

Living quarters area

This NORSOK standard is developed with broad petroleum industry participation by interested parties in the Norwegian petroleum industry and is owned by the Norwegian petroleum industry represented by The Norwegian Oil Industry Association (OLF) and The Federation of Norwegian Industry. Please note that whilst every effort has been made to ensure the accuracy of this NORSOK standard, neither OLF nor The Federation of Norwegian Industry or any of their members will assume liability for any use thereof. Standards Norway is responsible for the administration and publication of this NORSOK standard.

Standards Norway
Strandveien 18, P.O. Box 242
N-1326 Lysaker
NORWAY

Copyrights reserved

Telephone: + 47 67 83 86 00
Fax: + 47 67 83 86 01
Email: petroleum@standard.no
Website: www.standard.no/petroleum



Documents
Document Sharing Hub

Foreword	3
Introduction	3
1 Scope	4
2 Normative and informative references	4
2.1 Normative references	4
2.2 Informative references	4
3 Terms, definitions and abbreviations	4
3.1 Terms and definitions	4
3.2 Abbreviations	4
4 General requirements	5
5 Living quarters (LQ) area	5
6 Living quarters (LQ) area room programme	5
7 Arrangement of main facilities in the living quarters (LQ)	6
7.1 General requirements	6
7.2 Cabin area	7
7.3 Recreation area	8
7.4 Dining room	10
7.5 Living quarters (LQ) container lay-down deck	10
7.6 Kitchen (galley) with provisions room	11
7.7 Coffee bars	15
7.8 Smoking rooms	15
7.9 Laundry	15
7.10 Linen store	16
7.11 Cleaner's store	16
7.12 Living quarters (LQ) main store	16
7.13 Administration area	17
7.14 Offshore collaboration room	17
7.15 Central control room (CCR)/Telecommunication centre/Maritime control room	18
7.16 Central equipment room (CER)/Telecom equipment room (TER)	19
7.17 Medical centre and emergency hospital	20
7.18 Helicopter "sky lobby"	20
7.19 Helicopter traffic control centre (HTCC)	20
7.20 Changing rooms	21
7.21 Technical rooms	21
7.22 Traffic areas	22
7.23 Central vacuum cleaning system	22
7.24 Artistic decoration	23
8 Arrangement of main facilities adjacent to the living quarters (LQ)	23
8.1 Helicopter deck	23
8.2 Helicopter hangar	23
8.3 Mustering area, lifeboat stations and safety equipment	23
8.4 Workshops, laboratories, etc.	24
8.5 External areas	24
9 Miscellaneous requirements	25
9.1 Wet rooms	25
9.2 Technical installations in walls, ceilings and decks	25
9.3 Ceiling heights	25
9.4 Doors	26
9.5 External maintenance access	26
9.6 Lighting and electrical fittings	26
9.7 Room acoustics	27
9.8 Waste handling stations	27
9.9 Drinking water coolers	27
9.10 Plumbing requirements	27
10 Room finishes schedule	28

11	Room areas	28
12	Clean, dry building philosophy ("Rent, tørt bygg")	28
13	Company specified items	28
Annex A (Normative) Data sheets		30

Foreword

The NORSOK standards are developed by the Norwegian petroleum industry to ensure adequate safety, value adding and cost effectiveness for petroleum industry developments and operations. Furthermore, NORSOK standards are, as far as possible, intended to replace oil company specifications and serve as references in the authorities' regulations.

The NORSOK standards are normally based on recognised international standards, adding the provisions deemed necessary to fill the broad needs of the Norwegian petroleum industry. Where relevant, NORSOK standards will be used to provide the Norwegian industry input to the international standardisation process. Subject to development and publication of international standards, the relevant NORSOK standard will be withdrawn.

The NORSOK standards are developed according to the consensus principle generally applicable for most standards work and according to established procedures defined in NORSOK A-001.

The NORSOK standards are prepared and published with support by The Norwegian Oil Industry Association (OLF), The Federation of Norwegian Industry, Norwegian Shipowners' Association and The Petroleum Safety Authority Norway.

