1) Rooms shall have adequate access to light without an annoying heat load.
- (2) Rooms designed for constant occupation shall have a window that provides adequate access to daylight, unless the activity indicates otherwise.

**Section 13-13.** *Views*

Rooms designed for constant occupation shall have a window that provides an adequate view, unless the activity indicates otherwise.

## **VI Wet rooms and rooms with water installations**

**Section 13-14.** *General requirements relating to moisture*

Groundwater, surface water, precipitation, service water and humidity shall not penetrate and cause damp damage, mould and fungi growth, or other hygienic problems.

**Section 13-15. *Moisture from the ground***

The necessary measures shall be put in place around building components below ground level and under floor structures on the ground to divert seeping water and prevent moisture penetrating structures.

**Section 13-16. *Surface water***

The terrain around structures shall have an adequate slope away from the structure, unless other surface water drainage measures have been taken.

**Section 13-17. *Precipitation***

- (1) Façade cladding, windows, doors, and installations that pass through walls shall be designed to allow precipitation that penetrates them to be drained away and moisture to dry out without damage occurring.
- (2) Roofs shall be designed and constructed with sufficient pitch and drainage so that rain and melt water drain away, and melting snow does not result in harmful ice formation.
- (3) In ventilated roof structures where condensation can occur on the underside of the roofing material or the roofing material is not sufficiently impermeable to prevent the penetration of water, the underlying structure shall be protected by a watertight sheathing

**Section 13-18. *Moisture from indoor air***

Building components and structures shall be designed and constructed to ensure they do not suffer moisture damage from condensed water vapour from indoor air.

**Section 13-19. *Moisture in buildings***

Materials and structures shall be so dry at the time they are built in/sealed that problems from mould and fungi growth, decaying organic materials or increased degassing do not arise.

**Section 13-20. *Wet rooms and rooms with water installations***

- (1) Wet rooms shall be designed and constructed to ensure damage does not occur to structures and materials because of water seepage, leaking water and condensation.
- (2) The following shall, as a minimum, be complied with:
  - a) Wet rooms shall have a drain and flooring sufficiently sloped towards the drain on those parts of the floor that it must be assumed will be exposed to water when the room is used. Rooms



with drains shall be designed to ensure any leaking water is led to the drain.

- b) Underlying structures in wet rooms that may be adversely impacted by moisture shall be protected by a suitable watertight layer. Ducts, etc shall not compromise the tightness. Materials shall be chosen that minimise the risk of mould and fungi growth.
- c) Water installations in rooms without a drain and watertight floor shall have an overflow system or equivalent protection against damp damage. Floors and walls that may be subjected to seeping water, leaking water or condensation shall be made from damp proof materials.
- d) Rooms without drains shall be designed to ensure any leaks are made visible.
- e) Walls with built-in cisterns or similar installations shall be protected against moisture penetration from leaks from the installation. Any leaks shall be made visible and in rooms other than wet rooms, a leak shall result in the water automatically shutting off.

## **VII Cleaning before a building is occupied**

### **Section 13-21.** *Cleaning before a building is occupied*

To limit the amount of pollution added to the indoor air and ensure good indoor air quality, surfaces in rooms, ducts, etc shall be cleaned and free of visible dust and grease before a building is occupied.

## Chapter 14 Energy

### I Introductory provisions concerning energy

#### Section 14-1. *General requirements relating to energy*

- (1) Structures shall be designed and constructed to promote low energy needs and environmentally friendly heating solutions. Energy requirements apply to a building's heated usable floor space.
- (2) Calculations of buildings' energy needs and heat loss figures shall be carried out in accordance with *Norwegian Standard NS 3031 Energy and Power Demand for Heating of Buildings - Calculation Rules*. U-values shall be calculated as mean values for the various parts of the building.
- (3) In this chapter, small houses include detached houses, semi-detached houses, rows of terraced houses and linked houses.
- (4) In the case of projects where compliance with the requirements in this chapter is incompatible with the preservation of cultural monuments and buildings of antiquarian value, the requirements apply insofar as they are appropriate.

### II Energy efficiency

#### Section 14-2. *Energy efficiency*

- (1) Buildings shall satisfy the level stipulated in section 14-3 or have a total net energy lower than the energy budget stipulated in section 14-4. The minimum requirements in section 14-5 shall be complied with regardless of whether or not section 14-3 or section 14-4 is used. Only section 14-5, second paragraph, and section 14-6 apply to residential buildings and leisure homes with log outer walls.
- (2) Sections 14-3 to 14-8, with the exception of section 14-5, first and second paragraphs, do not apply to buildings with less than 30 m<sup>2</sup> of heated usable floor space.
- (3) This chapter does not apply to buildings which, based on their intended use, shall maintain a low interior temperature if they are designed to ensure that their energy needs are kept at a reasonable level.

