

# IACS Unified Interpretations (UI) for the application of SOLAS regulations to conversions of Single Hull Tanker to Double Hull Tanker or Bulk Carrier/Ore Carrier

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### Note:

1. This UI is to be applied by IACS Members and Associates when acting as recognized organizations, authorized by flag State Administrations to act on their behalf, unless otherwise advised, from 1 January 2009.

**SC226.1 Alterations and modifications of a major character  
SOLAS Chapter II-1 Reg. 1.3 (as amended by MSC.216(82))**
**SOLAS Chapter II-1, Reg. 1 'Application':**

*"3 All ships which undergo repairs, alterations, modifications and outfitting related thereto shall continue to comply with at least the requirements previously applicable to these ships. Such ships, if constructed before the date on which any relevant amendments enter into force, shall, as a rule, comply with the requirements for ships constructed on or after that date to at least the same extent as they did before undergoing such repairs, alterations, modifications or outfitting. Repairs, alterations and modifications of a major character and outfitting related thereto shall meet the requirements for ships constructed on or after the date on which any relevant amendments enter into force, in so far as the Administration deems reasonable and practicable."*

**Interpretation**

The date on which such a modification occurs for purposes of determining the applicability of requirements for ships constructed on or after the date on which any relevant amendments enter into force shall be:

- the date on which the contract is placed for the conversion; or
- in the absence of a contract, the date on which the work identifiable with the specific conversion begins.

- **For Single-Hull Tanker to Double-Hull Tanker or Single-Hull Tanker to Bulk Carrier/Ore Carrier**

i.e.

1 Conversions of **single-hull tankers to double-hull tankers** are regarded as modifications of a major character for the purposes of SOLAS chapter II-1.

2 Repairs, alterations and modifications of a major character include:

.1 Substantial alteration of the dimensions of a ship, for example:

Lengthening of a ship by adding a new midbody. The new midbody shall comply with SOLAS chapter II-1.

.2 A change of ship type, for example:

**A tanker converted to a bulk carrier.** Any structure, machinery and systems that are added or modified shall comply with SOLAS chapter II-1 taking into account the interpretation Reg. 3-2, 2 and Reg. 3-2, 4.

**SC226.2 Protective coatings of dedicated seawater ballast tanks in all types of ships and double-side skin spaces of bulk carriers  
SOLAS Chapter II-1 Reg. 3-2, 2 and Reg. 3-2, 4 (as amended by MSC.216(82))****SOLAS Chapter II-1, Reg. 3-2:**

*“2 All dedicated seawater ballast tanks arranged in ships and double-side skin spaces arranged in bulk carriers of 150 m in length and upwards shall be coated during construction in accordance with the Performance standard for protective coatings for dedicated seawater ballast tanks in all types of ships and double-side skin spaces of bulk carriers, adopted by the Maritime Safety Committee by resolution MSC.215(82), as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the Annex other than chapter I.”*

and

*“4 Maintenance of the protective coating system shall be included in the overall ship’s maintenance scheme. The effectiveness of the protective coating system shall be verified during the life of a ship by the Administration or an organization recognized by the Administration, based on the guidelines developed by the Organization.\*”*

**Interpretation****• For Single-Hull Tanker to Double-Hull Tanker**

SOLAS II-1/3-2 (MSC.216(82)) only applies to dedicated water ballast tanks if constructed with all structural members being entirely new. If converting existing spaces into water ballast tanks with part of the existing structural members remaining in place, revised SOLAS II-1/3-2 (MSC.216(82)) need not be applied.

**• For Single-Hull Tanker to Bulk Carrier/Ore Carrier**

SOLAS II-1/3-2 (MSC.216(82)) only applies to dedicated water ballast tanks and double-side skin space of bulk carriers if constructed with all structural members being entirely new. If converting existing spaces into dedicated water ballast tanks or double-side skin space of Bulk Carrier with part of the existing structural members remains in place, revised SOLAS II-1/3-2 (MSC.216(82)) need not be applied.

