

**MODU 1**  
(May 2015)  
(Rev.1 Oct 2015)  
(Corr.1 June 2016)

**IACS Unified Interpretations for the application of MODU Code Chapter 2 paragraphs 2.1, 2.2, 2.3, 2.4 and revised technical provisions for means of access for inspections (resolution MSC.158(78))**

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Note:

1. This Unified Interpretation is to be applied by IACS Societies on units contracted for construction from 1 July 2016, unless they are provided with written instructions to apply a different interpretation by the Administration on whose behalf they are authorized to act as a Recognized Organization.
2. Rev.1 is to be applied by IACS Societies on units contracted for construction from 1 January 2017, unless they are provided with written instructions to apply a different interpretation by the Administration on whose behalf they are authorized to act as a Recognized Organization.
3. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

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**2009 MODU Code, section 2.2.2**

**2.2.2 Safe access to holds, tanks, ballast tanks and other spaces**

2.2.2.1 Safe access to holds, cofferdams, tanks and other spaces should 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.

2.2.2.2 Tanks, and subdivisions of tanks, having a length of 35 m or more, should be fitted with at least two access hatchways and ladders, as far apart as practicable. Tanks less than 35 m in length should be served by at least one access hatchway and ladder. 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 should be fitted.

**Interpretation**

This regulation is only applicable to integral tanks. Independent tanks can be excluded. Also, spud cans and jack cases of self-elevating units can be excluded.

The wording "not intended for the carriage of oil or hazardous materials" applies only to "similar compartments", i.e. safe access can be through a pump-room, deep cofferdam, pipe tunnel, cargo hold or double hull space.

**Technical Background**

Means of Access (MA) specified in the Technical provisions contained in resolution MSC.158(78) are not specific with respect to the application to integral tanks or also to independent tanks. The MA regulated under 2.2.1.1 of the 2009 IMO MODU Code is for overall and close-up inspections and thickness measurements of the unit's structure. Independent tanks are not considered part of the unit's structure. Therefore it is assumed that the target tanks are integral tanks.

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### **2009 MODU Code, section 2.2.1.2**

2.2.1.2 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 Administration may allow, in lieu thereof, the provision of movable or portable means of access, as specified in the Technical provisions, 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 equipment shall be capable of being readily erected or deployed by unit's personnel.

#### **Interpretation**

Some possible alternative means of access are listed under paragraph 3.9 of the MODU Technical Provisions for means of access for inspection (MODU TP). Always subject to acceptance as equivalent by the Administration, alternative means such as an unmanned robot arm, ROV's with necessary equipment of the permanent means of access for overall and close-up inspections and thickness measurements of the deck head structure such as deck transverses and deck longitudinals of ballast tanks and other tanks, holds and other spaces where gas hazardous atmosphere may be present, are to be capable of:

- safe operation in ullage space in gas-free environment;
- introduction into the place directly from a deck access.

When considering use of alternative means of access as addressed by paragraph 3.9 of the MODU TP, refer to IACS Recommendation No.91 "Guidelines for Approval/Acceptance of Alternative Means of Access".

#### **Technical Background**

Innovative approaches, in particular a development of robot in place of elevated passageways, are encouraged and it is considered worthwhile to provide the functional requirement for the innovative approach.

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### 2009 MODU Code, section 2.2.1.3

2.2.1.3 The construction and materials of all means of access and their attachment to the unit's structure should be to the satisfaction of the Administration. The means of access should be subject to inspection prior to, or in conjunction with, its use in carrying out surveys in accordance with section 1.6.

#### Interpretation

Note: This interpretation is to be contained in a section of the MA Manual.

#### Inspection

The MA arrangements, including portable equipment and attachments, are to be periodically inspected by the crew or competent inspectors as and when it is going to be used to confirm that the MAs remain in serviceable condition.

#### Procedures

1. Any Company authorised person using the MA shall assume the role of inspector and check for obvious damage prior to using the access arrangements. Whilst using the MA the inspector is to verify the condition of the sections used by close up examination of those sections and note any deterioration in the provisions. Should any damage or deterioration be found, the effect of such deterioration is to be assessed as to whether the damage or deterioration affects the safety for continued use of the access. Deterioration found that is considered to affect safe use is to be determined as "substantial damage" and measures are to be put in place to ensure that the affected section(s) are not to be further used prior effective repair.
2. Statutory survey of any space that contains MA shall include verification of the continued effectiveness of the MA in that space. Survey of the MA shall not be expected to exceed the scope and extent of the survey being undertaken. If the MA is found deficient the scope of survey is to be extended if this is considered appropriate.
3. Records of all inspections are to be established based on the requirements detailed in the MODU's Safety Management System. The records are to be readily available to persons using the MAs and a copy attached to the MA Manual. The latest record for the portion of the MA inspected is to include as a minimum the date of the inspection, the name and title of the inspector, a confirmation signature, the sections of MA inspected, verification of continued serviceable condition or details of any deterioration or substantial damage found. A file of permits issued is to be maintained for verification.

#### Technical Background

It is recognised that MA may be subject to deterioration in the long term due to corrosive environment and external forces from unit motions and sloshing of liquid contained in the tank. MA therefore is to be inspected at every opportunity of tank/space entry.

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**2009 MODU Code, paragraph 2.2.2.2**

2.2.2.2 Tanks, and subdivisions of tanks, having a length of 35 m or more, should be fitted with at least two access hatchways and ladders, as far apart as practicable. Tanks less than 35 m in length should be served by at least one access hatchway and ladder. 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 should be fitted.

**Interpretation**

A tank of less than 35 m length without a swash bulkhead requires only one access hatch.

Where rafting is indicated in the access manual as the means to gain ready access to the under deck structure, the term “*similar obstructions*” referred to in the regulation includes internal structures (e.g., webs >1.5m deep) which restrict the ability to raft (at the maximum water level needed for rafting of under deck structure) directly to the nearest access ladder and hatchway to deck. When rafts or boats alone, as an alternative means of access are allowed, permanent means of access are to be provided to allow safe entry and exit. This means:

- a) access direct from the deck via a vertical ladder and small platform fitted approximately 2m below the deck in each bay; or
- b) access to deck from a longitudinal permanent platform having ladders to deck in each end of the tank. The platform shall, for the full length of the tank, be arranged in level with, or above, the maximum water level needed for rafting of under deck structure. For this purpose, the ullage corresponding to the maximum water level is to be assumed not more than 3m from the deck plate measured at the midspan of deck transverses and in the middle 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).

