RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

RULES

Part P Mobile Offshore Drilling Units and Special Purpose Barges

2016 AMENDMENT NO.1

Rule No.40 30th June 2016
Resolved by Technical Committee on 5th February 2016
Approved by Board of Directors on 22nd February 2016

Rule No.40 30th June 2016
AMENDMENT TO THE RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

"Rules for the survey and construction of steel ships" has been partly amended as follows:

Part P MOBILE OFFSHORE DRILLING UNITS AND SPECIAL PURPOSE

Amendment 1-1

Chapter 15 FIRE EXTINGUISHING SYSTEMS

15.2 Mobile Offshore Drilling Units

15.2.16 Operational Readiness and Maintenance

Sub-paragraph -4(1) has been amended as follows.

4 For maintenance, testing and inspections, the following requirements are to be complied with.

(1) Maintenance, testing and inspections are to be carried out based on the Revised Guidelines for the Maintenance and Inspection of Fire Protection Systems and Appliances (*MSC*.1/*Circ*.1432 as amended, including the amendments by *MSC*.1/*Circ*.1516) developed by the *IMO* and in a manner having due regard to ensuring the reliability of fire-fighting systems and appliances.

EFFECTIVE DATE AND APPLICATION (Amendment 1-1)

1. The effective date of the amendments 30 June 2016.

Amendment 1-2

Chapter 9 HULL EQUIPMENT

Section 9.6 has been amended as follows.

9.6 Means of Access

9.6.1 General

1 Each space within the unit is to be provided with at least one permanent means of access to enable, throughout the life of a unit, overall and close-up inspections and thickness measurements of the unit's structures to be carried out. ~~Such means of access are to comply with **Chapter 35, Part C.**~~

2 Where a permanent means of access may be susceptible to damage during normal operations or where it is impracticable to fit permanent means of access, the Society may allow, in lieu thereof, the provision of movable or portable means of access, provided that the means of attaching, rigging, suspending or supporting the portable means of access forms a permanent part of the unit's structure. All portable equipments are to be capable of being readily erected or deployed by the unit's personnel.

3 The construction and materials of all means of access and their attachment to the unit's structure are to be to the satisfaction of the Society.

9.6.2 Means of ~~Safe~~ Access to ~~Holds, Ballast Tanks and Other~~ Spaces

1 Safe access to holds, cofferdams, tanks and other spaces are to be direct from the open deck. Those accesses are to comply with the following requirements.

(1) Tanks, having a length of 35 *m* or more, are to be fitted with at least two access hatchways and ladders, as far apart as practicable.

(2) Tanks less than 35 *m* in length are to be served by at least one access hatchway and ladder.

(3) Each hold is to be provided with at least two means of access as far apart as practicable. In general, these accesses are to be arranged diagonally, e.g., one access near the forward bulkhead on the port side, the other one near the aft bulkhead on the starboard side.

(4) When a tank is subdivided by one or more swash bulkheads or similar obstructions which do not allow ready means of access to the other parts of the tank, at least two hatchways and ladders are to be fitted.

2 Safe access to holds, cofferdams, tanks and other spaces are to be direct from the open deck and such as to ensure their complete inspection. Safe access may be from a machinery space, pump-room, deep cofferdam, pipe tunnel, hold, double hull space or similar compartment not intended for the carriage of oil or hazardous materials where it is impracticable to provide such access from an open deck.

3 The uppermost entrance section of the ladder providing access from the deck to ballast tanks or other spaces is to be vertical for not less than 2.5 *m*, but not in excess of 3.0 *m* measured clear of the overhead obstructions in way of the tank entrance, and be connected to a ladder linking platform which is to be displaced to one side of the vertical ladder. However, where there is a longitudinal or athwartship permanent means of access fitted within 1.6 *m* and 3 *m* below the deck head, the uppermost section of the ladder may stop at this means of access.

4 Access ladders to ballast tanks and other spaces are to be in accordance with the following.

(1) Where two access hatchways or manholes and ladders are required as in **-1(1)** above, at least one ladder is to be of the inclining type. However, the uppermost entrance section of the

ladder is to be vertical in accordance with the provisions of **-3** above.

(2) Where ladders not required to be of the inclined type as specified in **(1)** above, maybe of a vertical type. Where the vertical distance is more than 6 *m*, vertical ladders are to be connected by one or more ladder linking platforms, generally spaced not more than 6 *m* apart vertically and displaced to one side of the ladder. The uppermost entrance section of the ladder is to be in accordance with the provisions of **-3** above.

(3) Where one access hatchway or manhole and ladder is required as in **-1(2)** above, an inclined ladder is to be used in accordance with the provisions of **(1)** above.

(4) In double hull spaces of less than 2.5 *m* width, access to the space may be made by means of vertical ladders that are connected to one or more ladder linking platforms generally spaced not more than 6 *m* apart vertically and displaced to one side of the ladder. Adjacent sections of ladder are to be laterally offset from each other by at least the width of the ladder. The uppermost entrance section of the ladder is to be in accordance with the provisions of **-3** above.

(5) Access from the deck to a double bottom space may be made by means of a vertical ladder through a trunk. The vertical distance from the deck to a resting platform, between resting platforms, or a resting platform and the tank bottom is generally not to be more than 6 *m* unless approved otherwise by the Society.

5 Access ladders to large holds and other similar spaces are to be in accordance with the following.

(1) Either a vertical ladder or an inclined ladder may be used where the vertical distance between the upper surface of adjacent decks or between the deck and the bottom of the hold is not more than 6 *m*.

(2) An inclined ladder or a series of inclined ladders at one end of the hold is to be used where the vertical distance between the upper surface of adjacent decks or between the deck and the bottom of the hold is more than 6 *m*, except for the uppermost 2.5 *m* of the hold measured clear of overhead obstructions and the lowest 6 *m* may have vertical ladders, provided that the vertical extent of the inclined ladder or ladders connecting the vertical ladders is not less than 2.5 *m*.

(3) Means of access at the end of the hold other than those specified in **(2)** above, may be formed by a series of staggered vertical ladders, which is to be connected to one or more ladder linking platforms spaced not more than 6 *m* apart vertically and displaced to one side of the ladder. Adjacent sections of ladder are to be laterally offset from each other by at least the width of the ladder. The uppermost entrance section of the ladder directly exposed to a hold is to be vertical for a distance of 2.5 *m* measured clear of overhead obstructions and connected to a ladder-linking platform.

(4) A vertical ladder may be used as a means of access from a deck to a tank or space below, where the vertical distance between the deck and the longitudinal means of access in the tank, the stringer, or the bottom of the space immediately below the entrance is not more than 6 *m*. The uppermost entrance section of the ladder of the tank is to be vertical for a distance of 2.5 *m* measured clear of overhead obstructions and be connected to a ladder linking platform, unless the landing on the longitudinal means of access, the stringer, or the bottom is within 2.5 *m* and is displaced to one side of the vertical ladder.