**SC  
226**

(cont)

**SC226.3 Access to and within spaces in, and forward of, the cargo area of oil tankers and bulk carriers  
SOLAS Chapter II-1 Reg. 3-6 (as amended by MSC.194(80))**

*Regulation texts are not inserted here.*

**Interpretation**

- **For Single-Hull Tanker to Double-Hull Tanker**

Permanent means of access contained in table 1 of the Technical provisions for means of access for inspections (resolution MSC.158(78)) need not apply. However, if, in the course of conversion, substantial new structures are added, these new structures shall comply with the regulation.

The term "substantial new structures" means hull structures that are entirely renewed or augmented by new double bottom and/or double side construction (e.g., replacing the entire structure within cargo area or adding a new double bottom and/or double side section to the existing cargo area).

Additionally, an approved access manual shall be provided.

- **For Single-Hull Tanker to Bulk Carrier/Ore Carrier**

Permanent means of access contained in table 2 of the Technical provisions for means of access for inspections (resolution MSC.158(78)) need not apply. However, if, in the course of conversion, substantial new structures are added, these new structures shall comply with the regulation.

The term "substantial new structures" means hull structures that are entirely renewed or augmented by new double bottom and/or double-side skin construction (e.g., replacing the entire structure within cargo area or adding a new double bottom and/or double-side section to the existing cargo area).

Additionally, an approved access manual shall be provided.

**SC  
226**  
(cont)**SC226.4 Towing and Mooring Equipment**  
**SOLAS Chapter II-1 Reg. 3-8 (as amended by MSC.194(80))**

*Regulation texts are not inserted here.*

**Interpretation**

- **For Single-Hull Tanker to Double-Hull Tanker or Single-Hull Tanker to Bulk Carrier/Ore Carrier**

When existing equipment or fittings are only relocated, this regulation applies only to their supporting structures.

Except where equipment and fittings for mooring/towing are totally replaced or modified, indication of Safe Work Load and provision of towing and mooring arrangements plan is not required.

**SC226.5 Part B: Subdivision and stability; and Part B-1: Stability  
SOLAS Chapter II-1 Part B and Part B-1 (as amended by  
MSC.216(82) – to be implemented from 1 January 2009)**

Part	Reg.	Title	Applicable to
B	4	General	Cargo ships and passenger ships, but shall exclude those cargo ships which are shown to comply with subdivision and damage stability regulations in other instruments developed by the IMO.
B-1	5	Intact stability information	Cargo ships and passenger ships
B-1	5-1	Stability information to be supplied to the master	Cargo ships and passenger ships
B-1	6	Required subdivision index $R$	Cargo ships and passenger ships
B-1	7	Attained subdivision index $A$	Cargo ships and passenger ships
B-1	7-1	Calculation of the factor $p_i$	Cargo ships and passenger ships
B-1	7-2	Calculation of the factor $s_i$	Cargo ships and passenger ships
B-1	7-3	Permeability	Cargo ships and passenger ships

*Regulation texts are not inserted here.*

### Interpretation

- **For Single-Hull Tanker to Double-Hull Tanker**

As Oil Tankers shall comply with MARPOL Annex I Reg. 27 (intact stability) and Reg. 28 (damage stability), SOLAS Part B, B-1 may be excluded.

- **For Single-Hull Tanker to Bulk Carrier/Ore Carrier**

For Bulk Carrier/Ore Carrier which is assigned a B reduced freeboard, ICLL 1966 Reg.27 (damage stability) or ICLL Protocol 1988 Reg.27 (damage stability) is applicable. As such, SOLAS II-1 Parts B, B-1 may be excluded.

For Bulk Carrier/Ore Carrier which is assigned a B freeboard, SOLAS II-1 Part B, B-1 is applicable.

**SC226.6 Repairs, alterations, modifications and outfitting  
SOLAS Chapter II-2 Reg. 1.3****SOLAS Chapter II-2, Reg. 1.3 'Repairs, alterations, modifications and outfitting':**

*"3.1 All ships which undergo repairs, alterations, modifications and outfitting related thereto shall continue to comply with at least the requirements previously applicable to these ships. Such ships, if constructed before 1 July 2002, shall, as a rule, comply with the requirements for ships constructed on or after that date to at least the same extent as they did before undergoing such repairs, alterations, modifications or outfitting.*

*3.2 Repairs, alterations and modifications which substantially alter the dimensions of a ship or the passenger accommodation spaces, or substantially increase a ship's service life and outfitting related thereto shall meet the requirements for ships constructed on or after 1 July 2002 in so far as the Administration deems reasonable and practicable."*

**Interpretation**

The date on which a such a modification occurs for purposes of determining the applicability of requirements for ships constructed on or after the date on which any relevant amendments enter into force shall be:

- the date on which the contract is placed for the conversion; or
- in the absence of a contract, the date on which the work identifiable with the specific conversion begins.