NORSOK standards are administered and published by Standards Norway.

Annex A is normative.

Introduction

Main changes from second edition to third edition are in summary:

- general reformatting;
- inclusion of operational experience feedback from recent projects;
- revised requirements for waste handling on LQ container lay-down deck;
- revised to incorporate changes related to the new regulations for protection against injury/disease caused by tobacco smoke;
- information related to helideck deleted from this NORSOK standard and included in new NORSOK C-004.;
- inclusion of new section related to waste handling stations;
- inclusion of new section related to plumbing requirements;
- inclusion of new section related to clean, dry building philosophy ("Rent, tørt bygg");
- inclusion of new section related to "Company specified items";
- Annex A - addition of new data sheet CDS-103 - Check list for model cabin and bathroom.

1 Scope

This NORSOK standard defines the requirements for the architectural design and engineering of the LQ area on offshore installations in the petroleum industry.

This NORSOK standard is primarily applicable to fixed installations. The standard may also be used for mobile installations for which, however, other requirements may be applicable.

2 Normative and informative references

The following standards include provisions and guidelines, which through reference in this text, constitute provisions and guidelines of this NORSOK standard. Latest issue of the references shall be used unless otherwise agreed. Other recognized standards may be used provided it can be shown that they meet or exceed the requirements of the referenced standards.

2.1 Normative references

NORSOK C-002,	<i>Architectural components and equipment</i>
NORSOK C-004,	<i>Helicopter deck on offshore installations</i>
NORSOK H-CR-002,	<i>Piping and plumbing</i>
NORSOK S-001,	<i>Technical Safety</i>
NORSOK S-002,	<i>Working environment</i>
NORSOK T-001,	<i>Telecom systems</i>
NS-INSTA 800,	<i>Cleaning quality – Measuring system for assessment of cleaning quality</i>
RTB Handbook from RIF,	<i>Rent, tørt bygg (clean dry building)</i>

2.2 Informative references

ISO 11064,	<i>Ergonomic Design of Control Centres</i>
------------	--

3 Terms, definitions and abbreviations

For the purposes of this NORSOK standard, the following terms, definitions and abbreviations apply.

3.1 Terms and definitions

3.1.1

can

verbal form used for statements of possibility and capability, whether material, physical or casual

3.1.2

may

verbal form used to indicate a course of action permissible within the limits of this NORSOK standard

3.1.3

shall

verbal form used to indicate requirements strictly to be followed in order to conform to this NORSOK standard and from which no deviation is permitted, unless accepted by all involved parties

3.1.4

should

verbal form used to indicate that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others, or that a certain course of action is preferred but not necessarily required

3.2 Abbreviations

CCR	central control room
CER	central equipment room
CVC	central vacuum cleaning system (wet type)
ECC	emergency control centre
HTCC	helicopter traffic control center

HVAC	heating, ventilation and air conditioning
LSD	large screen display
LQ	living quarters
MOB	man over-board
PA	public address
TER	telecom equipment room
TV	television
RTB	rent, tørt bygg (clean dry building)
RIF	Association of Consulting Engineers (Rådgivende Ingeniører's Forening)

4 General requirements

This NORSOK standard shall be read in conjunction with NORSOK C-002, where more detailed information is specified with respect to materials, finishes, furniture, equipment, etc.

Other discipline requirements related to the LQ are covered in the respective NORSOK standards and shall be integrated with the architectural design development to achieve a co-ordinated and optimal solution for the LQ area.

5 Living quarters (LQ) area

Any of the following main elements may be included in the LQ area and shall be covered by this NORSOK standard:

- the LQ (accommodation);
- the helicopter deck;
- the helicopter hangar;
- mustering area with life boats and safety equipment;
- CCR;
- TER;
- CER;
- workshop area (inclusive specialised workshops, offices, workers' coffee bar, laboratories, etc.);
- MOB-boat with associated equipment.