(5) Unless specified in **(4)** above, an inclined ladder is to be used for access to a tank or space where the vertical distance is greater than 6 *m* between the deck and a stringer immediately below the entrance, between stringers, or between the deck or a stringer and the bottom of the space immediately below the entrance.

(6) In the case of **(5)** above, the uppermost entrance section of the ladder is to be vertical for a distance of 2.5 *m* clear of overhead obstructions and connected to a landing platform. Another

ladder is to continue down from the platform. Inclined ladders are not to be more than 9 *m* in actual length and the vertical height is not normally to be more than 6 *m*. The lowermost section of the ladder may be vertical for a distance of 2.5 *m*.

(7) In narrow spaces of less than 2.5 *m* width, access to the space may be made by means of vertical ladders that connects to one or more ladder linking platforms spaced not more than 6 *m* apart vertically and displaced to one side of the ladder. Adjacent sections of ladder are to be laterally offset from each other by at least the width of the ladder.

(8) A spiral ladder may be considered acceptable as an alternative for inclined ladders. In this regard, the uppermost 2.5 *m* can continue to be comprised of the spiral ladder and need not change over to vertical ladders.

9.6.3 Means of Access within Spaces

1 Water ballast tanks except those specified in **-2** and other tanks are to be provided with means of access in accordance with the following **(1)** to **(6)**.

(1) For tanks of which the height is not less than 6 *m*, permanent means of access are to be provided in accordance with **(a)** to **(f)**.

(a) A continuous athwartship permanent means of access is to be arranged at each transverse bulkhead on the stiffened surface, at a minimum of 1.6 *m* to a maximum of 3 *m* below the deck head.

(b) At least one continuous longitudinal permanent means of access is to be provided at each side of the tank. One of these accesses is to be at a minimum of 1.6 *m* to a maximum of 6 *m* below the deck head and the other is to be at a minimum of 1.6 *m* to a maximum of 3 *m* below the deck head.

(c) Access between the arrangements specified in **(a)** and **(b)** and from the main deck to either **(a)** or **(b)** is to be provided.

(d) A continuous longitudinal permanent means of access integrated into the structural members on the stiffened surface of a longitudinal bulkhead, in alignment, where possible, with horizontal girders of transverse bulkheads is to be provided for access to transverse webs from the upper deck and tank bottom unless permanent fittings are installed at the uppermost platform for use as an alternative means deemed appropriate by the Society, for inspection at intermediate heights.

(e) A transverse permanent means of access on the cross-ties providing access to the tie flaring brackets at both sides of the tank, with access from one of the longitudinal permanent means of access in **(d)** for ships having cross-ties which are not less than 6 *m* above the tank bottom.

(f) An alternative means deemed appropriate by the Society may be provided for tanks other than ballast tanks less than 17 *m* in height as an alternative to **(d)**.

(2) For tanks less than 6 *m* in height, an alternative means deemed appropriate by the Society or portable means may be utilized in lieu of permanent means of access.

(3) Notwithstanding **(1)** and **(2)** above, tanks not containing internal structures need not to be provided with permanent means of access.

(4) Means of access deemed appropriate by the Society are to be provided for access to under deck structures, transverse webs and cross-ties outside the reach of permanent and/or portable means of access, as required in **(1)** and **(2)** above.

(5) For Pre-load tanks of less than 17 *m* in height in self-elevating units if it is not practicable to fit permanent means of access mentioned in **(1)** and **(2)** above due to their shape, the Society may permit the provision of alternative means.

(6) For ballast tanks in columns of column-stabilized units, longitudinal means the perimetral direction of the column and transversal means the radial direction of the column.

2 For water ballast tanks of less than 5 *m* width are to be provided with means of access in accordance with the following **(1)** to **(5)**.

(1) For double side spaces above the upper knuckle point of the bilge hopper sections in surface units (ship-type or barge-type), permanent means of access are to be provided in accordance with **(a)** to **(c)**:

(a) Where the vertical distance between the uppermost horizontal stringer and the deck head is not less than 6 *m*, one continuous longitudinal permanent means of access is to be provided for the full length of the tank with a means to allow passing through transverse webs installed at a minimum of 1.6 *m* to a maximum of 3 *m* below the deck head with a vertical access ladder at each end of the tank.

(b) A continuous longitudinal permanent means of access integrated in the structure at a vertical distance not exceeding 6 *m* apart is to be provided.

(c) Plated stringers are, as far as possible, to be in alignment with horizontal girders of transverse bulkheads.

(2) For bilge hopper sections, of which the vertical distance from the tank bottom to the upper knuckle point is not less than 6 *m*, in surface units (ship-type or barge-type) and pontoons in column-stabilized units one longitudinal permanent means of access is to be provided for the full length of the tank in accordance with the following **(a)** and **(b)**. It is to be accessible by a vertical permanent means of access at each end of the tank.

(a) The longitudinal continuous permanent means of access may be installed at a minimum of 1.6 *m* to a maximum of 3 *m* from the top of the bilge hopper section. A platform extending from the longitudinal continuous permanent means of access in way of the web frame may be used to access the identified critical structural areas.

(b) Alternatively, the continuous longitudinal permanent means of access may be installed at a minimum of 1.2 *m* below the top of the clear opening of the web ring allowing the use of portable means of access to reach identified critical structural areas.

(3) Where the vertical distance referred to in **(2)** is less than 6 *m*, alternative means deemed appropriate by the Society or portable means of access may be utilized in lieu of permanent means of access. To facilitate the operation of the alternative means of access, in-line openings in horizontal stringers are to be provided. The openings are to be of an adequate diameter and are to have suitable protective railings.

(4) For pre-load tanks in self-elevating units, if it is not practicable to fit permanent means of access mentioned in **-1(1)** and **(2)** above due to their shape, the Society may permit the provision of alternative means.

(5) For ballast tanks in columns of column-stabilized units of which the vertical distance between each watertight flat or between horizontal stringers/non-tight flats is 6 *m* and over, one permanent means of access is to be provided for the full length of the tank required in **(1)** above.

3 For holds, means of access to the overhead structure of the main deck are to be fitted in accordance with the following **(1)** to **(4)**.

(1) Permanent means of access are to be fitted to provide access to the overhead structure at both sides of the cross deck and in the vicinity of the centreline. Each means of access is to be accessible from the hold access or directly from the main deck and installed at a minimum of 1.6 *m* to a maximum of 3 *m* below the deck.

(2) An athwartship permanent means of access fitted on the transverse bulkhead at a minimum of 1.6 *m* to a maximum of 3 *m* below the cross deck head is deemed as equivalent to **(1)**.

(3) Access to the permanent means of access in **(1)** and **(2)** above may be via the uppermost stringer.

(4) Alternatively, in place of the requirement in **(1)** above, movable means of access may be

utilized for access to the overhead structure of the cross deck if its vertical distance is not greater than 17 *m* above the bottom of the hold.