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**2009 MODU Code, section 2.2.3**

**2.2.3 Access manual**

2.2.3.1 A unit's means of access to carry out overall and close-up inspections and thickness measurements should be described in an access manual which may be incorporated in the unit's operating manual. The manual should be updated as necessary, and an updated copy maintained on board. The access manual should include the following for each space:

- .1.1 plans showing the means of access to the space, with appropriate technical specifications and dimensions;
- .1.2 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 should indicate from where each area in the space can be inspected;
- .1.3 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 should indicate the positions of critical structural areas, whether the means of access is permanent or portable and from where each area can be inspected;
- .1.4 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;
- .1.5 instructions for safety guidance when rafting is used for close-up inspections and thickness measurements;
- .1.6 instructions for the rigging and use of any portable means of access in a safe manner;
- .1.7 an inventory of all portable means of access; and
- .1.8 records of periodical inspections and maintenance of the unit's means of access.

**Interpretation**

The access manual is to address spaces listed in section 2.2.2.

As a minimum the English version is to be provided.

The access manual is to contain at least the following two parts:

Part 1: Plans, instructions and inventory required by paragraphs .1.1 to .1.7 of section 2.2.3.1. This part is to be approved by the Administration or the organization recognised by the Administration.

Part 2: Form of record of inspections and maintenance, and change of inventory of portable equipment due to additions or replacement after construction. This part is to be approved for its form only at new building.

The following matters are to be addressed in the access manual:

1. The access manual is to clearly cover scope as specified in the regulations for use by crews, surveyors and port State control officers.

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2. 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 the regulation and the Technical provisions are subject to review and approval by the Administration or by the organization recognised by the Administration.
3. Verification of MA is to be part of safety construction survey for continued effectiveness of the MA in that space which is subject to the statutory survey.
4. Inspection of MA by the crew and/or a competent inspector of the company as a part of regular inspection and maintenance (see interpretation for section 2.2.1.3).
5. Actions to be taken if MA is found unsafe to use.
6. 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.

Refer to IACS Recommendation No.90 "Ship Structural Access Manual"

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**2009 MODU Code, section 2.2.3.2**

2.2.3.2 For the purpose of this paragraph “critical structural areas” are locations which have been identified from calculations to require monitoring or from the service history of similar or sister units to be sensitive to cracking, buckling, deformation or corrosion which would impair the structural integrity of the unit.

**Interpretation**

Critical structural areas are to be identified by advanced calculation techniques for structural strength and fatigue performance, if available, and feed back from the service history and design development of similar or sister units.



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**2009 MODU Code, section 2.2.4.1**

**2.2.4 General technical specifications**

2.2.4.1 For access through horizontal openings, hatches or manholes, the dimensions should 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 should not be less than 600 mm x 600 mm. When access to a hold is arranged through a flush manhole in the deck or a hatch, the top of the ladder should be placed as close as possible to the deck or hatch coaming. Access hatch coamings having a height greater than 900 mm should also have steps on the outside in conjunction with the ladder.

**Interpretation**

The minimum clear opening of 600 mm x 600 mm may have corner radii up to 100 mm maximum. The clear opening is specified in MSC/Circ.686 to keep the opening fit for passage of personnel wearing a breathing apparatus. In such a case where as a consequence of structural analysis of a given design the stress is to be reduced around the opening, it is considered appropriate to take measures to reduce the stress such as making the opening larger with increased radii, e.g. 600 x 800 with 300 mm radii, in which a clear opening of 600 x 600 mm with corner radii up to 100mm maximum fits.

**Technical Background**

The interpretation is based upon the established Guidelines in MSC/Circ.686.

**Ref.**

Paragraphs 9 of Annex of MSC/Circ.686.

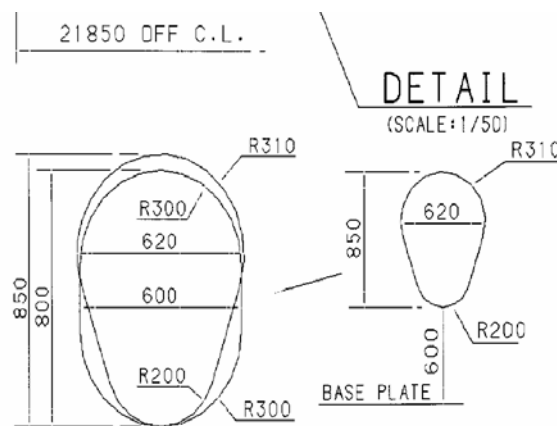
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2009 MODU Code, section 2.2.4.2

2.2.4.2 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 clear opening should be not less than 600 mm x 800 mm at a height of not more than 600 mm from the bottom shell plating unless gratings or other foot holds are provided.

**Interpretation**

1. The minimum clear opening of not less than 600 mm x 800 mm may also include an opening with corner radii of 300 mm. An opening of 600mm in height x 800mm in width may be accepted as access openings in vertical structures where it is not desirable to make large opening in the structural strength aspects, i.e. girders and floors in double bottom tanks.
2. Subject to verification of easy evacuation of injured person on a stretcher the vertical opening 850 mm x 620 mm with wider upper half than 600 mm, while the lower half may be less than 600 mm with the overall height not less than 850 mm is considered an acceptable alternative to the traditional opening of 600 mm x 800 mm with corner radii of 300 mm.



3. If a vertical opening is at a height of more than 600 mm steps and handgrips are to be provided. In such arrangements it is to be demonstrated that an injured person can be easily evacuated.

**Technical Background**

The interpretation is based upon the established Guidelines in MSC/Circ.686 and an innovative design is considered for easy access by humans through the opening.

**Ref.**

Paragraphs 11 of Annex of MSC/Circ.686.

**Appendix 1****Unified Interpretation of IMO Resolution MSC. 133(76), as amended by resolution MSC. 158(78), as applicable for MODUs**

Note: This document has been derived from IMO Resolution 133(76) for the purpose of interpretation for Mobile Offshore Drilling Units.

**1. Preamble**

1.1 It has long been recognized that the only way of ensuring that the condition of a MODU's structure is maintained to conform to the applicable requirements is for all its components to be surveyed on a regular basis throughout their operational life. This will ensure that they are free from damage such as cracks, buckling or deformation due to corrosion, overloading, or contact damage and that thickness diminution is within established limits. The provision of suitable means of access to the hull structure for the purpose of carrying out overall and close-up surveys and inspections is essential and such means should be considered and provided for at the design stage.

1.2 MODUs should be designed and built with due consideration as to how they will be surveyed by flag State inspectors and classification society surveyors during their in-service life and how the crew will be able to monitor the condition of the MODU. Without adequate access, the structural condition of the MODU can deteriorate undetected and major structural failure can arise. A comprehensive approach to design and maintenance is required to cover the whole projected life of the MODU.

1.3 In order to address this issue these Technical provisions for means of access for inspections have been developed (hereinafter called the Technical provisions), intended to facilitate close-up inspections and thickness measurements of the MODU's structure referred to in 2009 MODU Code, paragraph 2.2 on Access.

1.4 Permanent means of access which are designed to be integral parts of the structure itself are preferred and Administrations may allow reasonable deviations to facilitate such designs.

**Interpretation**

In the context of the above requirement, the deviation shall be applied only to distances between integrated PMA that are the subject of paragraph 2.1.2 of Table 1.