#### Section 14-3. *Energy measures*

- (1) Buildings shall have the following energy characteristics:
  - a) Transmission heat loss:
    - 1st Proportion of window and door areas  $\leq$  20% of heated usable floor space

2nd U-value outer wall  $\leq 0.18 \text{ W}/(\text{m}^2\text{K})$

3rd U-value roof  $\leq 0.13 \text{ W}/(\text{m}^2\text{K})$

4th U-value floor  $\leq 0.15 \text{ W}/(\text{m}^2\text{K})$

5th U-value glass/windows/doors including frames  $\leq 1.2 \text{ W}/(\text{m}^2\text{K})$ .

6th Normalised thermal bridge value, where  $\text{m}^2$  is stated in heated usable floor space:

- small houses  $\leq 0.03 \text{ W}/(\text{m}^2\text{K})$
- other buildings  $\leq 0.06 \text{ W}/(\text{m}^2\text{K})$

b) Infiltration and ventilation heat loss:

1st Leakage figures at 50 Pa pressure differential:

- small houses  $\leq 2.5$  air changes per hour
- other buildings  $\leq 1.5$  air changes per hour

2nd Annual mean temperature efficiency for heat recuperator in ventilation systems:

- residential buildings, as well as floor spaces in which heat recovery poses a risk of spreading pollution/contagions  $\geq 70\%$
- other buildings and floor spaces  $\geq 80\%$

c) Other measures:

1st Specific fan power (SFP) in ventilation systems:

- residential buildings  $\leq 2.5 \text{ kW}/(\text{m}^3/\text{s})$
- other buildings  $\leq 2.0 \text{ W}/(\text{m}^3/\text{s})$

2nd Ability to lower indoor temperatures at night and weekends

3rd Measures that eliminate the building's need for local cooling.

(2) The energy measures in points (a) and (b) can be departed from in residential buildings providing the building's heat loss figure does not increase.

(3) The energy measures in point (a) can be departed from in other buildings providing the building's heat loss figure does not increase.

#### **Section 14-4. Energy budgets**

(1) The total net energy needs of buildings shall not exceed the budgets stipulated in the following table:

*Table: Energy budgets*

<b>Building category</b>	<b>Total net energy needs (kWh/m<sup>2</sup> of heated usable floor space per year)</b>
--------------------------	---

Small houses and leisure homes with more than 150 m <sup>2</sup> of heated usable floor space.	120 + 1600/ m <sup>2</sup> of heated usable floor space
Block of flats	115
Nursery school	140
Office building	150
School building	120
University/university college	160
Hospital	300 (335)
Nursing home	215 (250)
Hotel	220
Sports building	170
Business building	210
Cultural building	165
Light industry/workshops	175 (190)

(2) The requirements stated in parentheses apply to floor spaces in which heat recovery and ventilation air pose a risk of spreading pollutants/contagions.

(3) Multifunctional buildings shall be divided up into zones based on the building's category and the respective energy budgets complied with within in each zone.

#### **Section 14-5. Minimum requirements**

(1) The following minimum requirements shall be complied with:

*Table: Minimum requirements*

<b>U-value outer wall [W/(m<sup>2</sup>K)]</b>	<b>U-value roof [W/(m<sup>2</sup>K)]</b>	<b>U-value floors on ground and facing open air [W/(m<sup>2</sup>K)]</b>	<b>U-value windows and doors including frames [W/(m<sup>2</sup>K)]</b>	<b>Leakage figures at 50 Pa pressure differential (air change per hour):</b>
≤ 0.22	≤ 0.18	≤ 0.18	≤ 1.6	≤ 3.0

(2) Pipes, equipment and ducting connected to a building’s heating and distribution system shall be insulated to prevent unnecessary heat loss.

(3) The following minimum requirements also apply, except to small houses:

- a) The U-value for glass/windows/doors including frames multiplied by the proportion of window and door areas of a building's heated usable floor shall be less than 0.24.
- b) The total sun factor for glass/windows ( $g_t$ ) shall be less than 0.15 on façades that catch the sun, unless it can be documented that the building does not need cooling.

**Section 14-6. Buildings with log outer walls**

The following apply to residential buildings or leisure homes with log outer walls:

*Table: Buildings with log outer walls*

Building category	Dimensions of outer wall:	U-value roof [W/(m <sup>2</sup> K)]	U-value floors on ground and facing open air [W/(m <sup>2</sup> K)]	U-value windows and doors including frames [W/(m <sup>2</sup> K)]
Residential buildings and leisure homes with one dwelling unit and heated usable floor space of greater than 150 m <sup>2</sup>	≥ 8" logs	≤ 0.13	≤ 0.15	≤ 1.4
Leisure homes with one dwelling unit and heated usable floor space of less than 150 m <sup>2</sup>	≥ 6" logs	≤ 0.18	≤ 0.18	≤ 1.6

**III Energy supply**

**Section 14-7. Energy supply**

- (1) Installation of a boiler for fossil oil to accommodate the basic energy load for space- and water heating is not permitted.
- (2) A building exceeding usable area of 500m<sup>2</sup> shall be designed and constructed so that a minimum of 60 % of the net energy need for space- and water heating may be obtained by energy supply other than direct acting electricity or fossil fuels at the point of end user.

