

PART 11

OUTFIT AND FIRE PROTECTION

PART 11

OUTFIT AND FIRE PROTECTION

SECTION	SUBJECT
11.1	Paintwork
11.2	Fire protection
11.3	Oil fired and LPG installations
11.4	Accommodation arrangements
11.5	Toilets and sanitation
11.6	Ventilation
11.7	Water services
11.8	Lighting
11.9	Temperature
11.10	Ballast
11.11	Escape arrangements
11.12	Hand rails, Hand holds and grab rails
11.13	Securement of heavy items
11.14	Fishing equipment
11.15	Cathodic protection
11.16	Galvanic action
11.17	Steel/wood connections
11.18	Anchors and cables
11.19	Tables
11.19.1	Anchors and cables – requirements
11.20	Figures and illustrations
11.20.1	Hand rail arrangements

OUTFIT AND FIRE PROTECTION

Section 11.1 - Paintwork

Painting general

- 11.1.1 All paints, varnishes, anti-fouling and bitumen based compositions are to be of an approved marine commercial standard and quality, and of adequate film thickness in accordance with the paint Manufacturer's specification, and be fully compatible with previously coated surfaces.
- 11.1.2 Anti-fouling paints, where used, are to comply with current statutory and environmental regulations.
- 11.1.3 All working deck surfaces are to be provided with non-slip coating/coverings.
- 11.1.4 All tanks, pipework and fittings except where they are of non-ferrous material or galvanised, are to be painted externally with at least three coats of anti-corrosive paint.
- 11.1.5 All engine room pipework systems should be colour coded in accordance with Part 9, Table 9.5.1, or identified by a painted or taped band on each side of every joint.
- 11.1.6 When painting aluminium structures, care should be taken that the paint Manufacturer's procedures are strictly adhered to. All surfaces should be thoroughly degreased, etc. primed and coated with an appropriate primer prior to applying undercoats and finishing coats. The paints used for aluminium structures should not contain lead, mercury, copper, or other metals which would lead to degradation of the aluminium surfaces.

Painting steel vessels

- 11.1.7 Whenever possible, all steel plate and sections should be shot-blasted and primed prior to delivery to the Builder's yard. Alternatively, the steel may be shot-blasted and metal sprayed or coated with an epoxy resin based, or other high duty steel primer at the Builder's yard, prior to or during construction.
- 11.1.8 During construction, all weld damaged paint areas, cut edges or other breaks in previously primed surfaces are to be thoroughly cleansed and re-coated with a compatible primer. Paint should not be applied to continuously welded connections subject to air pressure or water testing until inspection and testing is completed.
- 11.1.9 On completion of construction, the hull is to be thoroughly cleaned and painted in accordance with the selected paint specification. Steelwork behind linings and in way of bilge areas may be painted with an approved

bitumen based composition, subject to compliance with these Standards and statutory requirements concerning flamespread characteristics.

- 11.1.10 Steelwork that is neither galvanised or shot-blasted is to be thoroughly cleaned of all rust and scale, and painted in accordance with paint Manufacturer's specification.

Painting GRP vessels

- 11.1.11 In all GRP vessels, paints used internally in the engine room and accommodation spaces are to be of low flame spread characteristics.
- 11.1.12 Where the painting of a GRP hull may be considered necessary, painting should not be carried out until the moulding has completely cured. Prior to the application of paint, the gelcoat surface should be treated with approved solvent to remove any residue of release agent or wax, and then washed. The GRP surface should then be lightly abraded prior to being coated with etching primer and final paint system to Manufacturer's specification.

Painting wood vessels

- 11.1.13 Before the application of paint, all timber fitted in positions liable to rot, which has not been previously pressure impregnated with preservative, is to receive not less than three coats of preservative. All straight lengths of timber such as decking, bulkhead timbers, floors and ceilings, etc., should, where practical, be pressure treated with preservative before fitting.
- 11.1.14 On completion of construction, the external and internal surfaces of the hull are to be painted in accordance with the paint Manufacturer's specification.