Deviations should not be applied to the distances governing the installation of underdeck longitudinal walkways and dimensions that determine whether permanent access are required or not, such as height of the spaces and height to elements of the structure (e.g. cross-ties).

**2. Definitions**

For the purpose of these Technical provisions, the following definitions apply in addition to those provided in the 2009 MODU Code, as amended:

- .1 Rung means the step of a vertical ladder or step on the vertical surface.
- .2 Tread means the step of an inclined ladder or step for the vertical access opening.

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- .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:
  - .1 the frame of a ladder; or
  - .2 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° and over up to 90°. A vertical ladder shall not be skewed by more than 2°.
- .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 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.

### **3. Technical provisions**

3.1 Structural members subject to the close-up inspections and thickness measurements of the MODU's structure referred to in 2009 MODU Code, section 2.2, except those in double bottom spaces, shall be provided with a permanent means of access to the extent as specified in table 1. Approved alternative methods may be used in combination with the fitted permanent means of access, provided that the structure allows for its safe and effective use.

#### **Interpretation**

The permanent means of access to a space can be credited for the permanent means of access for inspection.

#### **Technical Background**

The Technical provisions specify means of access to a space and to hull structure for carrying out overall and close up surveys and inspections. Requirements of MA to hull structure may not always be suitable for access to a space. However if the MA for access to a space can also be used for the intended surveys and inspections such MA can be credited for the MA for use for surveys and inspections.

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3.2 Permanent means of access should as far as possible be integral to the structure of the MODU, thus ensuring that they are robust and at the same time contributing to the overall strength of the structure of the MODU.

3.3 Elevated passageways forming sections of a permanent means of access, where fitted, shall 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. Sloping structures providing part of the access shall be of a non-skid construction. Guard rails shall be 1,000 mm in height and consist of a rail and an intermediate bar 500 mm in height and of substantial construction. Stanchions shall be not more than 3 m apart.

**Interpretation**

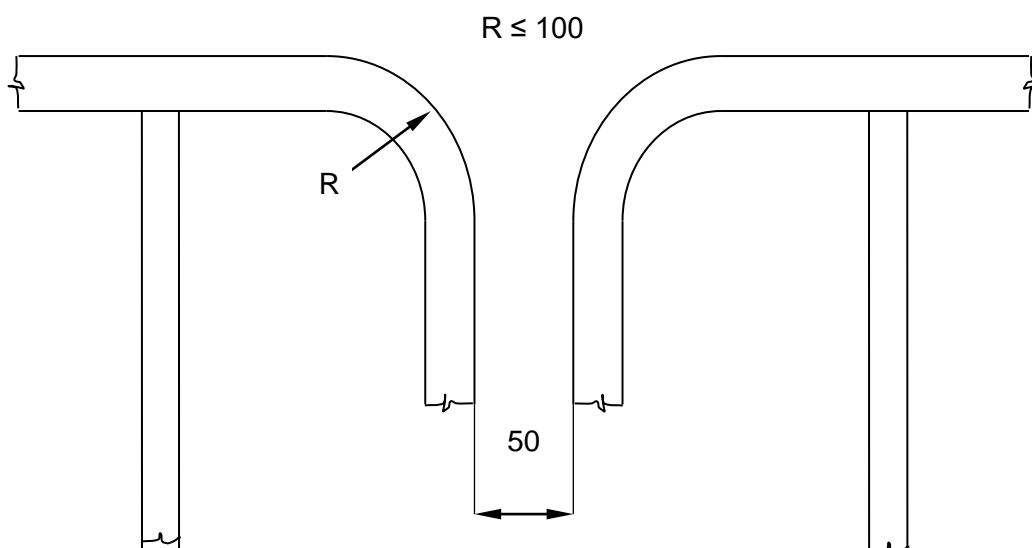
1. Sloping structures are structures that are sloped by 5 or more degrees from horizontal plane when a unit is in upright position at even-keel.
2. Guard rails are to be fitted on the open side. For stand alone passageways guard rails are to be fitted on both sides of these structures.
3. Discontinuous top handrails are allowed, provided the gap does not exceed 50 mm.

The same maximum gap is to be considered between the top handrail and other structural members (i.e. bulkhead, web frame, etc.).

The maximum distance between the adjacent stanchions across the handrail gaps is to be 350 mm where the top and mid handrails are not connected together and 550 mm when they are connected together.

The maximum distance between the stanchion and other structural members is not to exceed 200 mm where the top and mid handrails are not connected together and 300 mm when they are connected together.

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 Figure below).



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4. Non-skid construction is such that the surface on which personnel walks provides sufficient friction to the sole of boots even if the surface is wet and covered with thin sediment.
5. "Substantial construction" is taken to refer to the designed strength as well as the residual strength during the service life of the unit. Durability of passageways together with guard rails is to be ensured by the initial corrosion protection and inspection and maintenance during services.
6. For guard rails, 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 a high temperature.
7. Requirements for resting platforms placed between ladders are equivalent to those applicable to elevated passageways.

**Ref.**

Paragraph 10 of Annex to MSC/Circ.686

3.4 Access to permanent means of access and vertical openings from the MODU's bottom shall be provided by means of easily accessible passageways, ladders or treads. Treads shall 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 shall be at least 150 mm. Where vertical manholes are fitted higher than 600 mm above the walking level, access shall be facilitated by means of treads and hand grips with platform landings on both sides.

**Interpretation**

Where the vertical manhole is at a height of more than 600 mm above the walking level, it shall be demonstrated that an injured person can be easily evacuated.

3.5 Permanent inclined ladders shall be inclined at an angle of less than 70°. There shall 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. Resting platforms of adequate dimensions shall be provided, normally at a maximum of 6 m vertical height. Ladders and handrails shall 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 shall be such that vibration is reduced to a practical minimum. In holds, ladders shall be designed and arranged so that stores handling difficulties are not increased and the risk of damage from stores handling gear is minimized.

***MA for access to ballast tanks and other tanks:***

1. Tanks and subdivisions of tanks having a length of 35 m or more with two access hatchways:

First access hatchway: Inclined ladder or ladders are to be used.

Second access hatchway:

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- i. A vertical ladder may be used. In such a case where the vertical distance is more than 6 m, vertical ladders are to comprise one or more ladder linking platforms spaced not more than 6 m apart vertically and displaced to one side of the ladder.