6 Living quarters (LQ) area room programme

The LQ area room programme is a project specific document, which systematically outlines the required treatment of rooms/areas and other related data.

The LQ area room programme shall be developed for the LQ area early in the concept phase, based on relevant field- and operational information. It shall be continuously updated throughout all project phases. The following information shall be available prior to the development of the LQ room programme:

- type of installation;
- personnel capacity;
- manning philosophy for all main operational phases;
- catering philosophy;
- CCR philosophy (if applicable);
- environmental data on location;
- design life;
- helicopter type(s) and operational philosophy;
- main evacuation philosophy;
- lifeboat capacity and number;
- workshop area requirements (if applicable);
- waste handling philosophy;
- housekeeping (cleaning) philosophy.

The room programme schedule in Annex A shall be used, where all relevant information shall be included.

7 Arrangement of main facilities in the living quarters (LQ)

7.1 General requirements

7.1.1 General

The LQ shall offer personnel protection and shelter, and shall be located in the safest place on the installation. It shall be protected from hazardous areas by external walls and roofs, which are fire and blast resistant in accordance with results of risk and emergency preparedness analyses.

There shall be at least two exits to escape routes leading in different directions from each level in the LQ with at least one internal stairway linking all levels.

All rooms exceeding 20 m² shall have a minimum of two escape ways mutually located at opposite sides of the room. Doors to this room category shall open outwards from the room. Technical rooms may have hatches.

Exposed elevations facing production and drilling areas shall have a minimum number of doors, windows and other penetrations.

Common toilets, washrooms, change and shower rooms shall be of adequate number, functionally arranged, and conveniently located in relation to workplaces, recreation and catering areas. Common toilets shall have direct access from corridors/circulation areas. Divisions to common toilets shall be continuous from floor to ceiling.

Steam piping, exhaust pipes or similar shall not be routed through personnel accommodation or in the corridors leading to such rooms, except where these are enclosed in appropriate fully welded casings. Steam piping, water pipes, tanks or similar shall be insulated against heat or cold in accordance with recognised standards.

7.1.2 Manning

The LQ shall be dimensioned, designed and equipped, to accommodate and cater for the maximum number of personnel required at any time during the field's various operational phases. This includes start-up, drilling, production, as well as periods of planned production shutdown for modifications and maintenance, etc. In this respect, the operator shall perform necessary analyses in the conceptual phase, in order to verify the required manning level.

The LQ shall be furnished and equipped for persons of both sexes, with separate rooms for women and men as needed.

7.1.3 Noise considerations

The internal areas shall provide possibilities for work, recreation, relaxation, sleep and privacy. Areas requiring quietness shall be particularly protected from noise and vibrations.

Special attention shall be given to the location of the helideck relative to the LQ accommodation areas, with regard to potential noise from helicopters during take off, landing and hovering.

Noisy and vibrating equipment and machinery shall not be located in close proximity to the LQ accommodation areas.

The sound reduction properties of the whole LQ construction, including window and door assemblies, shall be evaluated during the engineering phase.

The objective shall be to ensure and verify that the maximum sound level inside the accommodation areas is in compliance with the specific requirements as stated in NORSOK S-002.

Certification verifying the sound reduction rating of window and door assemblies shall be submitted to the operator/company for acceptance prior to placement of order. It shall be verified that the window and door assemblies tested (including frames) are identical to the actual assemblies planned to be installed.

7.1.4 Windows

The LQ shall provide daylight, through windows, in accommodation and working areas wherever possible. As a minimum, windows shall be provided in dining rooms, main recreation room(s), work places that will be in use for more than 6 h per working day, and the majority of cabins. Windows in cabins shall have a minimum glazed area of 0,6 m², and windows in offices and other work places shall have a minimum glazed area of 0,9 m² where practicable. In recreation areas, larger windows (floor to ceiling) shall be provided, if possible.

7.1.5 Selection of materials

Selection of materials and detailing solutions shall ensure effective cleaning and maintenance.