4 For all holds, permanent means of vertical access are to be provided in all cargo holds and in no circumstances this arrangement is to be less than 3 permanent means of vertical access fitted to each side (fore and aft ends of hold and mid-span).

5 For fore and aft peak tanks with a depth of not less than 6 *m* at the centreline of the collision and aft end bulkheads in surface units (ship-type or barge-type), a suitable means of access are to be provided for access to critical areas such as the underdeck structure, stringers, collision and aft end bulkheads and side shell structure in accordance with the following **(1)** and **(2)**.

(1) Stringers of less than 6 *m* in vertical distance from the deck head or a stringer immediately above are considered to provide suitable access in combination with portable means of access.

(2) Where the vertical distance between the deck head and stringers, stringers or the lowest stringer and the tank bottom is not less than 6 *m*, alternative means of access deemed appropriate by the Society is to be provided.

6 When permanent means of access to critical structural areas located at a height of 6 *m* or more from the bottom of the space are not covered by sections **-1** to **-5** above, continuous permanent access arranged at the bulkhead on the stiffened surface is to be provided at a maximum of 3 *m* below the critical structural area, but not higher than 1.6 *m* below the deck throughout the extent of the critical structural area.

7 For critical structural areas located at a height of less than 6 *m* from the bottom of the space, alternative means of access deemed appropriate by the Society is to be provided.

8 Suitable means of access into the interior of the horizontal braces in column stabilized units deemed appropriate by the Society are to be provided. For access through vertical openings, the requirements of **9.6.4-6** are to be applied.

~~**9.6.3 Access Manual**~~

~~Access manual is to be kept onboard. A unit's means of access to carry out overall and close-up inspections and thickness measurements are to be described in an access manual which may be incorporated in the unit's operating manual. The manual is to be updated as necessary and the updated manual maintained on board. The structure access manual is to include the following for each space:~~

~~(1) Plans showing the means of access to the space, with appropriate technical specifications and dimensions~~

~~(2) Plans showing the means of access within each space to enable an overall inspection to be carried out, with appropriate technical specifications and dimensions. The plans are to indicate from where each area in the space can be inspected~~

~~(3) Plans showing the means of access within the space to enable close-up inspections to be carried out, with appropriate technical specifications and dimensions. The plans are to indicate the positions of critical structural areas, whether the means of access is permanent or portable and from where each area can be inspected~~

~~(4) Instructions for inspecting and maintaining the structural strength of all means of access and means of attachment, taking into account any corrosive atmosphere that may be within the space~~

~~(5) Instructions for safety guidance when rafting is used for close-up inspections and thickness measurements~~

~~(6) Instructions for the rigging and use of any portable means of access in a safe manner~~

~~(7) An inventory of all portable means of access~~

~~(8) Records of periodical inspections and maintenance of the unit's means of access~~

9.6.4 ~~Safe Access through Openings, Hatches or Manholes~~ Specifications for Means of Access and Ladders

1 Permanent means of access are, in general, to be integral to the structure of the ship, thus ensuring that they are robust. Where deemed necessary by the Society for facilitating that such means of access are of integral parts of the structure itself, reasonable deviations from the requirements of the position of means of access in **9.6.2** and **9.6.3** may be accepted.

2 Elevated passageways forming sections of a permanent means of access, where fitted, are to have a minimum clear width of 600 *mm*, except for going around vertical webs where the minimum clear width may be reduced to 450 *mm*, and have guard rails over the open side of their entire length.

3 Sloping parts of the access are to be of non-skid construction.

4 Elevated passageways forming sections of a permanent means of access, are to be provided with guard rails of 1,000 *mm* in height and consist of a rail and an intermediate bar 500 *mm* in height and of substantial construction, with stanchions not more than 3 *m* apart, on the open side. Guardrail stanchions are to be attached to the permanent means of access.

5 ~~**1**~~ For access through horizontal openings, hatches or manholes, the dimensions are to be sufficient to allow a person wearing a self-contained air-breathing apparatus and protective equipment to ascend or descend any ladder without obstruction and also provide a clear opening to facilitate the hoisting of an injured person from the bottom of a confined space. The minimum clear opening is not to be less than 600 *mm* × 600 *mm*. When access to a hold is arranged through a flush manhole in the deck or a hatch, the top of the ladder is to be placed as close as possible to the deck or hatch coaming. Access hatch coamings having a height greater than 900 *mm* are to also have steps on the outside in conjunction with the ladder.

6 ~~**2**~~ For access through vertical openings, or manholes, in swash bulkheads, floors, girders and web frames providing passage through the length and breadth of the space, the minimum opening is to be not less than 600 *mm* × 800 *mm* at a height of not more than 600 *mm* from the bottom shell plating unless gratings or other footholds are provided.

7 Smaller dimensions for the openings referred to in **-5** and **-6** may be approved by the Society in special circumstances, if the ability to traverse such openings or to remove an injured person can be proved to the satisfaction of the Society.

8 Access to permanent means of access and vertical openings from the ship's bottom is to be provided by means of easily accessible passageways, ladders or treads. Treads are to be provided with lateral support for the foot. Where the rungs of ladders are fitted against a vertical surface, the distance from the centre of the rungs to the surface is to be at least 150 *mm*. Where vertical manholes are fitted higher than 600 *mm* above the walking level, access is to be facilitated by means of treads and hand grips with platform landings on both sides.

9 For ladders or similar facilities forming sections of a permanent means of access, their specifications are to the satisfaction of the Society.

9.6.5 Ship Structure Access Manual

1 Access manual is to be kept onboard. A unit's means of access to carry out overall and close-up inspections and thickness measurements are to be described in an access manual which may be incorporated in the unit's operating manual. The manual is to be updated as necessary and the updated manual maintained on board. The structure access manual is to include the following for each space:

(1) Plans showing the means of access to the space, with appropriate technical specifications and dimensions

(2) Plans showing the means of access within each space to enable an overall inspection to be

carried out, with appropriate technical specifications and dimensions. The plans are to indicate from where each area in the space can be inspected

(3) Plans showing the means of access within the space to enable close-up inspections to be carried out, with appropriate technical specifications and dimensions. The plans are to indicate the positions of critical structural areas, whether the means of access is permanent or portable and from where each area can be inspected

(4) Instructions for inspecting and maintaining the structural strength of all means of access and means of attachment, taking into account any corrosive atmosphere that may be within the space

(5) Instructions for safety guidance when rafting is used for close-up inspections and thickness measurements

(6) Instructions for the rigging and use of any portable means of access in a safe manner

(7) An inventory of all portable means of access

(8) Records of periodical inspections and maintenance of the unit's means of access

2 Where alternative means of access are adapted in accordance with the provisions of **9.6.3**, in addition to the requirement in **-1** above, a means for safe operation and rigging of such alternative means to and from and within the spaces are to be clearly described in the Ship Structure Access Manual.