- (3) A building less than 500m<sup>2</sup> shall be designed and constructed so that a minimum of 40 % of the net energy need for space- and water heating may be obtained by energy supply other than direct acting electricity or fossil fuels at the point of end user.
- (4) The requirements to energy supply according to clause 2 and 3 shall not apply where local conditions do not make it practically possible to comply with the requirements. For housing the requirements do not apply if the net energy demand for space- and water heating is calculated to be less than 15000 kWh/year or if the requirements results in increased cost over the life cycle of the building
- (5) Dwellings that according to clause 4 are exempt from the requirements to energy supply according to clause 2 and 3 shall have a chimney and an enclosed heating unit suitable for bio fuels. This requirement shall not apply to dwellings less than 50m<sup>2</sup> usable area or dwellings that are designed and constructed as passive houses.

**Section 14-8. District heating**

Wherever provisions in plans stipulate an obligation to connect to a district heating system pursuant to section 27-5 of the Planning and Building Act, buildings shall be equipped with a heating system allowing for the use of district heating for heating rooms, ventilation heating and hot water.

## Chapter 15 Installations and systems

### I Heating and cooling installations

#### **Section 15-1.** *General requirements relating to heating and cooling installations*

(1) Heating and cooling installations shall be designed and constructed to ensure they perform as intended and comply with the safety, energy use and indoor environment requirements. An installation shall not increase the risk of fire and explosions. Heat loads in building components shall not pose a risk of fire or weaken the building component's characteristics. Installations shall be protected against leaks.

(2) The following shall, as a minimum, be complied with:

- a) Heating and cooling installations shall be able to be regulated and shall be designed for energy efficient operation.
- b) Installations shall have safe and facilitated access for easy and efficient cleaning and maintenance, including safe sweeping.
- c) Good combustion shall be achieved in normal operating conditions. Installations shall have the necessary supply of air for combustion. A flue shall be connected unless it can be documented that such connection is not necessary. Installations shall have an acceptable flue gas temperature.
- d) Heating installations shall be installed on a surface which will withstand the expected load.
- e) Fireplaces shall not be installed in rooms where combustible gases or dust particles can occur that could result in dust explosions, unless the fireplace is designed for this. Heating installations based on combustion shall be installed in a furnace room, unless they are designed for installation in another room.
- f) In those cases where heating installations are documented for use without a flue, the room shall have satisfactory ventilation.

#### **Section 15-2.** *Central heating installations*

(1) Central heating installations shall be leak proof at the maximum occurring pressure and shall have the necessary safeguards against excessively high pressures and temperatures. They shall have satisfactory sectioning and shut-off capabilities, and shall be executed in a manner that prevents injuries to people due to excessively high surface temperature.

(2) The following shall, as a minimum, be complied with:

- a) Connection to the water supply system shall be effected in a manner that prevents backflow from the central heating installation.

- b) Installations for waterborne heat connected to district heating plants or heat pumps shall enable the temperature of the water to be adjusted so the water can be adjusted for the technical equipment and energy efficient heat production.
- c) Supply air for hot air units located in furnace rooms shall be taken through an airtight duct from the outside.

**Section 15-3. Flues and chimneys**

- (1) Flues and chimneys shall be designed and constructed to ensure heating installations can function satisfactorily.
- (2) The following shall, as a minimum, be complied with:
  - a) Flue gases shall be conducted out from structures in a manner that does not pose a risk of igniting the structure or neighbouring structures.
  - b) Flue and chimneys shall be sufficiently sealed to provide a good draw and not emit flue gases into its own or another dwelling unit.
  - c) Flues and chimneys shall have an acceptable surface temperature and the outer side shall, to the extent possible, be available for inspection.
  - d) Flues and chimneys shall be able to move freely in relation to adjoining building components.
  - e) Chimney flues shall have a constant cross-section from bottom to top.
  - f) Moulded or brick lined chimneys shall be constructed on a load bearing structure of incombustible materials.
  - g) Flues and chimneys shall provide satisfactory opportunities for sweeping and clearing out soot.