7.2 Cabin area

7.2.1 Cabins

Minimum area for single cabin, inclusive bathroom unit: 6 m²
Single cabins shall be equipped for one person only.

Minimum area for double cabin, inclusive bathroom unit: 12 m²
Double cabins shall be equipped for a maximum of two persons.

The above areas shall be measured from the centre line of the dividing partition between the cabins, and the internal face of the other perimeter partitions/linings. The areas shall include the bathroom and service void. Where two cabins share a service void, half of the service void area shall be included in each of the cabin areas. Where two cabins share a common entry lobby, half of the entry lobby area shall be included in each of the cabin areas. Where two cabins share a common bathroom, half of the bathroom area shall be included in each of the cabins.

The cabins should be grouped together on dedicated floor levels or in separate corridors (private domain) away from traffic areas and noisy activities (communal domain). Each cabin floor/area should be organised in such a manner that it can be locked up whenever required.

Each cabin type shall be standardised. Prefabricated cabins are strongly recommended in order to satisfy the strict noise reduction requirements. The cabin layout and the furniture arrangement shall be of an ergonomic design, simplifying fabrication, use, cleaning, maintenance and ease of bed linen change. Dust-collecting edges and surfaces shall be avoided.

Each cabin shall be arranged to provide a basis for uninterrupted sleep, rest and quietness. It shall be furnished to include storage for survival suit(s), clothing and personal belongings. It shall provide opportunity for reading, writing and relaxation. Beds in double cabins shall be fitted with bed curtains to enable privacy and protection from light and direct view.

All bathrooms shall be standardised and prefabricated. The size of the bathrooms and showers shall comply with recognised standards. The shower area shall be minimum 0,65 m², and clearly separated from the rest of the bathroom area. Sufficient space shall be provided in front of the toilet and washbasin. The minimum width through the centre of the shower area shall be 700 mm. Further requirements for prefabricated bathroom units are given in NORSOK C-002.

Every bed shall be placed on the floor to ease use and change of bed linen. The mattress dimensions shall be minimum 800 mm x 2100 mm. The top of the mattress shall be 550 mm to 600 mm above the floor. In double cabins, one of the beds may be of a sofa-bed type, provided it is to be used during shorter, peak manning intervals only. In this case special attention shall be given to comfort, mechanical function and ease of bed linen change.

All cabins shall have unobstructed access to a corridor leading to a minimum of two independent emergency exits.

All technical installations, switches, sockets etc. shall be neatly designed and installed as functionally appropriate. Technical penetrations in adjoining cabin walls shall be kept to a minimum to avoid weakening the noise insulation properties of the walls.

Each cabin should be equipped with sockets for telephone, computer and hotel type TV with integrated radio, entertainment equipment, alarm clock, etc. A solid, flexible support bracket shall be provided for the TV.

A full size model cabin shall be provided for one of the cabin types, complete with furniture, equipment, bathroom, service shaft and full width section of the adjacent corridor. The model shall be suitable for function testing with respect to ventilation, light intensity, noise transmission, room acoustic, etc. The model shall be constructed at an early project stage with the use of real materials, so that design, detailing, elements, materials, colours etc. can be studied and verified. The project schedule and scope shall be suitably flexible to allow for adjustments to the model, ensuring it is always up to date and can be used as a reference for the cabins to be installed onboard.

Refer to Annex A, data sheet CDS-103.

7.2.2 Lockers

A minimum of three lockable leave lockers, for storage of private articles during the onshore period, shall be provided for each bed on the installation unless specified otherwise by operator/company. Any leave lockers located in corridors shall be securely fixed and recessed in corridor walls. The front shall be mounted flush with the surrounding walls.

Personal work lockers (for working clothes) shall be provided in accordance with operator/company requirements.

Further requirements for lockers are specified in NORSOK C-002.

7.3 Recreation area

7.3.1 General

The total recreation area shall not be less than 1,5 m² per bed. A sufficient number of recreation rooms shall be provided to satisfy the employees' needs for recreation, rest, social and physical activities.