EFFECTIVE DATE AND APPLICATION (Amendment 1-2)

1. The effective date of the amendments is 1 July 2016.

2. Notwithstanding the amendments to the Rules, the current requirements may apply to ships for which the date of contract for construction* is before the effective date.

* "contract for construction" is defined in the latest version of IACS Procedural Requirement (PR) No.29.

IACS PR No.29 (Rev.0, July 2009)

1. The date of "contract for construction" of a vessel is the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. This date and the construction numbers (i.e. hull numbers) of all the vessels included in the contract are to be declared to the classification society by the party applying for the assignment of class to a newbuilding.

2. The date of "contract for construction" of a series of vessels, including specified optional vessels for which the option is ultimately exercised, is the date on which the contract to build the series is signed between the prospective owner and the shipbuilder.

For the purpose of this Procedural Requirement, vessels built under a single contract for construction are considered a "series of vessels" if they are built to the same approved plans for classification purposes. However, vessels within a series may have design alterations from the original design provided:

(1) such alterations do not affect matters related to classification, or

(2) If the alterations are subject to classification requirements, these alterations are to comply with the classification requirements in effect on the date on which the alterations are contracted between the prospective owner and the shipbuilder or, in the absence of the alteration contract, comply with the classification requirements in effect on the date on which the alterations are submitted to the Society for approval.

The optional vessels will be considered part of the same series of vessels if the option is exercised not later than 1 year after the contract to build the series was signed.

3. If a contract for construction is later amended to include additional vessels or additional options, the date of "contract for construction" for such vessels is the date on which the amendment to the contract, is signed between the prospective owner and the shipbuilder. The amendment to the contract is to be considered as a "new contract" to which **1.** and **2.** above apply.

4. If a contract for construction is amended to change the ship type, the date of "contract for construction" of this modified vessel, or vessels, is the date on which revised contract or new contract is signed between the Owner, or Owners, and the shipbuilder.

Note:
This Procedural Requirement applies from 1 July 2009.

GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

GUIDANCE

Part P Mobile Offshore Drilling Units and Special Purpose Barges

2016 AMENDMENT NO.1

Notice No.39 30th June 2016

Resolved by Technical Committee on 5th February 2016

Notice No.39 30th June 2016
AMENDMENT TO THE GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

"Guidance for the survey and construction of steel ships" has been partly amended as follows:

Part P MOBILE OFFSHORE DRILLING UNITS AND SPECIAL PURPOSE BARGES

P9 HULL EQUIPMENTS

Section P9.6 has been amended as follows.

P9.6 Means of Access

P9.6.1 General

1 For the purpose of **9.6, Part P of the Rules,** appropriate means of access are to be provided to enable close-up examinations of positions where close-up examinations and thickness measurements are required in accordance with the provisions of **Part B of the Rules** and positions with critical structural areas. In application, "critical structural areas" are locations which have been identified from calculations to require monitoring or from the service history of similar or sister ships to be susceptible to cracking, buckling, deformation or corrosion which would impair the structural integrity of the ship. Each space for which close-up inspection is not required such as fuel oil tanks and void spaces forward of cargo area, may be provided with a means of access necessary for overall survey intended to report on the overall conditions of the hull structure.

2 The means of access may be those permanently fixed to the hull, such as stagings, walkways, ladders, and steps (hereinafter, referred to as "permanent means of access") and those that are prepared for temporary use, such as inflatable rafts and portable ladders. Where structural members can be utilized as stagings or walkways, they can be regarded as permanent means of access.

3 For the purpose of **9.6, Part P of the Rules**, the following definitions apply.

(1) Rung means the step of a vertical ladder or step on a vertical surface.

(2) Tread means the step of an inclined ladder or step for a vertical access opening.

(3) Flight of an inclined ladder means the actual stringer length of an inclined ladder. For vertical ladders, it is the distance between the platforms.

(4) Stringer means either:

(a) The frame of a ladder

(b) The stiffened horizontal plating structure fitted on the side shell, transverse bulkheads and/or longitudinal bulkheads in the space

For the purpose of ballast tanks of less than 5 *m* width, the horizontal plating structure is credited as a stringer and a longitudinal permanent means of access, if it provides a continuous passage of 600 *mm* or more in width past frames or stiffeners on the side shell or longitudinal or transverse bulkhead. Openings in stringer plating utilized as permanent means of access shall be arranged with guard rails or grid covers to provide safe passage on the stringer or safe access to each transverse web.

(5) Vertical ladder means a ladder of which the inclined angle is 70 *degrees* and over up to 90 *degrees*. A vertical ladder shall not be skewed by more than 2 *degrees*.

(6) Overhead obstructions mean the deck or stringer structure including stiffeners above the means of access.
(7) Distance below deck head means the distance below the plating.
(8) Cross deck means the transverse area of the main deck which is located inboard and at both sides of a transverse bulkhead. Between large hatches/holds or between moonpool opening and hatches/holds of a drillship or column stabilized unit.
(9) Hold means any dry space other than a machinery space located within the hull of surface units (ship-type or barge-type) and self-elevating units or within the upper hull, columns or pontoons of column-stabilized units. Dry storage spaces and void spaces are considered holds.

4 With respect to the provisions of **9.6.1-2, Part P of the Rules**, the use of alternative means of access may be accepted where:
(1) Such means provide accessibility and safety equivalent to permanent means
(2) The use of such means are approved by the Administration and the ship's owner

P9.6.2 Means of Access to ~~cargo holds, cofferdams, tanks and other s~~Spaces

1 With respect to the provisions of **9.6.2, Part P of the Rules**, the vertical distance between deck and horizontal stringer; horizontal stringers; decks; deck or horizontal stringer and the bottom of the space; deck or horizontal stringer and platform; and platforms means the vertical distance between the upper surface of the lower deck, horizontal stringer or platform and the lower surface of the upper deck, horizontal stringer or platform.

2 With respect to the provisions of **9.6.2, Part P of the Rules**, special attention is to be paid to the structural strength where any access opening is provided in the main deck or cross deck.

3 Means of access required in **9.6.2-1** and **-2, Part P of the Rules** is only applicable to integral tanks. Independent tanks can be excluded. Also, spud cans and jack cases of self-elevating units can be excluded.

4 With respect to the provisions of **9.6.2-2, Part P of the Rules**, the wording "not intended for the carriage of oil or hazardous cargoes" applies only to "similar compartments", and access may be from pump-rooms, deep cofferdams, pipe tunnels, cargo holds and double hull spaces.

5 "Deck" specified in **9.6.2-3, Part P of the Rules** means "weather deck".

6 With respect to the provisions of **9.6.2-4, Part P of the Rules**, where deemed necessary for aligning resting platform arrangements with hull structures, the vertical distance from the deck to a platform, between such platforms, or a platform and the tank bottom may be not more than 6.6 *m*.