The uppermost section of the vertical ladder, measured clear of the overhead obstructions in way of the tank entrance, is not to be less than 2.5 m but not exceed 3.0 m and is to comprise a ladder linking platform which is to be displaced to one side of a vertical ladder. However, the vertical distance of the upper most section of the vertical ladder may be reduced to 1.6 m, measured clear of the overhead obstructions in way of the tank entrance, if the ladder lands on a longitudinal or athwartship permanent means of access fitted within that range; or

- ii. Where an inclined ladder or combination of ladders is used for access to the space, the uppermost section of the ladder, measured clear of the overhead obstructions in way of the tank entrance, is to be vertical for not less than 2.5 m but not exceed 3.0m and is to comprise a landing platform continuing with an inclined ladder. However, the vertical distance of the upper most section of the vertical ladder may be reduced to 1.6 m, measured clear of the overhead obstructions in way of the tank entrance, if the ladder lands on a longitudinal or athwartship permanent means of access fitted within that range. The flights of the inclined ladders are normally to be not more than 6 m in vertical height. The lowermost section of the ladders may be vertical for the vertical distance not exceeding 2.5 m.

2. Tanks less than 35 m in length and served by one access hatchway an inclined ladder or combination of ladders are to be used to the space as specified in 1.ii above.

3. In double hull spaces of less than 2.5 m width the access to the space may be by means of vertical ladders that comprises one or more ladder linking platforms spaced not more than 6 m apart vertically and displaced to one side of the ladder. The uppermost section of the vertical ladder, measured clear of the overhead obstructions in way of the tank entrance, is not to be less than 2.5 m but not exceed 3.0 m and is to comprise a ladder linking platform which is to be displaced to one side of a vertical ladder. However, the vertical distance of the upper most section of the vertical ladder may be reduced to 1.6 m, measured clear of the overhead obstructions in way of the tank entrance, if the ladder lands on a longitudinal athwartship permanent means of access fitted within that range. Adjacent sections of the ladder are to be laterally offset from each other by at least the width of the ladder (see paragraph 20 of MSC/Circ.686).

4. Access from deck to a double bottom space may be by means of vertical ladders through a trunk. The vertical distance from deck to a resting platform, between resting platforms or a resting platform and the tank bottom is not to be more than 6 m unless otherwise approved by the Administration.

***MA for inspection of the vertical structure:***

Vertical ladders provided for means of access to the space may be used for access for inspection of the vertical structure.

Unless stated otherwise in Table 1 of MODU TP, vertical ladders that are fitted on vertical structures for inspection are to comprise one or more ladder linking platforms spaced not more than 6 m apart vertically and displace 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 (paragraph 20 of MSC/Circ.686).

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### ***Obstruction distances***

The minimum distance between the inclined ladder face and obstructions, i.e. 750 mm and, in way of openings, 600 mm specified in MODU TP 3.5 is to be measured perpendicular to the face of the ladder.

### **Technical Background**

It is a common practice to use a vertical ladder from deck to the first landing to clear overhead obstructions before continuing to an inclined ladder or a vertical ladder displaced to one side of the first vertical ladder.

### **Ref.**

For vertical ladders: Paragraph 20 of the annex to MSC/Circ.686.

3.6 The width of inclined ladders between stringers shall not be less than 400 mm. The treads shall be equally spaced at a distance apart, measured vertically, of between 200 mm and 300 mm. When steel is used, the treads shall be formed of two square bars of not less than 22 mm by 22 mm in section, fitted to form a horizontal step with the edges pointing upward. The treads shall be carried through the side stringers and attached thereto by double continuous welding. All inclined ladders shall be provided with handrails of substantial construction on both sides, fitted at a convenient distance above the treads.

### **Interpretation**

1. Vertical height of handrails is not to be less than 890 mm from the centre of the step and two course handrails are to be provided.
2. The requirement of two square bars for treads specified in MODU TP, paragraph 3.6, is based upon the specification of construction of ladders in paragraph 3(e) of Annex 1 to resolution A.272(VIII), which addresses inclined ladders. MODU TP, paragraph 3.4, allows for single rungs fitted to vertical surfaces, which is considered for a safe grip. For vertical ladders, when steel is used, the rungs are to be formed of single square bars of not less than 22 mm by 22 mm for the sake of safe grip.
3. The width of inclined ladders for access to a hold is to be at least 450 mm to comply with the Australian AMSA Marine Orders Part 32, Appendix 17.
4. The width of inclined ladders other than an access to a hold is to be not less than 400 mm.
5. The minimum width of vertical ladders is to be 350 mm and the vertical distance between the rungs is to be equal and is to be between 250 mm and 350 mm.
6. A minimum climbing clearance in width is to be 600 mm other than the ladders placed between the hold frames.
7. The vertical ladders are to be secured at intervals not exceeding 2.5 m apart to prevent vibration.



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**Technical Background**

- MODU TP, paragraph 3.6, is a continuation of MODU TP, paragraph 3.5, which addresses inclined ladders. Interpretations for vertical ladders are needed based upon the current standards of IMO, AMSA or the industry.
- Interpretations 2 and 5 address vertical ladders based upon the current standards.
- Double square bars for treads become too large for a grip for vertical ladders and single rungs facilitate a safe grip.
- Interpretation 7 is introduced consistently with the requirement and the interpretation of MODU TP, paragraph 3.4.

**Ref.**

- Annex 1 to resolution A.272(VIII).
- Australian AMSA Marine Orders Part 32, Appendix 17.
- ILO Code of Practice "Safety and Health in Dockwork" – Section 3.6 Access to Ship's Holds.

3.7 For vertical ladders or spiral ladders, the width and construction should be in accordance with international or national standards accepted by the Administration.

3.8 No free-standing portable ladder shall be more than 5 m long.

3.9 Alternative means of access 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 shall only be utilized if fitted with a mechanical device to secure the upper end of the ladder;

**Interpretation**

A mechanical device such as hooks for securing at the upper end of a ladder is to be considered as an appropriate securing device if a movement fore/aft and sideways can be prevented at the upper end of the ladder.

**Technical Background**

Innovative design is to be accepted if it fits for the functional requirement with due consideration for safe use.

- .7 other means of access, approved by and acceptable to the Administration.

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Means for safe operation and rigging of such equipment to and from and within the spaces shall be clearly described in the MODU's Structure Access Manual.

3.10 For access through horizontal openings, hatches or manholes, the dimensions shall 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 shall not be less than 600 mm x 600 mm. When access to a hold is arranged through a flush manhole in the deck or a hatch, the top of the ladder shall be placed as close as possible to the deck or hatch coaming. Access hatch coamings having a height greater than 900 mm shall also have steps on the outside in conjunction with the ladder.

3.11 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 clear opening shall be not less than 600 mm x 800 mm at a height of not more than 600 mm from the passage bottom plating unless gratings or other foot holds are provided.

**Interpretation**

See interpretation for sections 2.2.4.1 and 2.2.4.2 of 2009 MODU Code.

3.12 The Administration may approve, in special circumstances, smaller dimensions for the openings referred to in paragraphs 3.10 and 3.11, if the ability to traverse such openings or to remove an injured person can be proved to the satisfaction of the Administration.

3.13 Access ladders to large holds and other similar spaces shall be:

- .1 Where the vertical distance between the upper surface of adjacent decks or between deck and the bottom of the hold is not more than 6 m, either a vertical ladder or an inclined ladder.