- **For Single-Hull Tanker to Double-Hull Tanker**

New and converted parts shall comply with the latest applicable requirements.

- **For Single-Hull Tanker to Bulk Carrier/Ore Carrier**

New and converted parts shall comply with the latest applicable requirements.

**SC  
226**  
(cont)**SC226.7 Alterations and modifications of a major character  
SOLAS Chapter III Reg. 1.4.2****SOLAS Chapter III, Reg. 1 ‘Application’:**

“4 For ships constructed before 1 July 1998, the Administration shall:

.1 .....; and

.2 *ensure that when life-saving appliances or arrangements on such ships are replaced or such ships undergo repairs, alterations or modifications of a major character which involve replacement of, or any addition to, their existing life-saving appliances or arrangements, such life-saving appliances or arrangements, in so far as is reasonable and practicable, comply with the requirements of this chapter. However, if a survival craft other than an inflatable liferaft is replaced without replacing its launching appliance, or vice versa, the survival craft or launching appliance may be of the same type as that replaced.”*

**Interpretation**

The date on which a such a modification occurs for purposes of determining the applicability of requirements for ships constructed on or after the date on which any relevant amendments enter into force shall be:

- the date on which the contract is placed for the conversion; or
- in the absence of a contract, the date on which the work identifiable with the specific conversion begins.

- **For Single-Hull Tanker to Double-Hull Tanker**

This shall be considered as a major conversion.

- **For Single-Hull Tanker to Bulk Carrier/Ore Carrier**

This shall be considered as a major conversion.

**SC  
226**  
(cont)**SC226.8 Free-fall lifeboats**  
**SOLAS Chapter III Reg. 31.1.8****SOLAS Chapter III, Reg. 31 'Survival craft and rescue boats':**

*"1.2 In lieu of meeting the requirements of paragraph 1.1, cargo ships may carry:*

- .1 one or more free-fall lifeboats, complying with the requirements of section 4.7 of the Code, capable of being free-fall launched over the stern of the ship of such aggregate capacity as will accommodate the total number of persons on board; and*
- .2 in addition, one or more inflatable or rigid liferafts complying with the requirements of section 4.2 or 4.3 of the Code, on each side of the ship, of such aggregate capacity as will accommodate the total number of persons on board. The liferafts on at least one side of the ship shall be served by launching appliances."*

and

*"1.8 Notwithstanding the requirements of paragraph 1.1, bulk carriers as defined in regulation IX/1.6 constructed on or after 1 July 2006 shall comply with the requirements of paragraph 1.2."*

**Interpretation**

- **For Single-Hull Tanker to Double-Hull Tanker**

Not relevant.

- **For Single-Hull Tanker to Bulk Carrier/Ore Carrier**

Not applicable.

**SC  
226**  
(cont)**SC226.9      Navigation bridge visibility  
SOLAS Chapter V Reg. 22**

*Regulation text is not inserted here.*

**Interpretation**

- **For Single-Hull Tanker to Double-Hull Tanker**

In ballast loading condition, the visibility standard applicable to the ship prior to conversion is acceptable as equivalent to the ballast loading condition after the conversion. Visibility forward needs to comply with if any changes are made to the fore end structural arrangement. This need not only be related to the fitting of a full forecastle, but could also be affected by aspects such as increasing the sheer and/or step in the upper deck.

- **For Single-Hull Tanker to Bulk Carrier/Ore Carrier**

In ballast loading condition, the visibility standard applicable to the ship prior to conversion is acceptable as equivalent to the ballast loading condition after the conversion. Visibility forward needs to comply with if any changes are made to the fore end structural arrangement. This need not only be related to the fitting of a full forecastle, but could also be affected by aspects such as increasing the sheer and/or step in the upper deck.