Recreation areas should, where appropriate, be grouped together to reduce isolation in periods with low manning. Glazed partitions and doors should be used, where relevant, to improve or promote a good psychosocial environment.

They shall be provided with elements and finishes of high aesthetic and durable quality that are easy to clean. The atmosphere shall be attractive, promoting social relationships and human comfort.

Loose furniture shall be light in weight and easy to handle, to ease cleaning. Further requirements to furniture are given in NORSOK C-002.

7.3.2 Main lounge/coffee bar

The main lounge/coffee bar should be located adjacent to the dining room with direct access between the two rooms, facilitating multipurpose use. Direct access to the lounge/bar shall also be provided from the main traffic area.

One area/room shall provide comfortable space for at least 50 % of the personnel for which the LQ is designed. This can be achieved by combining sub-divided areas into one larger area.

Where subdivisions of the area are required, glazed partitions and doors shall be used.

7.3.3 TV-rooms, activity room, library, kiosk, etc.

A separate TV-room/area shall be provided near the main lounge.

Activity room(s), library, quiet area, kiosk, music room, chapel, study etc., may also be provided in accordance with operator/company requirements.

The recommended location for the kiosk is adjacent to the dispatch office.

7.3.4 Multipurpose room/area

The multipurpose room/area may be used for a wide range of activities, all in accordance with operator/company requirements, e.g.:

- lectures and briefings;
- films and videos;
- entertainment;
- games;
- aerobics;
- emergency hospital.

If ball sports are required, a separate room shall be provided.

The multipurpose room/area may be combined with other rooms/areas.

A comfortable, safe and flexible/removable seating arrangement should be provided. A stage/podium may be provided with stage curtains, a white screen and adjustable spotlights. The room shall be provided with outlets for TV and audiovisual equipment. The main light fittings in the room shall have dimming facilities.

Selection and layout of flexible lighting solutions shall be carefully co-ordinated in order to satisfy the functional and aesthetical requirements for the various activities carried out in this room/area.

Special attention shall be paid to airborne and impact borne sound insulation in order to prevent noise transmission to adjoining rooms.

Suitable storage rooms shall be provided.

7.3.5 Exercise room

An exercise room with various up-to-date training equipment shall be provided, with additional space for group exercises, e.g. aerobics, spinning, etc. The room shall be provided with outlets for TV and audiovisual equipment. This room may be combined with other rooms/areas, if appropriate. All major equipment shall be securely fixed. When sufficient area and volume is available, a larger dedicated exercise room or sports hall may be provided, allowing for a variety of sports.

Special precaution shall be taken to prevent noise transmission to adjoining rooms. Shock-absorbing floor shall be installed. Wall and ceiling systems in exercise areas shall have suitable fixing and detailing to withstand physical and mechanical impact, and prevent injuries caused by loosening of panels or sharp edges. Relevant parts of walls, ceilings and any windows shall be protected with suitable nets or mesh if the room is to be used for ball games.

If tread mills (running machines) are used, they should be located in a separate room/area, or in a separate alcove or recess, which is suitably insulated to satisfy the sound requirements.

Changing rooms with shower(s), wash hand-basin(s) and toilet(s) shall be provided for both sexes, and be located adjacent to the exercise room. Saunas and solarium shall be provided in accordance with operator/company requirements. Saunas shall be detailed to avoid uncontrolled release of moisture into adjacent wall and ceiling voids. Saunas shall have slopes in the floor to dissipate water efficiently. Adjacent showers shall have individual drains.

7.3.6 Sports hall

When sufficient area and volume is available, a larger dedicated Sports Hall may be provided, allowing for a variety of ball sports.

The sports hall for ball play shall have a free height of minimum 4 500 mm.

Ceiling mounted equipment and ceiling systems shall be protected by a heavy duty netting above the ball playing area. Partitions and doors shall be suitably reinforced.

The floor system shall be suitable for ball play, i.e. shock absorbing.

Perforated surfaces and sound absorbing elements shall be provided as required.

Quiet areas shall not be located above, below or adjacent to the sports hall.