**Interpretation**

Either a vertical or an inclined ladder or a combination of them may be used for access to a large hold where the vertical distance is 6 m or less from the deck to the bottom of the hold.

- .2 Where the vertical distance between the upper surface of adjacent decks or between deck and the bottom of the hold is more than 6 m, an inclined ladder or series of inclined ladders at one end of the hold, except the uppermost 2.5 m of a 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.

The second means of access at the other end of the hold may be formed of a series of staggered vertical ladders, which should 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 should 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 should be vertical for a distance of 2.5 m measured clear of overhead obstructions and connected to a ladder-linking platform.

**MODU  
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(cont)****Interpretation**

Adjacent sections of vertical ladder need to be installed so that the following provisions are complied with (refer to figure A and figure B):

- The minimum “lateral offset”. between two adjacent sections of 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.
- Adjacent sections of vertical ladder shall 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 1500 mm in order to permit a safe transfer between ladders.
- No section of the access ladder shall be terminated directly or partly above an access opening.

**Technical Background**

The aims of the above are to:

- a. Ensure there is a rest platform at appropriate intervals, reducing the risk of accidents due to tiredness.
- b. Reduce the risk of collateral injury from falling or dropping items of equipment, by preventing the lateral overlap of two ladders.
- .3 A vertical ladder may be used as a means of access from a deck to a tank or space below, where the vertical distance is 6 m or less between the deck and the longitudinal means of access in the tank or the stringer or the bottom of the space immediately below the entrance. The uppermost entrance section from deck of the vertical ladder of the tank should be vertical for a distance of 2.5 m measured clear of overhead obstructions and comprise a ladder linking platform, unless landing on the longitudinal means of access, the stringer or the bottom within the vertical distance, displaced to one side of a vertical ladder.
- .4 Unless allowed in .3 above, an inclined ladder or combination of ladders should be used for access to a tank or a 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.
- .5 In case of .4 above, the uppermost entrance section from deck of the ladder should be vertical for a distance of 2.5 m clear of overhead obstructions and connected to a landing platform and continued with an inclined ladder. The flights of inclined ladders should not be more than 9 m in actual length and the vertical height should not normally be more than 6 m. The lowermost section of the ladders may be vertical for a distance of not less than 2.5 m.
- .6 In narrow spaces of less than 2.5 m width, the access to the space may be by means of vertical ladders that 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 should be laterally offset from each other by at least the width of the ladder.

**MODU  
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(cont)****Interpretation**

Adjacent sections of vertical ladder need to be installed so that the following provisions are complied with (refer to figure A and figure B):

- The minimum “lateral offset”. between two adjacent sections of 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.
- Adjacent sections of vertical ladder shall 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 1500 mm in order to permit a safe transfer between ladders.
- No section of the access ladder shall be terminated directly or partly above an access opening.

**Technical Background**

The aims of the above are to:

- a. Ensure there is a rest platform at appropriate intervals, reducing the risk of accidents due to tiredness.
  - b. Reduce the risk of collateral injury from falling or dropping items of equipment, by preventing the lateral overlap of two ladders
- .7 A spiral ladder is 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.

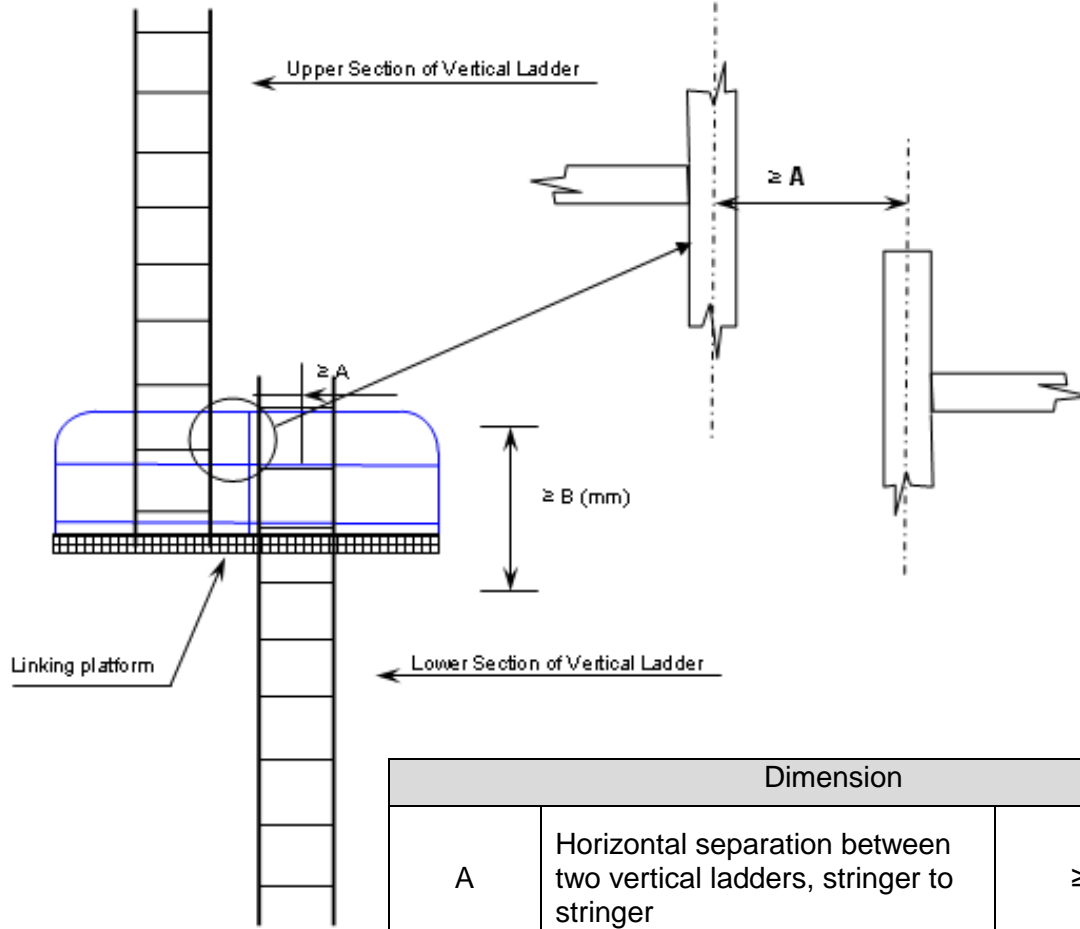
3.14 The uppermost entrance section from deck of the vertical ladder providing access to a tank should be vertical for a distance of 2.5 m measured clear of overhead obstructions and comprise a ladder linking platform, displaced to one side of a vertical ladder. The vertical ladder can be between 1.6 m and 3 m below deck structure if it lands on a longitudinal or athwartship permanent means of access fitted within that range.

**Interpretation**

Deck is defined as “weather deck”.