**SC  
226**  
(cont)**SC226.10 Damage stability requirements applicable to bulk carriers  
SOLAS regulation XII/4**

*“2 Bulk carriers of 150 m in length and upwards of double-side skin construction in which any part of longitudinal bulkhead is located within B/5 or 11.5 m, whichever is less, inboard from the ship's side at right angle to the centreline at the assigned Summer Load Line, designed to carry solid bulk cargoes having a density of 1,000 kg/m<sup>3</sup> and above, constructed on or after 1 July 2006, shall, when loaded to the Summer Load Line, be able to withstand flooding of any one cargo hold in all loading conditions and remain afloat in a satisfactory condition of equilibrium, as specified in paragraph 4.”*

**Interpretation**

- **For Single-Hull Tanker to Double-Hull Tanker**

Not relevant.

- **For Single-Hull Tanker to Bulk Carrier/Ore Carrier**

When the breadth of wing tanks is less than B/5 or 11.5m, whichever is less, this requirement applies to the relevant cargo hold(s) in way of that wing tank.

**SC  
226**

(cont)

**SC226.11 Structural strength of bulk carriers  
SOLAS regulation XII/5.1 and 5.2**

*"1 Bulk carriers of 150 m in length and upwards of single-side skin construction, designed to carry solid bulk cargoes having a density of 1,000 kg/m<sup>3</sup> and above constructed on or after 1 July 1999, shall have sufficient strength to withstand flooding of any one cargo hold to the water level outside the ship in that flooded condition in all loading and ballast conditions, taking also into account dynamic effects resulting from the presence of water in the hold, and taking into account the recommendations adopted by the Organization.*

*2 Bulk carriers of 150 m in length and upwards of double-side skin construction, in which any part of longitudinal bulkhead is located within B/5 or 11.5 m, whichever is less, inboard from the ship's side at right angle to the centreline at the assigned Summer Load Line, designed to carry bulk cargoes having a density of 1,000 kg/m<sup>3</sup> and above, constructed on or after 1 July 2006, shall comply with the structural strength provisions of paragraph 1."*

**Interpretation**

- **For Single-Hull Tanker to Double-Hull Tanker**

Not relevant.

- **For Single-Hull Tanker to Bulk Carrier/Ore Carrier**

When the breadth of wing tanks is less than B/5 or 11.5m, whichever is less, this requirement applies to the relevant cargo hold(s) in way of that wing tank.

**SC  
226**  
(cont)**SC226.12 Structural and other requirements for bulk carriers  
SOLAS regulation XII/6.1**

*"1 Bulk carriers of 150 m in length and upwards of single-side skin construction, carrying solid bulk cargoes having a density of 1,780 kg/m<sup>3</sup> and above, constructed before 1 July 1999, shall comply with the following requirements in accordance with the implementation schedule specified in regulation 3:"*

**Interpretation****• For Single-Hull Tanker to Double-Hull Tanker**

Not relevant.

**• For Single-Hull Tanker to Bulk Carrier/Ore Carrier**

This regulation is not applicable.

**SC  
226**  
(cont)**SC226.13 Structural and other requirements for bulk carriers  
SOLAS regulation XII/6.2**

"2 Bulk carriers of 150 m in length and upwards constructed on or after 1 July 2006, shall comply in all areas with double-side skin construction with the following requirements:

- .1 Primary stiffening structures of the double-side skin shall not be placed inside the cargo hold space.
- .2 Subject to the provisions below, the distance between the outer shell and the inner shell at any transverse section shall not be less than 1,000 mm measured perpendicular to the side shell. The double-side skin construction shall be such as to allow access for inspection as provided in regulation II-1/3-6 and the Technical Provisions referring thereto.
  - .1 The clearances below need not be maintained in way of cross ties, upper and lower end brackets of transverse framing or end brackets of longitudinal framing.
  - .2 The minimum width of the clear passage through the double-side skin space in way of obstructions such as piping or vertical ladders shall not be less than 600 mm.
  - .3 Where the inner and/or outer skins are transversely framed, the minimum clearance between the inner surfaces of the frames shall not be less than 600 mm.
  - .4 Where the inner and outer skins are longitudinally framed, the minimum clearance between the inner surfaces of the frames shall not be less than 800 mm. Outside the parallel part of the cargo hold length, this clearance may be reduced where necessitated by the structural configuration, but, shall in no case be less than 600 mm.
  - .5 The minimum clearance referred to above shall be the shortest distance measured between assumed lines connecting the inner surfaces of the frames on the inner and outer skins."