7.3.7 Telephones

Telephones for private and undisturbed conversation to shore shall be provided. These should be located adjacent to the main recreation room/dining room, the "sky lobby" and cabins as required.

Designated space shall be provided for telephone directories, unless electronic directories are used.

7.3.8 Miscellaneous rooms

Toilets and various storage rooms shall be provided as required adjacent to the recreation area.

7.4 Dining room

The dining room shall be on the same level as the kitchen (galley) and serving area. Interior elements and finishes shall be of high aesthetic and durable quality, which are easy to clean. The dining room shall be of adequate capacity and size to allow the personnel to sit comfortably while having their meals. The area provided shall be based on a minimum of 1,2 m² per person for approximately 50 % of the personnel for which the LQ is dimensioned.

Tables (and occasionally chairs) may need to be fixed to decks on floating installations, or if specified by the operator/company.

7.5 Living quarters (LQ) container lay-down deck

7.5.1 General

The LQ container lay-down deck shall be located on the same level as the provision stores and the general goods handling area. It shall be suitably sized to enable safe handling, storage and unloading of the total number of full and empty containers required to serve the LQ at any one time, without the need for unnecessary intermediate lifting operations.

It shall also provide enough space to allow a fully loaded electrical pallet truck to turn safely in front of the container un-loading ramp.

Depths of less than 7 000 mm shall be subject to formal approval by the project. Sizing and arrangement of the LQ container lay-down deck, with associated justification, shall be formally approved by the operator/company.

The food supplies will be shipped in standard containers in accordance with operator/company requirements.

Sizing of the transport route from the lay-down deck to the provision stores shall be based on the use of Euro-pallets. Threshold design in the transport routes shall allow for easy passage of trolleys.

For hygienic reasons, separate access shall be provided from the respective lay-down deck to the provision stores and to the general goods handling area/main store, i.e. goods to the main store shall not be transported through the provision store and vice versa.

A parking bay with power outlet for hand operated truck(s) and trolleys shall be provided. The wheels of trolleys or trucks shall be of a type, design and hardness that will not cause damage to the kitchen area floor finishes.

The lay-down deck shall be provided with electrical sockets (suitable for freezer/cold storage containers), heat traced freshwater outlet(s) with hose(s), compressed air outlets to project specification, and a sufficient number of drains if the deck is not self-draining.

The lay-down perimeter shall have mechanical protection/ bumpers to withstand container impact, detailed to minimise transmittance of noise and vibrations into the LQ. Impact absorbing materials shall be installed at the lay down area.

Arrangement of light fittings shall be carefully planned to provide optimal working conditions at night.

All technical installations shall be protected.

The lay-down deck shall be clearly marked with the maximum safe load bearing capacity.

Weather protection for staff (e.g. roofs, walls, windshield etc.) shall be provided in traffic areas, as appropriate.

Heat tracing of the lay-down deck/floor area shall be provided as required.

7.5.2 Waste handling on the LQ container lay-down deck

Waste compactor(s)/container(s) shall have a dedicated location in conjunction with the lay-down deck.

Separate disposal of the following waste shall be provided unless specified otherwise following the results of a dedicated waste handling analysis for the installation:

- hard plastic;
- soft plastic;
- paper/cardboard;
- metal + glass;
- textiles;
- aluminium cans;
- waste food;
- light bulbs/tubes;
- miscellaneous refuse;
- necessary hazardous waste fractions.

The waste compactor/container area should be in a weather-protected enclosure (roof and walls), providing safe and easy trolley access with no deck obstructions. The access route from the internal kitchen area to the external compactor area shall be weather protected. The layout, arrangement and type of equipment shall be in accordance with operator/company requirements.

The size of the waste compactor(s)/container(s) shall be sufficient to handle the volume of waste envisaged for the installation, and they shall be arranged for safe and ergonomic use.

Floating installations shall be provided with a "peck and hale" type fixing/strapping arrangement for containers and other relevant equipment.