Figure "A"

Vertical Ladder – Ladder through the linking platform



Dimension		
A	Horizontal separation between two vertical ladders, stringer to stringer	$\geq 200$ mm
B	Stringer height above landing or intermediate platform	$\geq 1500^*$ mm
C	Horizontal separation between ladder and platform	$100 \text{ mm} \leq C < 300$ mm

\*Note: the minimum height of the handrail of resting platform is of 1000 mm (Technical Provision, resolution MSC.158(78), paragraph 3.3)

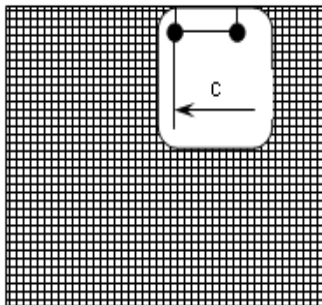
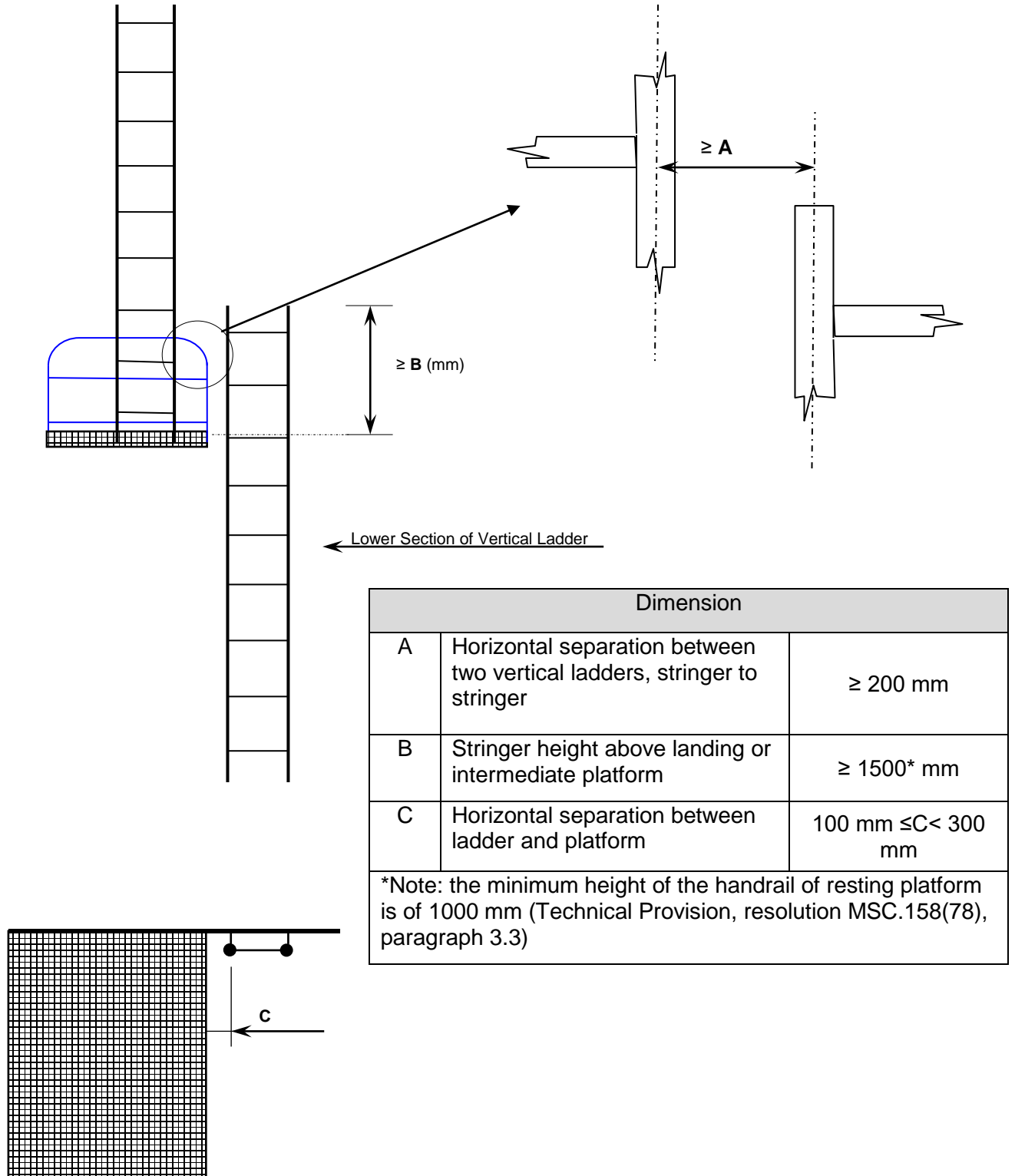


Figure "B"  
Vertical Ladder – Side mount



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**Table 1 - Means of access**

1 Water ballast tanks, except those specified in the right column, and other tanks	2 Water ballast tanks of less than 5 m width
<b>Access to the underdeck and vertical structure</b>	
1.1 For tanks of which the height is 6 m and over containing internal structures, permanent means of access shall be provided in accordance with .1 to .6:	2.1 For water ballast tanks of less than 5 m width (including double side spaces above the upper knuckle point of the bilge hopper sections in surface units), permanent means of access are to be provided in accordance with .1 to .3:
.1 continuous athwartship permanent access 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;	.1 where the vertical distance between horizontal uppermost stringer and deck head is 6 m or more, one continuous longitudinal permanent means of access shall 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;
.2 at least one continuous longitudinal permanent means of access at each side of the tank. One of these accesses shall be at a minimum of 1.6 m to a maximum of 6 m below the deck head and the other shall be at a minimum of 1.6 m to a maximum of 3 m below the deck head;	.2 continuous longitudinal permanent means of access, which are integrated in the structure, at a vertical distance not exceeding 6 m apart; and
.3 access between the arrangements specified in .1 and .2 and from the deck above the tanks to either .1 or .2;	.3 plated stringers shall, as far as possible, be in alignment with horizontal girders of transverse bulkheads.
.4 continuous longitudinal permanent means of access which are integrated in the structural member on the stiffened surface of a longitudinal bulkhead, in alignment, where possible, with horizontal girders of transverse bulkheads are to be provided for access to the transverse webs unless permanent fittings are installed at the uppermost platform for use of alternative means, as defined in paragraph 3.9 of the MODU Technical provisions, for inspection at intermediate heights;	2.2 For pre-load tanks in self-elevating units, reference is made to 1.3.