**Interpretation**

- **For Single-Hull Tanker to Double-Hull Tanker**

Not relevant.

- **For Single-Hull Tanker to Bulk Carrier/Ore Carrier**

This regulation applies. For Permanent Means of Access, the requirements contained in table 2 of the Technical provisions for means of access for inspections (resolution MSC.158(78)) shall not apply to tankers converting from single-hull to double-hull. However, if, in the course of conversion, substantial new structures are added, these new structures shall comply with the regulation. The term "substantial new structures" means hull structures that are entirely renewed or augmented by new double bottom and/or double side construction (e.g., replacing the entire structure within cargo area or adding a new double bottom and/or double-side section to the existing cargo area). Additionally, an approved access manual shall be provided.

**SC  
226**  
(cont)**SC226.14 Structural and other requirements for bulk carriers  
SOLAS regulation XII/6.3 (MSC.216(82) Annex 1)**

“3 The double-side skin spaces, with the exception of top-side wing tanks, if fitted, shall not be used for the carriage of cargo.”

**Interpretation**

- **For Single-Hull Tanker to Double-Hull Tanker**

Not relevant.

- **For Single-Hull Tanker to Bulk Carrier/Ore Carrier**

This regulation applies.

**SC  
226**  
(cont)**SC226.15 Structural and other requirements for bulk carriers  
SOLAS regulation XII/6.4 (MSC.216(82) Annex 1)**

*"4 In bulk carriers of 150 m in length and upwards, carrying solid bulk cargoes having a density of 1,000 kg/m<sup>3</sup> and above, constructed on or after 1 July 2006:*

- .1 the structure of cargo holds shall be such that all contemplated cargoes can be loaded and discharged by standard loading/discharge equipment and procedures without damage which may compromise the safety of the structure;*
- .2 effective continuity between the side shell structure and the rest of the hull structure shall be assured; and*
- .3 the structure of cargo areas shall be such that single failure of one stiffening structural member will not lead to immediate consequential failure of other structural items potentially leading to the collapse of the entire stiffened panels."*

**Interpretation**

- **For Single-Hull Tanker to Double-Hull Tanker**

Not relevant.

- **For Single-Hull Tanker to Bulk Carrier/Ore Carrier**

The newly constructed parts of converted bulk carriers of 150 m in length and upwards, carrying solid bulk cargoes having a density of 1,000 kg/m<sup>3</sup> and above, constructed on or after 1 July 2006 shall comply.

**SC  
226**

(cont)

**SC226.16 Survey and maintenance of bulk carriers  
SOLAS regulation XII/7.1**

*"1 Bulk carriers of 150 m in length and upwards of single-side skin construction, constructed before 1 July 1999, of 10 years of age and over, shall not carry solid bulk cargoes having a density of 1,780 kg/m<sup>3</sup> and above unless they have satisfactorily undergone either:*

- .1 a periodical survey, in accordance with the enhanced programme of inspections during surveys required by regulation XI-1/2; or*
- .2 a survey of all cargo holds to the same extent as required for periodical surveys in the enhanced programme of inspections during surveys required by regulation XI-1/2."*

**Interpretation**

- **For Single-Hull Tanker to Double-Hull Tanker**

Not relevant.

- **For Single-Hull Tanker to Bulk Carrier/Ore Carrier**

This regulation is not applicable.

**SC  
226**

(cont)

**SC226.17 Survey and maintenance of bulk carriers  
SOLAS regulation XII/7.2**

*“2 Bulk carriers shall comply with the maintenance requirements provided in regulation II-1/3-1 and the Standards for owners' inspection and maintenance of bulk carrier hatch covers, adopted by the Organization by resolution MSC.169(79), as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the Annex other than chapter I.”*

**Interpretation****• For Single-Hull Tanker to Double-Hull Tanker**

Not relevant.

**• For Single-Hull Tanker to Bulk Carrier/Ore Carrier**

This regulation shall be applied.