**Section 15-4. Heat pump and cooling installations**

- (1) Heat pumps and cooling installations shall be designed and constructed to prevent harm occurring to people, the environment, installations or structures. The installation must be leak proof and have the necessary safeguards against abnormal operating conditions.
- (2) The following shall, as a minimum, be complied with:
  - a) Installations shall be able to be regulated automatically and shall be designed for energy efficient operation.
  - b) Installations shall have a sectioning system with a stop valve for gas and fluid.
  - c) Machinery, refrigerated storage rooms and deep freeze storage rooms with large quantities of refrigerants, as well as other



rooms that may be exposed to leaks of refrigerant, shall have gas indicators. The room shall be fitted with an emergency ventilation system.

## **II Indoor water and drainage installations**

### **Section 15-5. *General requirements relating to indoor water and drainage installations***

- (1) Indoor water and drainage installations shall be designed and constructed to ensure good hygiene and health are safeguarded, that water quality does not degrade, and such that waste water is drained at the same rate as the water is supplied.
- (2) Installations shall perform as intended, withstand inner and outer loads that could occur, and be adequately leak proof. Mountings shall tolerate required loads.
- (3) Installations shall be designed for a high level of operational reliability and for efficient operation and maintenance.
- (4) Materials shall be sufficiently durable against thermal, mechanical and chemical impacts.
- (5) Installations shall be protected against frost.

### **Section 15-6. *Indoor water installations***

- (1) Construction products in contact with drinking water shall not release substances that may degrade the quality of drinking water or pose a risk to health. Installations shall be designed and constructed to ensure water quality is not degraded.
- (2) The following shall, as a minimum, be complied with:
  - a) Equipment and pipes shall perform as intended at normal operating pressure.
  - b) The easy maintenance of water installations shall be facilitated. Water installations shall be easy to replace. Leaks shall be easily discoverable and not result in damage to other installations and building components. There shall be a satisfactory means of shutting the installation off. Stopcocks shall be readily accessible and marked.
  - c) Tap points for water for consumption shall not have a water temperature that could cause scalding injuries.
  - d) Installations shall be secured against the backflow or infiltration of impure liquids, substances or gases. This also applies to the back suction and infiltration of water from another water source.

### **Section 15-7. Indoor drainage installations**

- (1) Installations shall be designed and constructed to ensure wastewater is drained at the same rate as the water is supplied. Outdoor tap points can utilise natural drainage.
- (2) The following shall, as a minimum, be complied with:
  - a) All equipment connected to waste water installations shall have traps or an equivalent function.
  - b) Installations shall have the necessary cleaning points for cleaning. Waste water pipes shall be self-cleaning.
  - c) Waste water installations shall have a minimum of one air line leading out to the open air without a trap, unless it can be documented that the drain can function satisfactorily when another solution is used.
  - d) The water level in the lowermost trap shall be at the height above the inside top of the common main at the branching point necessary to prevent backflow.

## **III Outdoor water supply and sewerage installations**

### **Section 15-8. General requirements relating to outside water supply and sewerage installations**

- (1) Water supply and sewerage installations shall be designed and constructed to ensure health, the environment and safety are safeguarded. Water mains shall be designed and constructed to ensure the expected lifetime of the system is achieved.
- (2) The following shall, as a minimum, be complied with:
  - a) Installations shall perform as intended, withstand inner and outer loads that could occur, and be adequately leak proof.
  - b) Installations shall be designed for a high level of operational reliability and for efficient operation and maintenance.
  - c) Materials shall be sufficiently durable against thermal, mechanical and chemical impacts.
  - d) Installations shall be protected against frost.
  - e) Service pipes for water supply and sewerage installations that are no longer in use shall be disconnected.

### **Section 15-9. Water supply installations with mains network**

- (1) Installations shall be designed to ensure sufficient volumes and sufficient pressure to meet water needs, including for fire fighting. Construction products in contact with drinking water shall not release

substances that may degrade the quality of drinking water or pose a risk to health.

- (2) The following shall, as a minimum, be complied with:
  - a) Water mains shall be sufficiently leak proof at the maximum occurring operating pressure.
  - b) Water mains shall be protected against the backflow or infiltration of impure liquids, solids or gases. This applies also to the back suction and infiltration of water from another water source and installation.

#### **Section 15-10.** *Sewerage installations with water mains*

- (1) Sewerage installations shall be designed and constructed to ensure that wastewater is drained at the same rate as the water is supplied and in a manner that safeguards good hygiene and health. Surface water and drainage water shall be drained in a manner that ensures overflowing or other nuisances do not occur at design rain loads.
- (2) The following shall, as a minimum, be complied with:
  - a) Installations shall be sufficiently leak proof during normal use. Sewage pipes shall be self-cleaning and have the necessary points for inspection and cleaning.
  - b) Structures shall be protected against overflows due to high water levels or overpressure in drainpipes. Bothersome odours shall not arise.
  - c) Surface water, including drainage water, shall insofar as possible be infiltrated or managed locally in some other manner to ensure water balance in the area and avoid overburdening sewerage installations.