7.6 Kitchen (galley) with provisions room

7.6.1 General

The kitchen area shall be of sufficient size, and have the appropriate equipment, for the preparation of hot and cold food. Sizing and capacities shall be in accordance with the catering philosophy. Execution and arrangement shall comply with applicable governing body regulations relating to hygiene and the preparation of food.

The kitchen layout shall provide optimal working conditions within each functional area and in the kitchen as a whole. Production flow, material handling, traffic patterns, hygiene, working environment and safety shall be given special attention in order to achieve operational efficiency.

Internal flow patterns shall prevent cross-contamination of food from the raw to finished stage, and shall prevent contamination from handling of waste. The relationships between various areas shall promote co-operation and efficiency. The kitchen area shall be as open as possible. It shall be planned in detail, showing the position of all major furniture, equipment and fittings.

All furniture and equipment shall be functionally and ergonomically suited, safe to operate and easy to clean and maintain.

Kitchen equipment shall in general be wall or console mounted. The consoles are specially designed floor mounted supports for major kitchen equipment, with concealed space for ducts, cables and pipes, which simplifies cleaning under and around the equipment. Plinths or special foundation may be considered if the use of consoles is found to be impractical or impossible.

All water taps, switches, etc. shall be functionally located and within easy reach.

Workbenches, frying pans and oven range shall be easily height adjustable. Benches and shelves shall have storm edges, if required. Hand washbasins shall be installed adjacent to main work-stations.

No equipment shall be stored higher than 1 500 mm above the floor.

All walls, partitions and ceilings shall be in stainless steel, or other suitable non-corrosive material in accordance with project requirements. Sound absorption and noise control shall be given special attention, particularly in the scullery and the scrub.

Arrangement of all light fittings shall be carefully planned for each workstation to provide acceptable conditions with respect to type, position, light intensity, reduction of glare and reflections from shiny surfaces. The light fittings shall be splash proof and suitable for use in the kitchen.

Further requirements for lighting are specified in 9.6.

The kitchen floor finish shall be of a non-slip type and easy to clean. The floor surface will be hosed down regularly with large amounts of hot water. Hot water of 55 °C shall be available for this purpose. For hygienic reasons, some surfaces will be hosed down with hot water of 80 °C. A local steamer unit on a trolley may be used for this purpose. It shall have a dedicated parking space.

Floors shall have suitable falls to enable efficient drainage. Large floor drains with cleanable soil traps shall be located close to certain types of equipment, e.g. tiltable frying pans and boiling kettles. For floating installations, the tiltable equipment shall have especially oversized floor drains below, to minimise the risk for scalding. All floor drains shall have non-slip stainless steel grating, which shall be detailed to allow for easy and frequent removal for cleaning. Large gratings shall be sub-divided into small sections for easy handling. Details of the floor drain and grating arrangement shall be presented to the operator/company for approval.

All walls shall be splash proof to a height of at least 1 500 mm above the floor, and have coved skirting detailing. Noise absorbing surfaces shall be incorporated in walls and ceilings as required to reduce reverberation times, with detailing to allow for a high level of hygiene. A sufficient number of retractable hot water hose reels with soap dispensers shall be provided in the kitchen area, so that all surfaces are reachable with a hose of maximum 10 m length.

All transport routes and doors shall be adequately dimensioned.

7.6.2 Provision stores

The provision stores shall be of a prefabricated type, unless specified otherwise by operator/company. They shall include all required systems and services, suitable for use on the installation. The stores shall consist of

- cold storage rooms,
- freezer rooms.

The dry storage room will normally be built of a standard partition system, and have normal ventilation.

The provision stores shall have sufficient storage capacity in accordance with operational and hygiene requirements. They shall operate within the specified temperature limits.

The provision stores shall be grouped together between the lay-down deck and the kitchen area, providing good access to the main functional areas in the kitchen. The number of rooms/compartments shall be in accordance with the regulations and any special operational requirements provided.

A sufficient number of drainage points, or a continuous drain, shall be provided outside the provision rooms.