7 With respect to the provisions of **9.6.2-4(2)**, **(4)**, **-5(3)** and **(7), Part P of the Rules**, adjacent sections of a vertical ladder are to be in accordance with following **(1)** to **(3)**. (Refer to **Fig. P9.6.2-1**, **Fig. P9.6.2-2** and **Table P9.6.2**)
(1) The minimum "lateral offset" between two adjacent sections of a vertical ladder is the distance between the sections, upper and lower, so that the adjacent stringers are spaced of at least 200 *mm*, measured from half thickness of each stringer.
(2) Adjacent sections of vertical ladder are to be installed so that the upper end of the lower section is vertically overlapped, in respect to the lower end of the upper section, to a height of 1,500 *mm* in order to permit a safe transfer between ladders.
(3) No section of the access ladder is to be terminated directly or partly above an access opening.

Fig. P9.6.2-1 Vertical ladder - ladder passing through linking platform

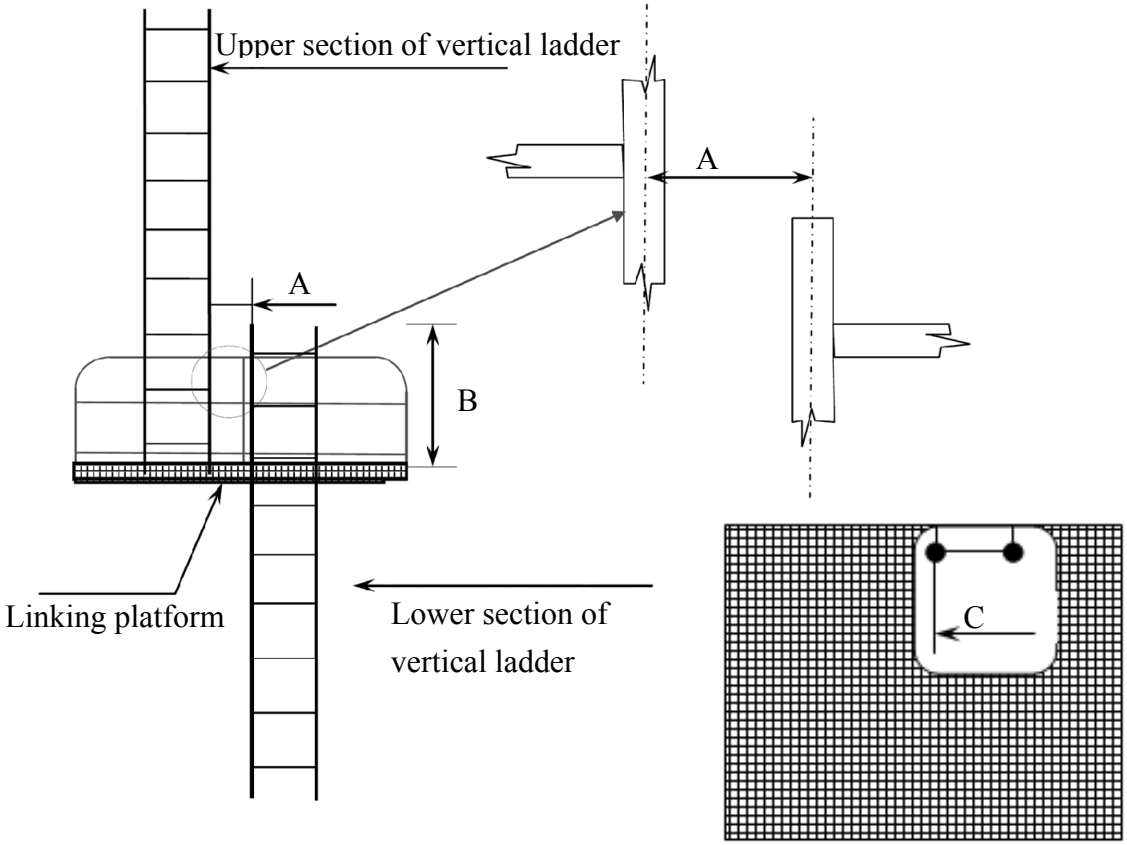


Fig. P9.6.2-2 Vertical ladder - side mount

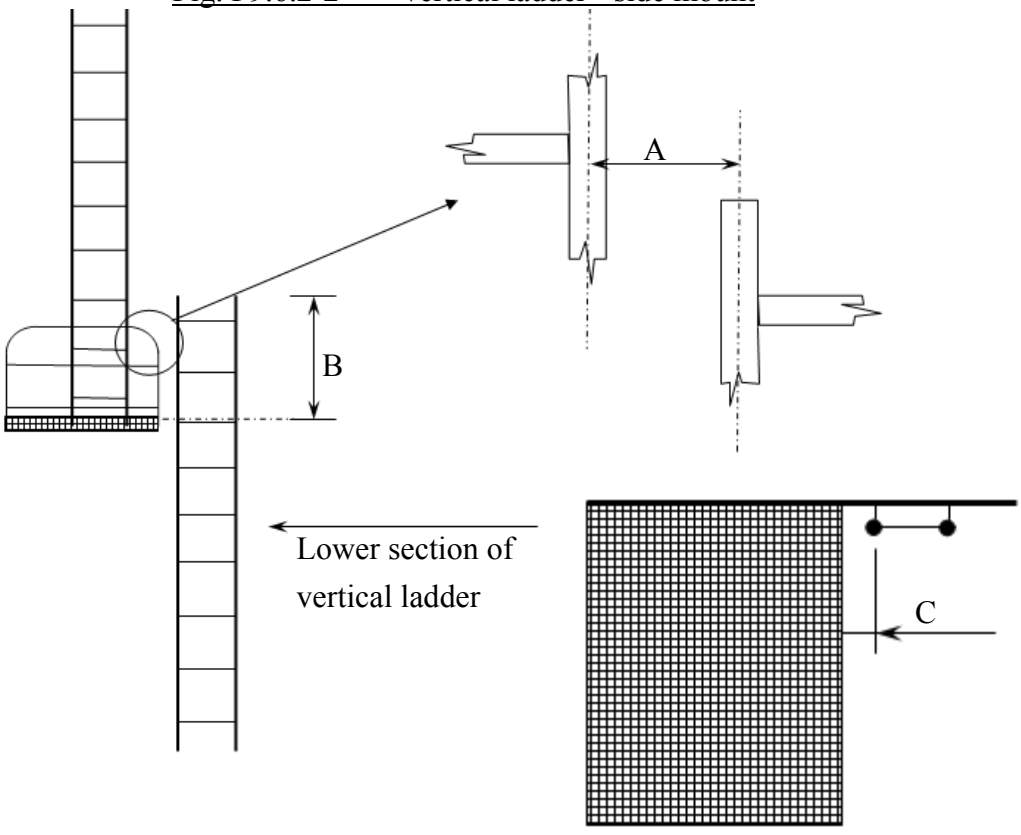


Table P9.6.2 Dimensions

A	Horizontal separation between two vertical ladders, stringer to stringer	≥ 200 *mm*
B	Stringer height above landing or intermediate platform	≥ 1,500* *mm*
C	Horizontal separation between ladder and platform	100 *mm* ≤ C < 300 *mm*
Note * : the minimum height of the handrail of resting platform is 1,000 *mm*		