## **IV Lifting equipment**

#### **Section 15-11.** *General requirements relating to lifting equipment*

- (1) These provisions apply to lifting equipment as described in section 3-7.
- (2) Lifting equipment shall be designed and constructed to ensure it poses no risk to users and personnel carrying out inspections, repairs and safety checks or causes damage to building components.
- (3) The acceleration and braking of the lifting equipment shall not cause injuries to people.
- (4) Load carriers shall have space and load-bearing capacity corresponding to the maximum number of people and maximum load assumed. The highest permissible payload and number of people shall be indicated in easily readable writing and Braille. Lifting equipment shall

have safeguards against overloads and issue an alarm in the event of overloading.

(5) Lifting equipment's moving parts and safety installations shall not be able to be activated or touched in a manner other than those intended.

(6) Lifting equipment shall be fitted with alarms linked to a 24 hour monitoring system. Alarms shall emit visual and acoustic signals. Messages to the lifting equipment concerning received alarm signals shall be communicated in the form of voice functions and light signals. There shall be information regarding the alarm function in easily readable writing and Braille. Voice connections with the alarm centre shall have a volume sufficient to enable the hearing impaired to comprehend speech.

(7) People shall be able to be evacuated from a load carrier in a safe manner.

(8) Installations, rooms and shafts for lifting equipment shall not be exposed to temperatures and environments that could create operating problems or make maintenance difficult.

#### **Section 15-12. Rooms and shafts for lifts**

(1) Rooms and shafts for lifts shall only be used for lift installations. Their ventilation systems shall not be used to ventilate smoke from rooms that do not form part of the lift installation. Doors and hatches in shafts shall have satisfactorily designed safety mechanisms.

(2) Rooms and shafts shall be easily accessible for operation, maintenance and safety checks. Access ways to rooms for lifts shall be clearly marked. Areas belonging to a lift installation shall be kept locked.

(3) The shaft's walls, top and well shall be designed for the load the installation will result in. Surfaces in rooms and shafts shall be light, easy to keep clean and free of dust.

(4) The power supply for lighting and power sockets shall be independent of the power supply to lift machinery.

(5) There shall be a clear safety space above and below the lift's upper and lower positions.

(6) In existing buildings where it is not possible to achieve a satisfactory safety space, the installation shall have a mechanical blocking mechanism that prevents people being trapped or crushed. The installation of new installations in existing buildings shall not reduce existing safety spaces.

(7) Openings in shafts shall be secured to prevent people being crushed by the lift installation.

(8) Machinery and counterweight rooms shall allow for the replacement of the lift's equipment. Room heights shall be satisfactory, doors to rooms shall open outwards, and hatches in floors shall be secure.

(9) Shafts shall have satisfactory ventilation. Machinery rooms and machinery cabinets for hydraulic lifts shall be ventilated to the open air through separate ducts and shall be constructed to ensure any oil leak is discovered and collected.

**Section 15-13.** *Lift cars and load carriers*

- (1) The dimensions of lift cars and load carriers shall be designed for their intended use.
- (2) Lift cars and load carriers shall have minimum interior dimensions of 1.1 m x 1.4 m.
- (3) Lift cars designed for stretchers shall have minimum interior dimensions of 1.1 m x 2.1. m.
- (4) There shall be a mirror on the wall opposite the door in lift cars and load carriers in which a wheelchair cannot turn around.
- (5) The door opening's minimum clearance width shall be 0.9 m. Doors shall have automatic opening systems and prevent the risk of people getting trapped or crushed.
- (6) Handrails shall be mounted on at least one wall and be 0.9 m above the floor level.
- (7) Control panels and call buttons in lift cars and lifting platforms shall be located between 0.9 m and 1.1 m above the floor level and a minimum of 0.4 m from corners. Control panels and call buttons on each storey shall be located at a minimum of 0,5 m from the corner. The control panels shall have a minimum luminance contrast of 0.4 in relation to the wall behind and tactile writing with a minimum luminance contrast of 0.8 in relation to the background colour. Informative texts shall have easily readable writing and braille. The level of lighting in lift cars and load carriers shall be almost equal to that in outside floor space.
- (8) The direction of travel and storey number shall be indicated with visual and acoustic signals.
- (9) Lift cars and load carriers shall have lighting and emergency lighting, as well as satisfactory ventilation, including during interruptions to operation.

**Section 15-14.** *Lifting platforms and stair lifts*

The safety-related design of lifting platforms and stair lifts shall comply with Directive 2006/42/EC (Machinery Directive).

**Section 15-15.** *Escalators and moving pavements*

- (1) Escalators and moving pavements with related spaces for stepping on and off shall not pose a hazard when used as intended. There shall be

clear signs indicating the dangers associated with the improper use of the facilities.