Section 11.2 - Fire protection

- 11.2.1 All decked vessels between 10m and 15m LOA are to have an approved fixed fire extinguisher system fitted in the machinery space.
- 11.2.2 Where the machinery space boundaries are constructed of steel or aluminium, the interior surface finish of the engine room and surfaces directly on the opposite side which are used as accommodation or control spaces, are to be coated with a Class 1 surface spread of flame rating paint.
- 11.2.3 The engine space boundaries of decked GRP vessels and decked wood vessels are to be capable of meeting a B15 Standard of fire protection. This level of protection is to apply to the deckhead and bulkheads in their entirety, and hull boundaries from 300mm below the waterline to the deckhead. Alternatively, where the total installed power does not exceed 400kW, a fixed fire extinguisher system will be accepted in lieu of B15 fire protection.

- 11.2.4 For aluminium vessels where the total installed power exceeds 400kW, a B15 standard of fire protection is to be supplied in the machinery space as described in Paragraph 11.2.3. This level of protection is in addition to the installation of a fixed fire extinguisher system.
- 11.2.5 Where a fixed fire extinguisher system is fitted in the engine space, it must of the type that can be manually operated from outside the space. An automatic discharge system is not permitted.
- 11.2.6 For machinery spaces that can be occupied, the fixed fire extinguisher system shall also incorporate an advance warning system with audible and visual alarms fitted within the space. Such spaces shall also be capable of being enclosed gas-tight.
- 11.2.7 Insulation materials in engine rooms are to be covered by a surface layer impermeable to oil.
- 11.2.8 The structure above and surrounding the galley/cooker area is to be effectively insulated with non-combustible materials or sheathing.
- 11.2.9 Fabrics used for curtains, upholstery and bunk mattresses, etc. are to be fire-retardant.
- 11.2.10 Exhaust pipes and ducts which are liable to become hot, are to be adequately insulated and positioned clear of combustible surfaces. Unprotected combustible materials are not to be fitted within 300mm of any exhaust pipe, cooker, heater or duct.
- 11.2.11 Interior lining materials fitted to the hull or superstructure are to be of marine grade plywood, composite plastic faced boards or other approved material.
- 11.2.12 Ventilators serving machinery and accommodation spaces are to be fitted with a manual closure outside the compartment for use in the case of fire. A permanent notice is to be fitted on the means of closure, or in a visible location in close proximity, stating **“TO BE CLOSED IN THE EVENT OF FIRE”**.
- 11.2.13 Where engine and accommodation doors are situated within a designated escape route, the door is to be A30 fire rated, and fitted with a means of self-closure.

Fire detection

- 11.2.14 Sleeping accommodation, galley, machinery space, and any spaces containing open flame devices are to be fitted with efficient fire/smoke detectors to give an audible warning in the space they are protecting and at the helm position.

Section 11.3 - Oil fired and LPG installations

- 11.3.1 Where oil-fired appliances are fitted, the supply tank is to be sited outside the compartment containing the appliance(s) together with a means of closing the oil supply to the appliance. Such means is to require manual re-setting in order to restore the oil supply. Appliances using fuel oil having a flash point of less than 60°C (closed test) are not to be fitted.
- 11.3.2 Oil-fired cookers and heaters are to have a melt valve or fusible link weighted lever valve adjacent to the appliance to isolate the fuel supply in the event of fire.
- 11.3.3 The installation of liquid petroleum gas type appliances is not permitted.

Carbon monoxide detection

- 11.3.4 An efficient carbon monoxide (CO) detector with audible and visible alarm is to be fitted in the following spaces:-
- (i) Every enclosed space that contains a fuel burning appliance, with the exception of unmanned machinery spaces. Fuel burning appliances include any appliance that burns gas, liquid or solid fuel;
 - (ii) Manned compartments, including wheelhouse and accommodation spaces, through which an exhaust from a fuel burning appliance runs.
- 11.3.5 CO alarms should be of the lithium battery type and installed in accordance with the Manufacturer's guidance.

Section 11.4 - Accommodation arrangements

- 11.4.1 All accommodation spaces are to have adequate headroom. It is recommended that at least 2m clear height be provided, but in no case should it be less than 1.9m.
- 11.4.2 Where possible, sleeping accommodation is to be located so as to minimize the effects of motion and acceleration but shall in no case be located forward of the collision bulkhead. See Part 3, Paragraph 3.11.7 regarding collision tanks.
- 11.4.3 The number of persons to be accommodated in a sleeping room is not to exceed six. The maximum number of persons to be accommodated in any sleeping room is to be clearly and permanently marked in a visible location within the room.
- 11.4.4 Where sleeping accommodation is installed, a separate sleeping room or sleeping rooms shall be provided for officers, if practicable.