P9.6.3 Means of Access within Spaces

1 Alternative means of access specified in **9.6.3, Part P of the Rules** include, but are not limited to, such devices as:

(1) Hydraulic arm fitted with a stable base

(2) Wire lift platform

(3) Staging

(4) Rafting

(5) Robot arm or remotely operated vehicle (*ROV*)

(6) Portable ladders more than 5 *m* long are only to be utilized if fitted with a mechanical device to secure the upper end of the ladder. Where hooks for securing at the upper end of a ladder are provided as a mechanical device, such hooks are to be designed so that a movement fore/aft and sideways can be prevented at the upper end of the ladder

(7) Other means of access, approved by and acceptable to the Society

2 With respect to the provisions of **9.6.3, Part P of the Rules**, the selection of an alternative means of access is to be based on the following conditions. Refer to **Annex C35.2.4, Part C of the Guidance** for details.

(1) Such means provide accessibility and safety equivalent to permanent means

(2) Such means are suitable for use in an environment of the intended spaces

(3) Where the use of means such as *ROV* for the inspection of under deck structures, such means can be introduced into the space directly from a deck access

(4) Such means comply with or are based on appropriate safety standards

(5) Where the use of means other than those specified in **P9.6.3-1(3)**, **(4)** or **(6)**, such means are approved by the Administration and the ship's owner

3 Where a boat is used as an alternative means, **C35.1.4-5, Part C of the Guidance** is to apply. Rafts or boats alone may be allowed for survey of the under deck areas for tanks or spaces if the depth of the webs is not more than 1.5 *m*. If the depth of the webs is more than 1.5 *m*, rafts or boats alone may be allowed only if permanent means of access are provided to allow safe entry and exit. This means either:

(1) Access direct from the deck via a vertical ladder and small platform approximately 2 *m* below the deck in each bay

(2) Access to the deck from a longitudinal permanent platform having ladders to the deck at each end of the tank

The platform is to, for the full length of the tank, be arranged at or above the maximum water level needed for rafting of the under deck structure. For this purpose, the ullage corresponding to the maximum water level is to be assumed not more than 3 *m* from the deck plate measured at the midspan of the deck transverses and in the middle of the length of the tank. A permanent means of access from the longitudinal permanent platform to the water level indicated above is to be fitted in each bay (*e.g.*, permanent rungs on one of the deck webs inboard of the longitudinal permanent platform).

4 With respect to the provisions of **9.6.3, Part P of the Rules**, it is to be demonstrated that portable means for inspection can be deployed and made readily available in the areas where needed.

5 For the purpose of **9.6.3**, **Part P of the Rules**, the height of a space means the vertical distance between the top surface of the bottom plate of the space and the lower surface of the top plate of the space. In general, the height is to be measured from the lowest position to the highest position in each tank. However, for a space the height of which varies at different bays/sections, the requirements of **9.6.3, Part P of the Rules** may be applied to such bays/sections of that space which fall under the criteria.

6 With respect to the provisions of **9.6.3, Part P of the Rules**, special attention is to be paid to the structural strength where any access opening is provided in the structural members.

7 Unless stated otherwise in **9.6.3, Part P of the Rules**, vertical ladders that are fitted on vertical structures for inspection are to comprise of one or more ladder linking platforms spaced not more than 6 *m* apart vertically and displaced to one side of the ladder. Adjacent sections of ladder are to be laterally offset from each other by at least the width of the ladder.

8 In the application of **9.6.3-1(1), Part P of the Rules**, the provisions of **(a)** to **(c)** define access to underdeck structures and the provisions of **(d)** to **(f)** define access to vertical structures. These provisions are linked to the presence of underdeck structures and transverse webs on longitudinal bulkheads. If there are no underdeck structures (deck longitudinals and deck transverses) but there are vertical structures in the cargo tank supporting transverse and longitudinal bulkheads (including brackets supporting deck transverses), in addition to access in accordance with applicable provisions of **(d)** to **(f)** of **9.6.3-1(1), Part P of the Rules**, access in accordance with the provisions of **(a)** to **(c)** of **9.6.3-1(1), Part P of the Rules** is to be provided for inspection of the upper parts of vertical structure on transverse and longitudinal bulkheads. For example, there is need to provide continuous longitudinal permanent means of access in accordance with the provisions of **9.6.3-1(1)(b), Part P of the Rules** when the deck longitudinals and deck transverses are fitted on the deck but supporting brackets are fitted under the deck.

9 Notwithstanding **-1**, for the application of **9.6.3-1(1)(d), Part P of the Rules**, wire lift platforms or other means which can provide an equal level of safety as permanent means of access specified in that sub-paragraph, are assumed as alternative means of access. However, rafting and permanent fittings for rafting are not permitted as alternatives to the continuous longitudinal permanent means of access specified in **P9.6.3-1(2)**.

10 For tanks containing oil products other than crude oil (e.g. fuel oil, diesel oil, base oil) where lower corrosion is expected, **(1)** and **(2)** of **9.6.3-1, Part P of the Rules** is not to be applied. For tanks containing products considered corrosive (e.g. brine, drilling mud), **(1)** and **(2)** of **9.6.3-1, Part P of the Rules** is to be applied.

11 "Means of access deemed appropriate by the Society" stipulated in **9.6.3-1(4), Part P of the Rules** generally presumes the use of boats. The provisions of **-3** above apply.

12 For the purpose of **9.6.3-2, Part P of the Rules**, the continuous permanent means of access may be a wide longitudinal, which provides access to critical details on the opposite side by means of platforms attached as necessary on the web frames. Where the vertical opening of the web frame is located in way of the open part between the wide longitudinal and the longitudinal on the opposite side, platforms are to be provided on both sides of the web frames to allow safe passage through the web frame.

13 With respect to the vertical distance of 6 *m* specified in **9.6.3-2(1)(a)** and **(b), Part P of the Rules**, excess of not more than 10% may be accepted as a reasonable deviation, where deemed necessary for the integration of the permanent means of access with the structure itself.

14 Means of access specified in **9.6.3-2(1)(a), Part P of the Rules** are to be connected to an access ladder from the deck required in **9.6.2-1, Part P of the Rules**. Where two access hatches are required, access ladders at each end of the tank are to lead to the means of access.

15 With respect to the provisions of **9.6.3-2(2), Part P of the Rules**, notwithstanding the provisions of **-5**, the height of a bilge hopper tank located outside of the parallel part of the ship

may be taken as the maximum of the clear vertical distance measured from the bottom plating to the hopper plating of the tank.