- (2) There shall be a warning field in front of the top step and an awareness field in front of the bottom step. These shall span the entire width of the stair. The fields shall be visually and tactilely marked with a luminance contrast of 0.8 in relation to the background colour.
- (3) There shall be stop systems for emergency situations at both ends of escalators and moving pavements.
- (4) If escalators and moving pavements are located in open spaces such that the fall height from the facility's balustrade can exceed 3.0 m, suitable safeguards against falls shall be installed.
- (5) The transition zone from the fixed floor and escalator/moving pavement shall be non-slip. The ascent gradient and speed shall be tailored to the height difference between the stepping on and off points.
- (6) There shall be a balustrade with handrails on both sides of escalators or moving pavements.
- (7) Machines and components shall be easily accessible for operation, maintenance and inspection personnel. Machinery shall be covered and well protected against unauthorised people.

## PART FOUR - MISCELLANEOUS PROVISIONS

### Chapter 16 Lift safety inspections

#### Section 16-1. *Lifting equipment. Administrative provisions*

(1) In addition to the requirements pursuant to section 29-9 of the Planning and Building Act, the following apply to lifts, escalators, moving pavements lifting platforms and stair lifts:

- a) The municipality shall issue an operating permit before lifting equipment goes into service.
- b) Lifting equipment shall not be used after an accident, remodelling or being moved until a safety inspection body has performed a safety inspection and the municipality has issued an operating permit.
- c) When faults in an installation may pose an immediate danger to personal safety, the lifting equipment shall be taken out of service and the matter reported to the municipality and owner.
- d) Owners shall immediately report accidents to the municipality and safety inspection body. The safety inspection body shall report accidents and incidents to the national installation register.
- e) Completed repair work shall be logged in a logbook kept for each piece of lifting equipment. The logbook shall be available during safety inspections.
- f) Owners shall ensure safety inspection is carried out at least every second year when the lifting equipment is in operation. Safety inspections may also be carried out as spot checks of lifting equipment in operation.
- g) In the event of a change of owner and when an installation is permanently taken out of service, the owner shall report this to the municipality and national installation register.

(2) The following apply to lifting platforms and stair lifts inside a dwelling unit:

- a) Owners may install lifting platforms or stair lifts inside dwelling units themselves, cf. section 4-1, first paragraph, point (b) (2), of the Regulations relating to building applications. 2.
- b) Owners of lifting equipment are responsible for ensuring lifting equipment in use is in safe working order and that it is maintained and inspected.
- c) Owners shall immediately report accidents/incidents to the municipality and national installation register.

(3) When a fault in the installation may pose a danger to personal safety, the lifting equipment shall be taken out of service.

**Section 16-2.** *Requirements relating to safety inspectors who carry out periodic safety inspections*

- (1) Periodic safety inspections may be carried out by:
  - a) safety inspectors employed by municipal lift inspection schemes
  - b) national lift inspection schemes with authorisation from the Ministry
  - c) national lift inspection schemes that carry out safety inspections on a temporary basis
  - d) The National Office of Building Technology and Administration
- (2) Safety inspectors shall be approved by the National Office of Building Technology and Administration.
- (3) Safety inspectors shall as a minimum have training and practical experience pursuant to the following table:

*Table: Qualification requirements for safety inspectors*

<b>Alternative</b>	<b>Training</b>	<b>Practical experience</b>
1	Diploma from a three-year college of engineering, machinist or electrician course or equivalent	A minimum of five years' relevant experience in installing, maintaining and repairing lift installations.
2	Diploma from a two-year technical vocational school, relevant course or equivalent.	A minimum of five years' relevant experience in installing, maintaining and repairing lift installations.
3	Lift installer craft certificate	A minimum of five years' all-round and relevant professional experience after passing the examination.

- (4) Safety inspectors are approved for periods of two years. The following are considered upon renewals:
  - a) whether or not the applicant has worked as a safety inspector
  - b) whether or not the applicant can document up-to-date knowledge of lifting equipment and relevant regulations

**Section 16-3.** *Conditions for obtaining recognition as a lift safety inspector for people with professional qualifications from another EEA member state*

- (1) The purpose of this provision is to implement the rights and obligations pursuant to Directive 2005/36/EC on the recognition of professional qualifications. The provision concerns approval to carry out periodic lift safety inspections for applicants who have acquired their professional qualifications in another EEA member state. This provision



also pertains to the right to the temporary and incidental provision of services in Norway.