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1 Water ballast tanks, except those specified in the right column, and other tanks	2 Water ballast tanks of less than 5 m width
<b>Access to the underdeck and vertical structure</b>	
<p>.5 for MODUs having cross-ties which are 6 m or more above tank bottom, a transverse permanent means of access on the cross-ties providing inspection of the tie flaring brackets at both sides of the tank, with access from one of the longitudinal permanent means of access in .4; and</p>	<p>2.3 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 shall be provided for the full length of the tank in accordance with 2.1. (Note: In columns, longitudinal means the perimetral direction of the column and transversal means the radial direction of the column)</p>
<p>.6 alternative means as defined in paragraph 3.9 of the Technical provisions may be provided as an alternative to .4 for tanks other than ballast tanks of which the height is less than 17 m.</p>	<p><b>For surface units (ship- or barge-type) and pontoons in column-stabilized units:</b></p> <p>2.4 For bilge hopper sections of which the vertical distance from the tank bottom to the upper knuckle point is 6 m and over, one longitudinal permanent means of access shall be provided for the full length of the tank. It shall be accessible by vertical permanent means of access at each end of the tank.</p>
<p>1.2 For tanks of which the height is less than 6 m, alternative means as defined in paragraph 3.9 of the Technical provisions or portable means may be utilized in lieu of the permanent means of access.</p>	<p>2.4.1 The longitudinal continuous permanent means of access may be installed at a minimum 1.6 m to maximum 3 m from the top of the bilge hopper section. In this case, a platform extending the longitudinal continuous permanent means of access in way of the webframe may be used to access the identified structural critical areas.</p>
<p>1.3 Pre-load tanks in self-elevating units are normally kept empty for a long duration when the unit is in elevated mode. For such tanks if due to their shape it is not practicable to fit permanent means of access mentioned in 1.1 above, the Administration may permit the provision of alternative means defined in paragraph 3.9 of the Technical provisions provided that the tank height is less than 17 m.</p>	<p>2.4.2 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 a use of portable means of access to reach identified structural critical areas.</p>



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1 Water ballast tanks, except those specified in the right column, and other tanks	2 Water ballast tanks of less than 5 m width
<b>Access to the underdeck and vertical structure</b>	
<p>1.4 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.</p>	<p>2.5 Where the vertical distance referred to in 2.4 is less than 6 m, alternative means as defined in paragraph 3.9 of the Technical provisions or portable means of access may be utilised in lieu of the permanent means of access. To facilitate the operation of the alternative means of access, in-line openings in horizontal stringers shall be provided. The openings shall be of an adequate diameter and shall have suitable protective railings.</p>
<p><b>Fore and aft peak tanks in surface units</b></p> <p>1.5 For fore and aft peak tanks with a depth of 6 m or more at the centre line of the collision and aft end bulkheads, a suitable means of access shall be provided for access to critical areas such as the underdeck structure, stringers, collision and aft end bulkheads and side shell structure.</p>	
<p>1.5.1 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.</p>	
<p>1.5.2 In case the vertical distance between the deck head and stringers, stringers or the lowest stringer and the tank bottom is 6 m or more, alternative means of access as defined in paragraph 3.9 of the Technical provisions shall be provided.</p>	

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3 Holds	4 Critical Structural Areas
<p><b>Access to underdeck structure</b></p> <p>3.1 For holds under main deck of which the height is 6 m and over, permanent means of access shall 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 shall 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.</p>	<p>4.1 Permanent means of access shall be fitted to provide access to overhead and vertical structures identified as critical structural areas as defined in 2009 MODU Code, paragraph 2.2.3.2 and located at a height of 6 m or more from the bottom of the space.</p>
<p>3.2 An athwartship permanent means of access fitted on the transverse bulkhead at a minimum 1.6 m to a maximum 3 m below the cross-deck head is accepted as equivalent to 3.1.</p>	<p>4.1.1 When permanent means of access to critical structural areas are not covered by sections 1, 2 and 3 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.</p>
<p>3.3 Access to the permanent means of access to overhead structure of the cross deck may also be via the uppermost stringer.</p>	<p>4.2 For critical structural areas located at a height of less than 6 m from the bottom of the space, alternative means of access as defined in paragraph 3.9 of the Technical provisions are to be provided.</p>
<p>3.4 Alternatively, movable means of access as defined in paragraph 3.9 of the MODU Technical provisions, may be utilized for access to the overhead structure of the cross deck if its vertical distance is 17 m or less above the bottom of the hold.</p>	<p>4.3 Suitable means of access into the interior of the horizontal braces in column stabilized units shall be provided. For access through vertical openings, the requirements of 3.11 of the Technical provisions shall be applied.</p>

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**Appendix 1 Unified Interpretation of IMO Resolution 133(76) as applicable for MODUs**

**Table 1 – Means of access, paragraph 1.1**

**1. Water ballast tanks, except those specified in the right column, and other tanks**

***Access to the underdeck and vertical structure***

1.1 For tanks of which the height is 6 m and over containing internal structures, permanent means of access shall be provided in accordance with .1 to .6:

**Interpretation**

1. For tanks containing oil products other than crude oil (e.g. fuel oil, diesel oil, base oil) where lower corrosion is expected, section 1.1 of Table 1 is not to be applied. For tanks containing products considered corrosive (e.g. brine, drilling mud), section 1.1 is to be applied.
2. Sub-paragraphs .1, .2 and .3 define access to underdeck structure, access to the uppermost sections of transverse webs and connection between these structures.
3. Sub-paragraphs .4, .5 and .6 define access to vertical structures only and are linked to the presence of transverse webs on longitudinal bulkheads.
4. If there are no underdeck structures (deck longitudinals and deck transverses) but there are vertical structures in the tank supporting transverse and longitudinal bulkheads, access in accordance with sub-paragraphs from .1 through to .6 is to be provided for inspection of the upper parts of vertical structure on transverse and longitudinal bulkheads.
5. If there is no structure in the tank, section 1.1 of Table 1 is not to be applied.
6. The vertical distance below the overhead structure is to be measured from the underside of the main deck plating to the top of the platform of the means of access at a given location.
7. The height of the tank is to be measured at each tank. For a tank the height of which varies at different bays, item 1.1 is to be applied to such bays of a tank that have height 6 m and over.

**Technical Background**

Interpretation 7: If the height of the tank is increasing along the length of a unit, the permanent means of access is to be provided locally where the height is above 6 m.

**Ref.**

Paragraph 10 of the annex to MSC/Circ.686.

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**Appendix 1 Unified Interpretation of IMO Resolution 133(76) as applicable for MODUs**

**Table 1 – Means of access, paragraph 1.1.2**

1.1.2 at least one continuous longitudinal permanent means of access at each side of the tank. One of these accesses shall be at a minimum of 1.6 m to a maximum of 6 m below the deck head and the other shall be at a minimum of 1.6 m to a maximum of 3 m below the deck head;

**Interpretation**

There is need to provide continuous longitudinal permanent means of access when the deck longitudinals and deck transverses are fitted on deck but supporting brackets are fitted under the deck.

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**Appendix 1 Unified Interpretation of IMO Resolution 133(76) as applicable for MODUs**

**Table 1 – Means of access, paragraph 1.1.3**

1.1.3 access between the arrangements specified in .1 and .2 and from the main deck to either .1 or .2.