**SC  
226**  
(cont)**SC226.18 Information on compliance with requirements for bulk carriers  
SOLAS regulation XII/8**

*"1 The booklet required by regulation VI/7.2 shall be endorsed by the Administration, or on its behalf, to indicate that regulations 4, 5, 6 and 7, as appropriate, are complied with.*

*2 Any restrictions imposed on the carriage of solid bulk cargoes having a density of 1,780 kg/m<sup>3</sup> and above in accordance with the requirements of regulations 6 and 14 shall be identified and recorded in the booklet referred to in paragraph 1.*

*3 A bulk carrier to which paragraph 2 applies shall be permanently marked on the side shell at midships, port and starboard, with a solid equilateral triangle having sides of 500 mm and its apex 300 mm below the deck line, and painted a contrasting colour to that of the hull."*

**Interpretation**

- **For Single-Hull Tanker to Double-Hull Tanker**

Not relevant.

- **For Single-Hull Tanker to Bulk Carrier/Ore Carrier**

This regulation shall be applied.

**SC  
226**

(cont)

**SC226.19 Requirements for bulk carriers not being capable of complying with regulation 4.3 due to the design configuration of their cargo holds  
SOLAS regulation XII/9**

*“For bulk carriers constructed before 1 July 1999 being within the application limits of regulation 4.3, which have been constructed with an insufficient number of transverse watertight bulkheads to satisfy that regulation, the Administration may allow relaxation from the application of regulations 4.3 and 6, on condition that they shall comply with the following requirements:*

- .1 for the foremost cargo hold, the inspections prescribed for the annual survey in the enhanced programme of inspections during surveys required by regulation XI-1/2 shall be replaced by the inspections prescribed therein for the intermediate survey of cargo holds;*
- .2 they are provided with bilge well high water level alarms in all cargo holds, or in cargo conveyor tunnels, as appropriate, giving an audible and visual alarm on the navigation bridge, as approved by the Administration or an organization recognized by it in accordance with the provisions of regulation XI-1/1; and*
- .3 they are provided with detailed information on specific cargo hold flooding scenarios. This information shall be accompanied by detailed instructions on evacuation preparedness under the provisions of section 8 of the International Safety Management (ISM) Code and be used as the basis for crew training and drills.”*

**Interpretation****• For Single-Hull Tanker to Double-Hull Tanker**

Not relevant.

**• For Single-Hull Tanker to Bulk Carrier/Ore Carrier**

This regulation is not applicable.

**SC  
226**

(cont)

**SC226.20 Solid bulk cargo density declaration  
SOLAS regulation XII/10**

*"1 Prior to loading bulk cargo on bulk carriers of 150 m in length and upwards, the shipper shall declare the density of the cargo, in addition to providing the cargo information required by regulation VI/2.*

*2 For bulk carriers to which regulation 6 applies, unless such bulk carriers comply with all relevant requirements of this chapter applicable to the carriage of solid bulk cargoes having a density of 1,780 kg/m<sup>3</sup> and above, any cargo declared to have a density within the range 1,250 kg/m<sup>3</sup> to 1,780 kg/m<sup>3</sup> shall have its density verified by an accredited testing organization."*

**Interpretation**

- **For Single-Hull Tanker to Double-Hull Tanker**

Not relevant.

- **For Single-Hull Tanker to Bulk Carrier/Ore Carrier**

This regulation shall be applied.

**SC  
226**

(cont)

**SC226.21 Loading instrument  
SOLAS regulation XII/11*****“Loading instrument***

*(Unless provided otherwise, this regulation applies to bulk carriers regardless of their date of construction)*

1 *Bulk carriers of 150 m in length and upwards shall be fitted with a loading instrument capable of providing information on hull girder shear forces and bending moments, taking into account the recommendation adopted by the Organization.*

2 *Bulk carriers of 150 m in length and upwards constructed before 1 July 1999 shall comply with the requirements of paragraph 1 not later than the date of the first intermediate or periodical survey of the ship to be carried out after 1 July 1999.*

3 *Bulk carriers of less than 150 m in length constructed on or after 1 July 2006 shall be fitted with a loading instrument capable of providing information on the ship's stability in the intact condition. The computer software shall be approved for stability calculations by the Administration and shall be provided with standard conditions for testing purposes relating to the approved stability information.”*

**Interpretation**

- **For Single-Hull Tanker to Double-Hull Tanker**

Not relevant.