16 With respect to the provisions of **9.6.3-2(2), Part P of the Rules** in regards to the foremost and aftermost bilge hopper ballast tanks with raised bottoms, a combination of transverse and vertical means of access for access to the upper knuckle point for each transverse web may be accepted in place of the longitudinal permanent means of access.

17 With respect to the provisions of **9.6.3-2(2), Part P of the Rules**, a ladder or ladders are to be provided between the longitudinal continuous permanent means of access and the bottom of the space.

18 The movable means of access to the underdeck structure of the cross deck required in **9.6.3-3(4), Part P of the Rules** need not necessarily be carried aboard the ship.

P9.6.4 Specifications for Means of Access and Ladders

1 With respect to the provisions of **9.6.4-1, Part P of the Rules**, permanent means of access are to be designed so as to ensure sufficient residual strength during the service life of the ship and, in general, the initial corrosion protection which is the same as the hull structural members is to be applied.

2 With respect to the provisions of **9.6.4-3, Part P of the Rules**, slopping structures are structures that are sloped by 5 or more degrees from the horizontal plane when a ship is in the upright position at even-keel. Non-skid construction is to be such that the surface on which personnel walk provides sufficient friction to the sole of boots even when the surface is wet and covered with thin sediment.

3 Details of the guard rails required in **9.6.4-4, Part P of the Rules** are to be in accordance with the following.

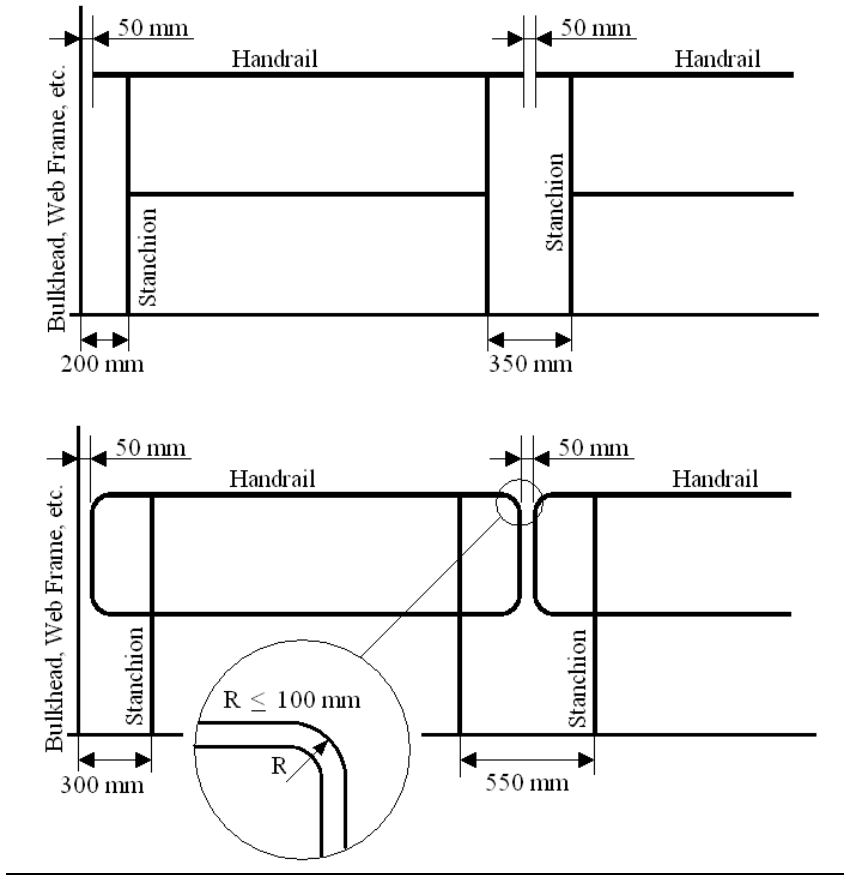
(1) Where guard rails are divided into several parts, the gaps of discontinuous top handrail are not to exceed 50 *mm*. When the top and mid handrails are connected by a bent rail, the outside radius of the bent part is not to exceed 100 *mm* (see **Fig. P9.6.4-1**).

(2) The gaps between the top handrail and other structural members are not to exceed 50 *mm*.

(3) Where guard rails are divided into several parts, the maximum distance between the adjacent stanchions across the handrail gaps is to be 350 *mm*. However, when the top and mid handrails are connected together, the maximum distance may be 550 *mm* (see **Fig. P9.6.4-1**).

(4) The maximum distance between the stanchion and other structural members is not to exceed 200 *mm*. However, when the top and mid handrails are connected together, the maximum distance may be 300 *mm* (see **Fig. P9.6.4-1**).

Fig. P9.6.4-1 Detail of handrails



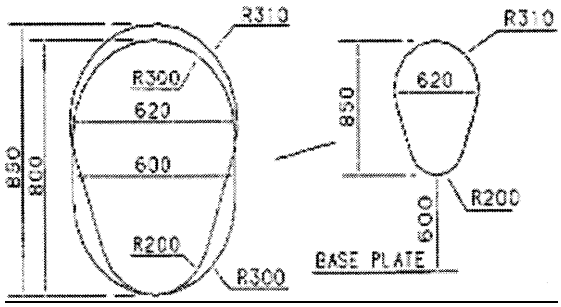
4 For guard rails required in **9.6.4-4, Part P of the Rules**, use of alternative materials such as *GRP* is to be subject to compatibility with the liquid carried in the tank. Non-fire resistant materials are not to be used for means of access to a space with a view to securing an escape route at high temperatures.

5 The minimum clear opening of 600 *mm* × 600 *mm* specified in **9.6.4-5, Part P of the Rules** is to be rounded appropriately and may have corner radii up to 100 *mm* maximum. Where larger corner radii are adopted for avoiding stress concentration, a larger opening is to be provided so as to ensure accessibility equivalent to a opening of 600 *mm* × 600 *mm*. For example, 600 *mm* × 800 *mm* with 300 *mm* of corner radii may be accepted.

6 The minimum clear opening of 600 *mm* × 800 *mm* specified in **9.6.4-6, Part P of the Rules** is to be rounded appropriately and may have corner radii up to 300 *mm* maximum. Such openings, in general, are to be 800 *mm* in height. However, an opening of 600 *mm* in height and 800 *mm* in width may be accepted as access openings in vertical structures where it is not desirable to make large openings in the structural strength aspects, i.e. girders and floors in double bottom tanks.

7 With respect to the provisions of **9.6.4-6, Part P of the Rules**, an access opening having other dimensions, i.e. an opening as shown in **Fig. P9.6.4-2**, may be accepted subject to verification of easy evacuation of an injured person on a stretcher.

Fig. P9.6.4-2 Example of vertical opening



8 With respect to the provisions of **9.6.4-6, Part P of the Rules**, where the vertical manhole is at a height of more than 600 *mm* above the bottom plate, it is to be demonstrated that an injured person can be easily evacuated.