(2) The following definitions apply in this provision:

- a) regulated profession: A professional activity, access to which or the pursuit of which is subject, directly or indirectly, by virtue of legislative, regulatory or administrative provisions to the possession of specific professional qualifications.
- b) professional qualifications: Qualifications attested by evidence of formal qualifications, an attestation of competence referred to in article 11, point (a) (i) of the directive and/or professional experience.
- c) evidence of formal qualifications: Diplomas, certificates and other documentation issued by an authority in a member state designated pursuant to legislative, regulatory or administrative provisions of that member state. The evidence of qualifications shall document successful completion of professional training that is mainly acquired in the EEA. Evidence of formal qualifications issued by a third country shall also be regarded as evidence of formal qualifications if the holder has three years' professional experience in the profession concerned in the territory of the member state which recognised that evidence.
- d) professional experience: The actual and lawful pursuit of the profession concerned in a member state.
- e) probationary period: The pursuit of a regulated profession in the host member state under the supervision of a qualified member of that profession.
- f) aptitude test: A test limited to the professional knowledge of the applicant, conducted by the competent authorities of the host member state with the aim of assessing the ability of the applicant to pursue a regulated profession in that member state.

(3) Nationals of an EEA member state have the right to recognition as a periodic lift safety inspector if this derives from the rules of Directive 2005/36/EC, even if they do not have qualifications equivalent to the requirements in Section 16-2 no. Recognition as a safety inspector shall be granted if the activity concerned has previously been pursued:

- a) for six consecutive years on a self-employed basis or as a manager of an undertaking, or
- b) for three consecutive years on a self-employed basis or as a manager of an undertaking, where the beneficiary proves that he has received previous training of at least three years for the activity in question, as attested by a certificate recognised by the member state or judged by a competent professional body to be fully valid, or

- c) for four consecutive years on a self-employed basis or as manager of an undertaking, where the beneficiary can prove that he has received, for the activity in question, previous training of at least at two years' duration, as attested by a certificate recognised by the member state or judged by a competent professional body to be fully valid, or
  - d) for three consecutive years on a self-employed basis, if the beneficiary can prove that he has pursued the activity in question on an employed basis for at least five years, or
  - e) for five consecutive years in an executive position, of which three years involved technical duties and responsibility for at least one department in the company, of the beneficiary can prove that he has received, for the activity in question, previous training of at least three years' duration, as attested by a certificate recognised by the member state or judged by a competent professional body to be fully valid.
- (4) In cases (a) through (d) above, the activity must not have ended more than 10 years before the date on which the complete application was submitted.
- (5) Applicants who do not satisfy the requirements in section 16-2, third paragraph, can apply for alternative approval as a periodic lift safety inspector. The applicant shall submit evidence of qualifications that are as a minimum equivalent to the level of qualifications immediately below the qualification requirements pursuant to section 16-2, third paragraph. In addition, equalisation measures such as those described in the seventh paragraph can be required in such cases. The following five levels of qualifications apply when comparing levels of training:
- A- evidence of formal qualifications
  - B- certificate of completion of upper secondary education
  - C- examination certificate from education of at least one year after upper secondary education
  - D- examination certificate from education of at least three years and at most four years at university or other institution of higher education
  - E- examination certificate from education of at least four years at university or other institution of higher education
- (6) The qualification requirements pursuant to section 16-2, third paragraph, alternative 1 of these regulations corresponds to level D, alternative 2 corresponds to level C and alternative 3 corresponds to level B. Applicants who have worked as a lift safety inspector in an EEA member state where this profession is not regulated are entitled to recognition if the applicant has pursued the profession on a full-time basis for at least two years, or for an equivalent period on a part-time basis,

during the past ten years. Applicants must submit evidence of professional qualifications that document that the applicant can work as a periodic lift safety inspector.

(7) The applicant may, for approval pursuant to the fifth and seventh paragraphs, be required to complete a probationary period of at most three years or pass an aptitude test, if:

- a) the duration of the training of which the applicant provides evidence under the terms of section 16-2, third paragraph, of these regulations is at least one year shorter than that required by the host member state, or
- b) the training the applicant has received covers substantially different matters to those covered by the evidence of formal qualifications required in the host member state, or
- c) the regulated profession in the host member state includes one or more regulated professional activities which do not exist in the equivalent profession in the applicant's home state, cf. Directive 2005/36/EC, article 4 no. 2, and that difference consists of specific training which is required in the host member state and which covers substantially different matters to those covered by the applicant's attestation of competence or evidence of formal qualifications.

(8) If the host member state makes use of the option for equalisation measures, it must offer the applicant the choice between a probationary period and an aptitude test.

(9) The approving authority shall require an applicant to submit the following in order to approve professional qualifications:

- a) proof the person concerned's nationality
- b) copies of certificates of qualifications or of the evidence of formal qualifications that entitle the person concerned to pursue the regulated profession, as well as certification of the person concerned's professional experience.