- **For Single-Hull Tanker to Bulk Carrier/Ore Carrier**

This regulation shall be applied.

**SC  
226**  
(cont)**SC226.22 Hold, ballast and dry space water ingress alarms  
SOLAS regulation XII/12*****“Hold, ballast and dry space water ingress alarms***

*(This regulation applies to bulk carriers regardless of their date of construction)*

- 1 *Bulk carriers shall be fitted with water level detectors:*
  - .1 *in each cargo hold, giving audible and visual alarms, one when the water level above the inner bottom in any hold reaches a height of 0.5 m and another at a height not less than 15% of the depth of the cargo hold but not more than 2 m. On bulk carriers to which regulation 9.2 applies, detectors with only the latter alarm need be installed. The water level detectors shall be fitted in the aft end of the cargo holds. For cargo holds which are used for water ballast, an alarm overriding device may be installed. The visual alarms shall clearly discriminate between the two different water levels detected in each hold;*
  - .2 *in any ballast tank forward of the collision bulkhead required by regulation II-1/12, giving an audible and visual alarm when the liquid in the tank reaches a level not exceeding 10% of the tank capacity. An alarm overriding device may be installed to be activated when the tank is in use; and*
  - .3 *in any dry or void space other than a chain cable locker, any part of which extends forward of the foremost cargo hold, giving an audible and visual alarm at a water level of 0.1 m above the deck. Such alarms need not be provided in enclosed spaces the volume of which does not exceed 0.1% of the ship's maximum displacement volume.*
- 2 *The audible and visual alarms specified in paragraph 1 shall be located on the navigation bridge.*
- 3 *Bulk carriers constructed before 1 July 2004 shall comply with the requirements of this regulation not later than the date of the annual, intermediate or renewal survey of the ship to be carried out after 1 July 2004, whichever comes first.”*

**Interpretation****• For Single-Hull Tanker to Double-Hull Tanker**

Not relevant.

**• For Single-Hull Tanker to Bulk Carrier/Ore Carrier**

This regulation shall be applied.

**SC  
226**

(cont)

**SC226.23 Availability of pumping systems  
SOLAS regulation XII/13*****“Availability of pumping systems****(This regulation applies to bulk carriers regardless of their date of construction)*

1 *On bulk carriers, the means for draining and pumping ballast tanks forward of the collision bulkhead and bilges of dry spaces any part of which extends forward of the foremost cargo hold shall be capable of being brought into operation from a readily accessible enclosed space, the location of which is accessible from the navigation bridge or propulsion machinery control position without traversing exposed freeboard or superstructure decks. Where pipes serving such tanks or bilges pierce the collision bulkhead, valve operation by means of remotely operated actuators may be accepted, as an alternative to the valve control specified in regulation II-1/12, provided that the location of such valve controls complies with this regulation.*

2 *Bulk carriers constructed before 1 July 2004 shall comply with the requirements of this regulation not later than the date of the first intermediate or renewal survey of the ship to be carried out after 1 July 2004, but, in no case, later than 1 July 2007.”*

**Interpretation****• For Single-Hull Tanker to Double-Hull Tanker**

Not relevant.

**• For Single-Hull Tanker to Bulk Carrier/Ore Carrier**

This regulation shall be applied.

**SC  
226**  
(cont)**SC226.24 Restrictions from sailing with any hold empty  
SOLAS regulation XII/14**

*“Bulk carriers of 150 m in length and upwards of single-side skin construction, carrying cargoes having a density of 1,780 kg/m<sup>3</sup> and above, if not meeting the requirements for withstanding flooding of any one cargo hold as specified in regulation 5.1 and the Standards and criteria for side structures of bulk carriers of single-side skin construction, adopted by the Organization by resolution MSC.168(79), as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the Annex other than chapter I, shall not sail with any hold loaded to less than 10% of the hold's maximum allowable cargo weight when in the full load condition, after reaching 10 years of age. The applicable full load condition for this regulation is a load equal to or greater than 90% of the ship's deadweight at the relevant assigned freeboard.”*

**Interpretation**

- **For Single-Hull Tanker to Double-Hull Tanker**

Not relevant.

- **For Single-Hull Tanker to Bulk Carrier/Ore Carrier**

This regulation is not applicable.

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