- 11.4.5 Sleeping rooms are to be arranged and equipped to ensure reasonable comfort for the occupants and to facilitate tidiness. Adequate space and floor area shall be provided in each room to comfortably accommodate the number of occupants, taking into account the service of the vessel. Equipment provided shall include berths of appropriate dimensions, individual lockers sufficient for clothing and other personal effects, and a suitable writing surface.
- 11.4.6 Vessels with crew accommodation are to be provided with mess room accommodation suitable for their service and of sufficient size for the number of persons likely to use it at any one time.
- 11.4.7 Mess rooms shall be situated as close as possible to the galley, but in no case shall they be located forward of the collision bulkhead. Where practicable, mess room accommodation shall be separate from sleeping quarters.
- 11.4.8 Where a collision tank is fitted in lieu of a full height collision bulkhead, the mess room or sleeping accommodation may be located in the adjacent space in which the tank is located, but in such cases the vessel will be restricted to a maximum period of 24 hours at sea at any one time, and crew will not be permitted to sleep on board whilst the vessel is in port.
- 11.4.9 Direct openings into sleeping rooms from fishrooms and machinery spaces are not permitted, except for the purpose of emergency escape. Where practicable, direct openings into sleeping rooms from galleys, storerooms, drying rooms and communal sanitary areas are to also be avoided.
- 11.4.10 Where practicable, a place for hanging foul-weather gear and other personal protective equipment is to be provided outside of, but convenient to, sleeping rooms.
- 11.4.11 Accommodation spaces are to be adequately insulated. The materials used to construct internal divisions, panelling, and floors and joinings are to be suitable for the purpose and conducive to ensuring a healthy environment. For additional requirements relating to fire protection, refer to Section 11.2.
- 11.4.12 Where crew accommodation is installed on board a vessel, cooking facilities are to be provided. These should be fitted, where practicable, in a separate galley. The galley, or cooking area where a separate galley is not provided, is to be of adequate size to suit the intended purpose. In addition, a suitable place for provisions is to be provided which can be kept dry, cool and ventilated. Refrigerators or other low-temperature storage facilities should be provided where possible.

Section 11.5 - Toilets and sanitation

- 11.5.1 Where crew accommodation is to be installed, sanitary facilities, which include toilets, washbasins, and tubs or showers, are to be provided for all persons on board, as appropriate for the service of the vessel. These

facilities shall meet at least minimum standards of health and hygiene and reasonable standards of quality.

- 11.5.2 The sanitary facilities shall allow for reasonable privacy and are to be arranged such as to eliminate contamination of other spaces as far as practicable.
- 11.5.3 On vessels with crew accommodation, amenities for washing and drying of clothes are to be provided as necessary, taking into account the service of the vessel.
- 11.5.4 All surfaces in sanitary accommodation are to be such as to facilitate easy and effective cleaning. Floors are to have a non-slip deck covering.

Section 11.6 - Ventilation

- 11.6.1 An effective means of ventilation is to be provided to all enclosed accommodation spaces, and service spaces which under normal operating conditions may be entered by persons on board. All ventilators are to meet the requirements stated at Part 3, Section 3.3 for hull integrity and arrangement, and the means of ventilation should supply air in satisfactory condition.
- 11.6.2 Engine rooms are to be adequately ventilated to meet the engine Manufacturer's recommendations for engine air supply and exhaust requirements. Where auxiliary engines are fitted, extra ventilation is to be provided to ensure sufficient total air capacity for both engines. Where electric ventilation fans are provided to the engine space, a means of stopping the fans, operable from outside the engine space, must be provided.
- 11.6.3 Toilet and shower/washroom spaces are to be fitted with separate exhaust ventilation direct to open air, independent of any other part of the accommodation.
- 11.6.4 Galleys, and any similar such cooking areas, are to have sufficient ventilation, taking into account the size and nature of the compartment.

Section 11.7 - Water services

- 11.7.1 Where the number of crew and duration and nature of voyage are such that facilities for cold fresh drinking water are to be installed, the facilities shall be capable of supplying a sufficient quantity of cold fresh water to meet the requirements of the number of crew on board.
- 11.7.2 Where sanitation, galleys or mess rooms are provided, facilities are to be installed to provide cold fresh water and hot fresh water in sufficient quantities to allow for proper hygiene.