(10) The National Office of Building Technology and Administration shall process applications as quickly as possible. Reception of the application shall be confirmed within one month after the reception of the application and the applicant informed of any missing documents. A decision shall be taken no later than within four months after all the necessary documentation has been presented. Even if a person satisfies the qualification requirements stipulated for approval as a periodic lift safety inspector, the National Office of Building Technology and Administration can reject an application for approval on the basis inadequate documentation. Rejections of applications can be appealed by parties or others with a legal appeal interest.

(11) The National Office of Building Technology and Administration shall insofar as possible notify the competent authority in another EEA member state where the applicant pursues the activity covered by the regulations, if the service provider is subject to administrative sanctions or criminal sanctions in this country, or other serious circumstances arise that may have consequences for the pursuit of the activity. If the competent authority in another EEA member state has requested information, that information shall be provided as quickly as possible and no later than within two months after the request was received.

(12) The competent authorities in host member states and home states shall collaborate closely and shall provide mutual assistance in order to facilitate the application of Directive 2005/36/EC. They shall ensure the confidentiality of information they exchange.

#### **Section 16-4.** *Temporary practise of safety inspections*

(1) Periodic lift safety inspections can be carried out on a temporary and incidental basis by people legally established in another EEA member state with a view to carrying out such activities there, cf. article 5. The service provision's temporary nature shall be assessed from case to case based on the service's duration, frequency, regularity and continuity. Service providers shall inform the National Office of Building Technology and Administration the first time they provide the service, or if a material change occurs to the situation substantiated by the documents, by submitting a written provisional report accompanied by the following documents:

- a) proof of the service provider's nationality
- b) attestation certifying that the person concerned is legally established in another EEA member state for the purpose of pursuing the activities concerned, and that the person concerned is not at the time of submission prohibited from practising, even temporarily
- c) professional qualifications
- d) if the profession is not regulated in the state in which the service provider has established his activities, any means of proof that the service provider has pursued the activity concerned for at least two years during the previous ten years.

(2) The National Office of Building Technology and Administration shall be notified each year the service provider wishes to pursue the profession. The National Office of Building Technology and Administration may verify the service provider's professional qualifications before the service is provided for the first time to prevent serious harm to the health or safety of the service recipient due to deficient professional qualifications. This verification shall not exceed what is necessary for the purpose. The National Office of Building Technology and Administration shall inform the

service provider of whether or not his professional qualifications will be verified within one month after receiving the necessary documentation or of the results of such verification. In those cases where difficulties exist that will result in delays, the service provider shall be informed of the reasons for them and the timetable for a decision. The decision does not need to be taken within two months of the receipt of complete documentation. A service provider who has not received a decision regarding verification of professional qualifications by this deadline, is entitled to pursue the profession.

#### **Section 16-5. *Language requirements***

can require a person granted approval as a lift safety inspector pursuant to section 16-3, or who will practise temporary service provision pursuant to section 16-4, to document that he or she has adequate knowledge of Norwegian to practise the profession.

#### **Section 16-6. *Installation register***

A register shall be kept of installed lifting equipment and accidents involving lifting equipment. Owners of lifting equipment shall report installations to the municipality and the body that maintains the register. The register keeping body shall be nominated by the National Office of Building Technology and Administration.

#### **Section 16-7. Administrative co-operation**

(1) The National Office of Building Technology and Administration shall as far as feasible, inform the competent authority of another EEA member state where the applicant performs tasks as defined in the regulations in so far as the professional is given administrative reactions. penal sanctions or any other serious circumstances that may have consequences for performing his profession. If a competent authority in another EEA member state has requested information, such information shall be given as soon as possible and not later than two months following the receipt of the request.

(2) The relevant authorities in the host country and the country of origin shall ensure close co-operation and the exchange of all information necessary in order to facilitate the deployment of directive 2005/36/EFT. The exchange of information shall be treated confidentially.

#### **Section 16-8. Price adjustment**

The Ministry may by way of regulation set a maximum price for safety inspection of lifts provided this is deemed necessary to avoid disproportionate regional price differences and provided this may be considered by the Ministry to have consequences for personal safety.

## **Chapter 17 Commencement and transitional provisions**

### **Section 17-1. *Commencement***

These regulations enter into force on 1 July 2010.

### **Section 17-2. *Transitional provisions***

(1) With the exception of the provisions in chapter 4, as well as sections 9-4 and 9-6 to 9-9, the developer may prior to 1 July 2011 choose whether or not the entire project shall comply with the regulations or provisions in the Regulations concerning requirements for construction works and products for construction works of 22 January 1997 No. 33.

(2) The municipality can permit the Regulations concerning requirements for construction works and products for construction works of 22 January 1997 No. 33 to also be used for applications that arrive after 1 July 2011. This only applies to projects in which the planning started prior to 1 July 2010 and in which the application of the regulations would result in extensive and expensive reworking.