9 Smaller dimensions of minimum clear opening stipulated in **9.6.4-7, Part P of the Rules** are to be in accordance with **Table S3.4.4, Part S of the Guidance**.

10 With respect to the provisions of **9.6.4-8, Part P of the Rules**, where the vertical manhole is at a height of more than 600 *mm* above the bottom plate, it is to be demonstrated that an injured person can be evacuated.

11 With respect to the provisions of **9.6.4-9, Part P of the Rules**, details of ladders and other means are to be in accordance with the following.

(1) Permanent inclined ladders are to be inclined at an angle of less than 70 *degrees*. There is to be no obstructions within 750 *mm* of the face of the inclined ladder, except that in way of an opening this clearance may be reduced to 600 *mm*. Such clearance is to be measured perpendicular to the face of the ladder. A minimum climbing clearance in width is to be 600 *mm*. For this purpose, handrails may be provided within such climbing clearance. Resting platforms of adequate dimensions are to be provided, normally at a maximum of 6 *m* vertical height. Where deemed necessary for aligning resting platform arrangements with hull structures, the vertical distance from deck to such platforms, between such platforms or such platforms and the tank bottom may be not more than 6.6 *m*. In this case, the flights of inclined ladders are not to be more than 9 *m* in actual length. Ladders and handrails are to be constructed of steel or equivalent material of adequate strength and stiffness and securely attached to the structure by stays. The method of support and length of stay is to be such that vibration is reduced to a practical minimum. In holds, ladders are to be designed and arranged so that stores handling difficulties are not increased and the risk of damage from stores handling gear is minimized.

(2) The width of inclined ladders between stringers is not to be less than 400 *mm*. The width of inclined ladders for access to a hold is to be at least 450 *mm*. The treads are to be equally spaced at a distance apart, measured vertically, of between 200 *mm* and 300 *mm*. When steel is used, the treads are to be formed of two square bars of not less than 22 *mm* × 22 *mm* in section, fitted to form a horizontal step with the edges pointing upward. The treads are to be carried through the side stringers and attached thereto by double continuous welding. All inclined ladders are to be provided with handrails of substantial construction on both sides. The vertical height of handrails is not to be less than 890 *mm* from the centre of the step and two course handrails is to be provided.

(3) For vertical ladders, the width and construction are to be in accordance with the following. Other details are to be in accordance with international or national standards accepted by the Society.

(a) The minimum width of vertical ladders is to be 350 *mm*.

(b) The vertical distance between the rungs is to be equal and is to be between 250 *mm* and 350 *mm*.

(c) When steel is used, the rungs are to be formed of single square bars of not less than 22 *mm* × 22 *mm* in section, fitted to form a horizontal step with the edges pointing upward.

(d) Vertical ladders are to be secured at intervals not exceeding 2.5 *m* apart to prevent vibration.

(e) A minimum climbing clearance in width is to be 600 *mm* other than the ladders placed between the hold frames. A clearance of 600 *mm* perpendicular to the ladder is to be kept as far as possible.

(4) For spiral ladders, the width and construction are to be in accordance with international or national standards accepted by the Society.

(5) Resting platforms placed between ladders are to follow the provisions of **9.6.4-1** to **-4, Part P of the Rules**.

(6) Portable ladders are to be in accordance with or are based on appropriate safety standards. No free-standing portable ladder is to be more than 5 *m* long unless accepted by the provisions of **P9.6.3-1(6)**.

(7) For the selection of portable and movable means of access, refer to **Annex C35.2.4 of the Guidance**.

P9.6.5 Ship Structure Access Manual

1 The Ship Structure Access Manual required in **9.6.5, Part P of the Rules** is to contain at least the following two parts.

(1) Part I

This part is to comprise plans, instructions and inventory required in **9.6.5-1(1)** to **(7), Part P of the Rules** and the following matters are to be addressed. This part is to be approved by the Society when any content is changed.

(a) Approval/re-approval procedure for the manual, i.e. any changes of the permanent, portable, movable or alternative means of access within the scope of **9.6, Part P of the Rules** are subject to review and approval by the Society.

(b) Verification of means of access is to be part of a survey for continued effectiveness of the means of access in that space which is subject to the survey.

(c) Inspection of means of access is to be carried out by the crew and/or a competent inspector of the company as a part of regular inspection and maintenance.

(d) Actions to be taken if means of access are found unsafe to use.

(e) In case of use of portable equipment, plans showing the means of access within each space indicating from where and how each area in the space can be inspected.

(2) Part II

This part is to comprise of forms for record of inspections and maintenance, and change of inventory of portable equipment due to additions or replacements after construction. The form in this part is approved by the Society when the ship is under survey for classification during construction.

2 The Ship Structure Access Manual required in **9.6.5-1, Part P of the Rules** is to be prepared in a language(s) which all the crew can understand. As a minimum the English version is to be provided.

3 "Critical structural areas" specified in **9.6.5-1(3), Part P of the Rules** are to be in accordance with the provisions of **P9.6.1-1**.

EFFECTIVE DATE AND APPLICATION

1. The effective date of the amendments is 1 July 2016.

2. Notwithstanding the amendments to the Guidance, the current requirements may apply to ships for which the date of contract for construction* is before the effective date.

* "contract for construction" is defined in the latest version of IACS Procedural Requirement (PR) No.29.

IACS PR No.29 (Rev.0, July 2009)

1. The date of "contract for construction" of a vessel is the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. This date and the construction numbers (i.e. hull numbers) of all the vessels included in the contract are to be declared to the classification society by the party applying for the assignment of class to a newbuilding.

2. The date of "contract for construction" of a series of vessels, including specified optional vessels for which the option is ultimately exercised, is the date on which the contract to build the series is signed between the prospective owner and the shipbuilder.

For the purpose of this Procedural Requirement, vessels built under a single contract for construction are considered a "series of vessels" if they are built to the same approved plans for classification purposes. However, vessels within a series may have design alterations from the original design provided:

(1) such alterations do not affect matters related to classification, or

(2) If the alterations are subject to classification requirements, these alterations are to comply with the classification requirements in effect on the date on which the alterations are contracted between the prospective owner and the shipbuilder or, in the absence of the alteration contract, comply with the classification requirements in effect on the date on which the alterations are submitted to the Society for approval.

The optional vessels will be considered part of the same series of vessels if the option is exercised not later than 1 year after the contract to build the series was signed.

3. If a contract for construction is later amended to include additional vessels or additional options, the date of "contract for construction" for such vessels is the date on which the amendment to the contract, is signed between the prospective owner and the shipbuilder. The amendment to the contract is to be considered as a "new contract" to which **1.** and **2.** above apply.

4. If a contract for construction is amended to change the ship type, the date of "contract for construction" of this modified vessel, or vessels, is the date on which revised contract or new contract is signed between the Owner, or Owners, and the shipbuilder.

Note:
This Procedural Requirement applies from 1 July 2009.