- 11.7.3 Freshwater tanks may be integral with the hull or separate tanks securely fitted in position. The tanks are to be constructed complete with baffles, access manholes for cleaning and all necessary valves, air pipes and fillers. Built-in tanks in GRP vessels are to be coated internally with a non-toxic approved composition or paint to prevent styrene contamination and to seal the GRP hull laminate. Steel fabricated tanks are to be continuously welded inside and out. Internal coatings are to be non-toxic and suitable for use with potable water.

Section 11.8 - Lighting

- 11.8.1 An electric lighting system is to be provided and installed to the requirements of Part 10 of these Standards 'Electrical Installations'. The lighting system must be capable of supplying adequate light to all enclosed accommodation spaces and, where possible, to working spaces, escape routes and life-saving appliance stowage positions. Galleys, and any similar such cooking areas, are to be well-lit.
- 11.8.2 Wherever practicable, accommodation spaces shall be lit with natural light in addition to artificial light, taking into account the requirements stated in Part 3 relating to portlights, windows and skylights.
- 11.8.3 11.9.2 Adequate reading light shall be provided for every berth in addition to the normal lighting of the sleeping accommodation.
- 11.8.4 Emergency lighting is to be provided in sleeping accommodation spaces, installed in accordance with Part 10 of these Standards. Where a vessel is not fitted with emergency lighting in mess rooms, passageways and any other spaces that may be used for emergency escape, permanent night lighting shall be provided in such spaces.

Section 11.9 - Temperature

- 11.9.1 Where practicable, the temperature within accommodation spaces and enclosed work areas is to be kept within a comfortable range, having regard to the physical demands placed on the crew, and the actual or potential weather conditions in the area in which the vessel is designed to operate.

Section 11.10 - Ballast

- 11.10.1 Loose ballast is to be firmly secured to prevent movement. Due consideration is to be given to the possibility of corrosion at the ballast position, and suitable preventative measures such as painting or sealing should be carried out, to ensure interior hull protection. Where concrete ballast is fitted, care should be taken to ensure the drainage of bilge water remains effective.

Section 11.11 - Escape arrangements

- 11.11.1 On all vessels of 10m LOA and above, where practicable, emergency escape routes are to be provided from the wheelhouse and sleeping accommodation.
- 11.11.2 In vessels 10m LOA and over with an enclosed machinery space, at least two means of escape from the engine room should be provided, separated as far apart as practicable, except that, where the size of the machinery space renders this impracticable, one escape may be fitted, subject to approval.
- 11.11.3 In the case of vessels fitted with an enclosed shelter, an additional access from within to the shelter top is to be fitted to facilitate escape in an emergency. The position of the escape is to be agreed with the Surveyor and dimensions are to be not less than 600mm x 600mm.
- 11.11.4 Escape routes are defined as a means of exit which is unobstructed, easily accessible and leads out as directly as possible to an open deck. An escape may be through any hatch, door, or skylight which has a minimum clear opening of not less than 500mm x 500mm, and in the case of portlights, 400mm minimum diameter. Where windows are to be utilised as escapes, the minimum opening should be no less than 500mm x 380mm. Where the arrangement of the vessel or compartment renders a secondary escape impractical, details are to be submitted for approval.
- 11.11.5 Emergency escape hatches or doors must be capable of easy opening from both sides, without the use of special keys or tools, and must not be fitted with padlocks or locked closed when the vessel is occupied. Escape routes and exits must be indicated by permanent signs.
- 11.11.6 All spaces must be fitted with sufficient ladders, steps, hand rails and grips as deemed necessary to facilitate easy access and escape. Ladders are normally to be of steel construction.

Section 11.12 - Hand rails, hand holds and grab rails

- 11.12.1 On decked or partially decked vessels, the perimeter of the exposed deck is to be fitted with fixed bulwarks, guard rails or wires, or a combination of these. The height of the bulwark, guard rail, or wire is to be not less than 1m, where there is unreasonable interference with efficient operation of the vessel, this height for fixed bulwarks, rails, and wires, may be reduced, and the required height of 1m maintained by the use of portable wires and stanchions. See Figure 11.20.1. The maximum recommended distance between stanchions is 1.5m.
- 11.12.2 Where tubular guard rails or wires are fitted, the lower course of rails or wire is to have a clearance of not more than 230mm above the deck, with

remaining courses evenly spaced at a distance not more than 400mm apart.