**Interpretation**

Means of access to tanks may be used for access to the permanent means of access for inspection.

**Technical Background**

As a matter of principle, in such a case where the means of access can be utilised for the purpose of accessing structural members for inspection there is no need of duplicated installation of the MA.

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**Appendix 1 Unified Interpretation of IMO Resolution 133(76) as applicable for MODUs**

**Table 1 – Means of access, paragraph 1.1.4**

1.1.4 continuous longitudinal permanent means of access which are integrated in the structural member on the stiffened surface of a longitudinal bulkhead, in alignment, where possible, with horizontal girders of transverse bulkheads are to be provided for access to the transverse webs unless permanent fittings are installed at the uppermost platform for use of alternative means as defined in paragraph 3.9 of the MODU Technical provisions for inspection at intermediate heights;

**Interpretation**

The permanent fittings required to serve alternative means of access such as wire lift platform, that are to be used by crew and surveyors for inspection shall provide at least an equal level of safety as the permanent means of access stated by the same paragraph. These means of access shall be carried on board the unit and be readily available for use without filling of water in the tank.

Therefore, rafting is not to be acceptable under this provision.

Alternative means of access are to be part of Access Manual which is to be approved on behalf of the flag State.

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**Appendix 1 Unified Interpretation of IMO Resolution 133(76) as applicable for MODUs**

**Table 1 – Means of access paragraph 2.1**

**2. Water ballast tanks of less than 5 m width**

***Access to the underdeck and vertical structure***

2.1 For water ballast tanks of less than 5 m width (including *double side spaces above the upper knuckle* point of the bilge hopper sections in surface units), permanent means of access are to be provided in accordance with .1 and .3:

**Interpretation**

Paragraph 2.1.1 represents requirements for access to underdeck structures, while paragraph 2.1.2 is a requirement for access for survey and inspection of vertical structures on longitudinal bulkheads (transverse webs).

**Technical Background**

MA or portable means of access are necessary arrangement to facilitate inspection of the structural condition of the space and the boundary structure.

**Appendix 1 Unified Interpretation of IMO Resolution 133(76) as applicable for MODUs****Table 1 – Means of access, paragraph 2.1.1****2. Water ballast tanks of less than 5 m width**

2.1.1 where the vertical distance between horizontal uppermost stringer and deck head is 6 m or more, one continuous permanent means of access shall be provided for the full length of the tank with a means to allow passing through transverse webs installed 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 tank;

**Interpretation**

1. For a tank, the vertical distance between horizontal upper stringer and deck head of which varies at different sections, item 2.1.1 is to be applied to such sections that fall under the criteria.
2. 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 as necessary on web frames. In case 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 shall be provided on both sides of the web frames to allow safe passage through the web frame.
3. Where two access hatches are required by 2009 MODU Code, section 2.2.2.2, access ladders at each end of the tank are to lead to the deck.

**Technical Background**

Interpretation 1: The interpretation of varied tank height in item 1 of Table 1 is applied to the vertical distance between horizontal upper stringer and deck head for consistency.



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**Appendix 1 Unified Interpretation of IMO Resolution 133(76) as applicable for MODUs**

**Table 1 – Means of access, paragraph 2.1.2**

2.1.2 continuous longitudinal permanent means of access, which are integrated in the structure, at a vertical distance not exceeding 6 m apart; and

**Interpretation**

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 as necessary on webframes. In case the vertical opening of the web is located in way of the open part between the wide longitudinal and the longitudinal on the opposite side, platforms shall be provided on both sides of the web to allow safe passage through the web.

A “reasonable deviation”, as noted in MODU TP, paragraph 1.4, of not more than 10% may be applied where the permanent means of access is integral with the structure itself.

**Appendix 1 Unified Interpretation of IMO Resolution 133(76) as applicable for MODUs****Table 1 – Means of access, paragraph 2.2****For surface units (ship- or barge-type) and pontoons in column-stabilized units:**

2.2 For bilge hopper sections of which the vertical distance from the tank bottom to the upper knuckle point is 6 m and over, one longitudinal permanent means of access shall be provided for the full length of the tank. It shall be accessible by vertical permanent means of access at both ends of the tank.

**Interpretation**

1. Permanent means of access between the longitudinal continuous permanent means of access and the bottom of the space is to be provided.
2. The height of a bilge hopper tank located outside of the parallel part of the unit is to be taken as the maximum of the clear vertical distance measured from the bottom plating to the hopper plating of the tank.
3. The foremost and aftmost bilge hopper ballast tanks with raised bottom, of which the height is 6 m and over, a combination of transverse and vertical MA for access to the upper knuckle point for each transverse web is to be accepted in place of the longitudinal permanent means of access.

**Technical Background**

Interpretation 2: The bilge hopper tanks at fore and aft of unit's hull narrow due to raised bottom plating and the actual vertical distance from the bottom of the tank to hopper plating of the tank is more appropriate to judge if a portable means of access could be utilized for the purpose.

Interpretation 3: in the foremost or aftmost bilge hopper tanks where the vertical distance is 6 m or over but installation of longitudinal permanent means of access is not practicable permanent means of access of combination of transverse and vertical ladders provides an alternative means of access to the upper knuckle point.

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**Appendix 1 Unified Interpretation of IMO Resolution 133(76) as applicable for MODUs**

**Table 1 – Means of access, paragraph 3.1**

**3.1 Holds**

***Access to underdeck structure***

3.1 For holds under main deck of which the height is 6 m or over, permanent means of access shall 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 shall 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.

**Interpretation**

1. Means of access shall be provided to the crossdeck structures of the foremost and aftermost part of the each hold.
2. Interconnected means of access under the cross deck for access to three locations at both sides and in the vicinity of the centreline is to be acceptable as the three means of access.
3. Permanent means of access fitted at three separate locations accessible independently, one at each side and one in the vicinity of the centreline is to be acceptable.
4. Special attention is to be paid to the structural strength where any access opening is provided in the main deck or cross deck.

**Technical Background**

Pragmatic arrangements of the MA are provided.

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**Appendix 1 Unified Interpretation of IMO Resolution 133(76) as applicable for MODUs**

**Table 1 – Means of access, paragraph 3.3**

3.3 Access to the permanent means of access to overhead structure of the cross deck may also be via the uppermost stringer.

**Interpretation**

Particular attention is to be paid to preserve the structural strength in way of access opening provided in the main deck or cross deck.

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**Appendix 1 Unified Interpretation of IMO Resolution 133(76) as applicable for MODUs**

**Table 1 – Means of access, paragraph 3.4**

3.4 Alternatively, movable means of access as defined in paragraph 3.9 of the MODU Technical provisions may be utilized for access to the overhead structure of cross deck if its vertical distance is 17 m or less above the bottom of the hold.

**Interpretation**

The movable means of access to the underdeck structure of cross deck need not necessarily be carried on board the unit. It is sufficient if it is made available when needed.

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