- 11.12.3 Where an exposed raised deck is not to be accessed for any reason whilst at sea, then hand rails may be omitted around this area. In such cases, access to the raised deck from the working deck should be prevented by use of rails, wires or chains fitted in accordance with the Standards to maintain a top rail height of 1000mm above the working deck (or step if fitted), and notices should be fitted at the adjoining boundary stating “**No access beyond this point**”. If any form of hatch, skylight or door provides access to the exposed raised deck, then hand rails must be fitted around the raised deck in accordance with the Standards.
- 11.12.4 Where an exposed raised deck is not to be accessed for any reason whilst at sea except for anchor release and retrieval, then hand rails may be omitted from the perimeter of this area and a suitable rail system fitted to allow the use of a safety harness and tether. In such cases, access to the raised deck from the working deck should be restricted using removable wires or chains fitted in accordance with the Standards to maintain a height of 1000mm above the working deck (or step if fitted), and notices should be fitted at the adjoining boundary stating “**Safety harness must be worn beyond this point**”. If any form of hatch, skylight or door provides access to the exposed raised deck then hand rails must be fitted around the raised deck in accordance with the Standards.
- 11.12.5 Sufficient hand holds and grab rails must be provided to allow safe movement around the accommodation and working spaces. Storm rails and hand holds are to be fitted in the outside of deckhouses and casings to enable the safe movement of the crew on all working deck areas when the vessel is in a seaway.
- 11.12.6 All vessels are to be fitted with a permanently mounted re-boarding ladder that can be deployed from a man overboard position (i.e. it must be possible to deploy the ladder from in the water). The ladder is to be capable of extending from the gunwale/bulwark top to 600mm below the waterline.
- 11.12.7 The re-boarding ladder should be of firm construction and fit for purpose. Rope and webbing ladders may be accepted as re-boarding ladders, details are to be submitted to MCA or Fishing Vessel Certifying Authority for consideration. All ladders are required to be permanently fixed to the vessel.
- 11.12.8 The re-boarding ladder may be made up of more than one construction type to achieve the full extension required for boarding. For example, an extending ladder may be fitted in conjunction with fixed rungs or hand holds in the bulwark. In all cases, the ladder must enable a person to board the vessel from a man overboard position.

- 11.12.9 Safe access by means of steps, ladders and hand holds/rails is to be provided to wheelhouses and deckhouse top areas which are to have a non-slip finish.
- 11.12.10 It is recommended that all single handed operated vessels are fitted with an emergency kill system for the main engine, in case of a man overboard situation.

Section 11.13 - Securement of heavy items

- 11.13.1 All heavy items of equipment such as batteries, gas bottles, cooking appliances and spare gear must be securely fastened in position to prevent movement when the vessel is at sea. All lockers and stowage cupboards containing heavy items must have a lid or doors with secure fastening arrangements.

Section 11.14 - Fishing equipment

- 11.14.1 Masts, derricks and lifting equipment may be of suitable timber, steel or other approved material and securely fastened to the vessel's structure. The maximum safe working load and maximum radius of operation of all derricks and lifting equipment is to be stated in the building specification or approved constructional drawings, and are the responsibility of the vessel Builder.
- 11.14.2 The associated ropes, wires and guys, eyeplates, shackles and blocks are to be designed to meet these loads. Derricks should be tested as rigged for services to not less than the appropriate British Standards or equivalent requirement, and the maximum safe working load is to be permanently indicated on the derrick. In all cases the LOLER and PUWER regulation referenced in Paragraph 11.14.9 shall apply.
- 11.14.3 Where practical, warp rollers and leads are to be fitted with guards and be positioned to enable safe passage by crew members. All deck machinery is to be of a good marine standard and be suitable for the size of vessel and type of fishing to be prosecuted. The controls of all equipment are to be arranged adjacent to the Operator's position to enable a clear view of the gear being hauled. Controls should not be positioned in such a way that the Operator has to reach over the moving equipment.
- 11.14.4 An emergency stop facility is to be provided at the helm position for all hydraulically operated deck equipment and in addition a local emergency stop device is to be fitted at the winch or hauler.
- 11.14.5 The emergency stop facility at the helm and the local emergency stop device shall be of the typical push-to-stop button type and shall be fitted in addition to the normal operating controls of the equipment.
- 11.14.6 All winches and haulers are required to have a local emergency stop device. Consideration should be given to the positioning of the local

emergency stop to maximise the chance of operation in the event of an accident. In general, it should be located within a reaching distance of approximately one metre from the actual piece of equipment it is intended to stop (this may not necessarily be the control position), and should be positioned so that it will be visible and readily accessible at all times. The device should not be fitted in a position where other parts of the vessel will cause obstruction to either its visibility or operation.

- 11.14.7 A local emergency stop device may cover more than one piece of hydraulically operated deck equipment providing its location in relation to each piece of equipment complies with the requirements of Paragraph 11.14.6.
- 11.14.8 Emergency stop facilities/devices for hydraulic deck equipment are not to interfere with the running of any propulsion engine, or any other item of machinery used to control the vessel.
- 11.14.9 It is the responsibility of the Builder/Designer and Owner to ensure that all equipment necessary for the operation and use of the vessel meets the requirements as laid out in PUWER: Provision and Use of Work Equipment Regulations and LOLER: Lifting Operations and Lifting Equipment Requirements. These regulations cover any equipment that is used in the course of the work aboard the vessel, including all equipment used in any way for lifting operations including attachments for anchoring, fixing or supporting structures and equipment used in conjunction with the operation of the vessel.

Section 11.15 - Cathodic protection

- 11.15.1 An approved method of cathodic protection is to be fitted to all vessels to eliminate or reduce corrosion. The anodes should be of the correct surface area as recommended by the Manufacturer, bonded with correctly sized wires. Continuity bridges are to be fitted at flexible pipe positions, engines, stern gear, rudder and seacocks.

Section 11.16 - Galvanic action

- 11.16.1 Where connections of dissimilar metals are made, special consideration is to be given to hull fittings and penetrations, bulkhead and deck penetrations and attachment of equipment, in order to prevent any galvanic corrosion.

Section 11.17 - Steel/wood connections

- 11.17.1 Wood connections directly to steel structure and vice versa are to be protected against corrosion. The wood is to be primed and painted or the surface connecting to the steel structure or fitting is to be coated with a compatible non-hardening sealant.

Section 11.18 - Anchors and cables

- 11.18.1 Every vessel should be equipped with anchors, chain cables and or rope sufficient in weight and strength, having regard to the vessel's size and intended service.
- 11.18.2 The requirements shown in the Anchors and Cables Table below are for a vessel of displacement hull form, which may be expected to ride out storms whilst at anchor and when seabed conditions are favourable. The anchor sizes shown in the Table are for high holding power types. Where a fisherman type anchor is provided, the weight given in the Table is to be increased by 25%, but the diameter of the anchor cable need not be increased.
- 11.18.3 Wire rope of suitable strength and positioned in a suitable location (e.g. trawl warps) may be substituted for chain cable provided that a length of chain cable is attached between the wire rope and the anchor, as specified in Table 11.20.1.
- 11.18.4 The length of the chain cable should not be less than the LOA of the vessel.
- 11.18.5 The main anchor must be rigged, ready for use in a position where it may be safely and reliably deployed from a dead ship condition and is to be provided with a means of retrieval.
- 11.18.6 Where a vessel has an unusual hull form and an unusually high windage area, due to high freeboard or large superstructure, the weight of the anchor is to be increased to take account of the increase in wind loading. For vessels with partial shelters the anchor weight is to be 1.3 times and for full shelters the anchor weight is to be 1.6 times the anchor requirement. The increased anchors are to have chain and rope for their designated weights, as specified in Table 11.20.1.
- 11.18.7 The length of anchor cable attached to an anchor is to be appropriate to the holding ground and depth of water in the area of the operation of the vessel, but in no case less than that shown in Table 11.20.1. It is recommended the total anchor cable length is a minimum of 10 times the intended depth of water at anchorage.
- 11.18.8 All vessels must be provided with a means of being towed.

11.19 Tables

11.19.1 Table 1: Anchors and cables – requirements

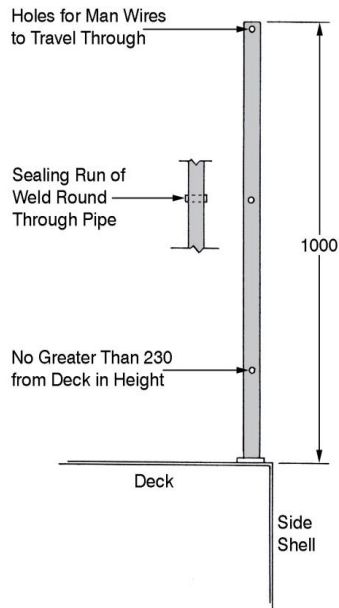
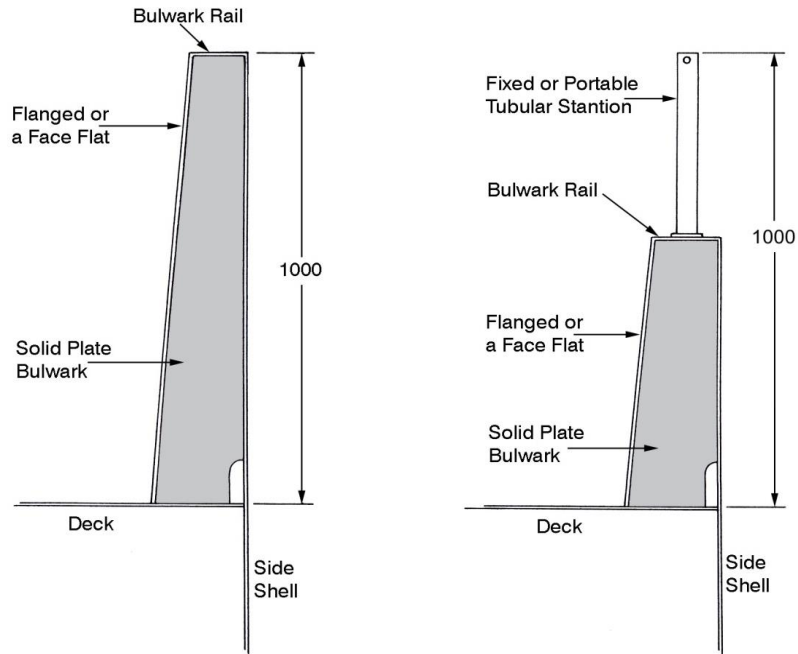
Anchor numeral L x B x D	Total weight of anchor/s kg	Number of anchors	Length of cable (m)		Diameter of chain mm	Diameter of rope mm
			Minimum chain m	Minimum length M		
10	9	1	4	25	6	10
15	14	1	5	30	6	12
20	16	1	6	30	6	15
25	18	1	7	35	6	15
35	22	1 or 2	8	35	8	18
50	27	1 or 2	9	40	8	18
70	34	1 or 2	10	45	8	20
90	41	1 or 2	12	50	10	20
110	48	1 or 2	15	55	10	25
150	62	1 or 2	15	60	10	25
200	80	1 or 2	15	70	12	30
250	98	1 or 2	15	82.5	12	35
300	115	1 or 2	15	82.5	12	40
350	133	1 or 2	15	82.5	12	40

Notes:-

1. Anchor numeral L x B x D is obtained from the following:-
 L = Overall length in metres
 B = Overall beam in metres (maximum - outside planking or plating)
 D = Depth in metres (maximum - deck at side to top of keel amidships).
2. Requirements for vessels with intermediate anchor numeral value are to be obtained by interpolation.
3. Chain cable diameter is given for short link chain. Chain cable should be sized in accordance with EN 24/565:1989 (ISO 4565:1986 and BS 7160:1990 - Anchor Chains for Small Craft) or equivalent.
4. The rope diameter given is for nylon construction. Where rope of differing construction is provided, the breaking load should not be less than that of the diameter of nylon rope specified in the Table.
5. Where stud link chain cable is used, the diameter may be 1.5mm less than the tabular diameter stated.
6. Two anchors are permitted on vessels with an anchor numeral 35>. The weight of the main anchor is to be at least 66% of the total weight for the anchors given in the table. The main and kedge anchors are to be rigged with chain and rope for their designated weight.

11.20 Figures and illustrations

11.20.1 Hand rail arrangements



See Section 11.12