

RULES

FOR THE CLASSIFICATION AND CONSTRUCTION OF CHEMICAL TANKERS

PART II

STRUCTURE OF CHEMICAL TANKER

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RULES FOR THE CLASSIFICATION AND CONSTRUCTION OF CHEMICAL TANKERS

Rules for the Classification and Construction of Chemical Tankers of Russian Maritime Register of Shipping (RS, the Register) have been approved in accordance with the established procedure and come into force on 1 January 2022.

The present edition of the Rules is based on the 2021 edition taking into account the amendments developed immediately before publication.

The provisions of the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code) with relevant amendments thereto implemented by resolutions MSC.460(101) and MEPC.318(74) of the International Maritime Organization (IMO) have been taken into consideration in the Rules.

The Rules establish requirements, which are specific for ships carrying dangerous chemicals in bulk, and supplement the Rules for the Classification and Construction of Sea-Going Ships and Rules for the Equipment of Sea-Going Ships of Russian Maritime Register of Shipping.

The Rules are published in the following parts:

Part I "Classification";

Part II "Structure of Chemical Tanker";

Part III "Cargo Containment";

Part IV "Stability, Subdivision and Freeboard";

Part V "Fire Protection";

Part VI "Systems and Piping";

Part VII "Electrical Equipment";

Part VIII "Instrumentation";

Part IX "Materials of Construction";

Part X "Personnel Protection";

Part XI "Summary of Technical Requirements";

Part XII "Special Requirements";

The Annexes to the Rules are published separately.

REVISION HISTORY

(purely editorial amendments are not included in the Revision History)

For this version, there are no amendments to be included in the Revision History.

1 GENERAL

1.1 The basic structural type of chemical tanker is considered to be a ship with machinery aft.

1.2 The cargo area of chemical tanker shall terminate in cofferdams extending from side to side along the entire height of the ship.

1.3 Requirements for the structure and size of cofferdams are given in 2.7.5.2 of Part II "Hull" of the Rules for the Classification and Construction of Sea-Going Ships¹.

1.4 Pump-rooms, ballast tanks, hold spaces encompassing independent cargo tanks, fuel oil tanks may be also considered as cofferdams.

1.5 If a deckhouse has been fitted instead a poop the forward bulkhead of the deckhouse shall be extended from side to side as a coaming of not less than 600 mm in height above the horizontal portion of the deck.

1.6 Cargoes listed in the List of Cargoes are not allowed to be carried in forepeak and afterpeak tanks.

Cargoes carried by chemical tankers type 3 are allowed to be carried in cargo tanks arranged in double side and double bottom spaces.

1.7 Arrangement and location of cargo tanks, void spaces and other spaces in the cargo area shall ensure unrestricted access for their complete inspection by the personnel wearing protective clothing and individual breathing apparatus as well as ensure unrestricted emergency escape of an unconscious person on a stretcher or in a safety cradle.

1.8 Access to cofferdams, ballast tanks, cargo tanks and other spaces in the cargo area shall be direct from the open deck. Access to double bottom spaces may be through CPR, pump-rooms, deep cofferdams, pipe tunnels, special trunks, provided that adequate ventilation of such spaces and trunks is ensured.

1.9 As a rule, two independent means of escape as widely separated as possible shall be provided in cargo area.

Cargo tanks may have one mean of escape.

1.10 Clear dimensions of the means of escape shall be at least:

600 × 600 mm for means of escape through horizontal openings, manholes, hatches;

600 × 800 mm for means of escape through vertical openings and manholes to provide passage through the length and breadth of the spaces.

The lower edge of the opening shall be situated at a height of not more than 600 mm from the bottom shell plating unless gratings or other footholds are provided.

1.11 Pipe tunnels shall have at least two independent means of escape in the opposite ends of the tunnel, ensuring access to open deck.

Means of escape from the tunnel to pump-rooms or void spaces within the cargo area may be accepted. These means of escape shall have closing arrangement approved by the Register.

1.12 Size and arrangement of pipe tunnel shall ensure unrestricted inspection and repair of piping as well as emergency escape of unconscious.

1.13 Pumps, pipelines, valves and other fittings of systems arranged in cargo area shall have distinctive marking to identify the tank which they serve.

1.14 The carriage of certain vegetable oils identified by the relevant footnote in Part XI "Summary of Technical Requirements" and Annex 3 of the Rules for the Classification and Construction of Chemical Tankers² (refer also to Chapter 17 of the IBC Code, as amended) is permitted if a chemical tanker meets all the requirements for a type 2 ship specified in these Rules.

¹ Hereinafter referred to as "the Rules for the Classification".

² Hereinafter referred to as "these Rules".

As specially decided by the Flag State Maritime Administration, the carriage of vegetable oils may be permitted on the chemical tanker meeting all the requirements for ship type 3 except for cargo tanks location. In this case, the entire cargo tank length shall be protected by ballast tanks or spaces other than tanks that carry oil as follows:

.1 wing tanks or spaces shall be arranged such that cargo tanks are located inboard of the moulded line of the side shell plating nowhere less than 760 mm; and

.2 double bottom tanks or spaces shall be arranged such that the distance between the bottom of the cargo tanks and the moulded line of the bottom shell plating measured at right angles to the bottom shell plating is not less than $B/15$ m or 2,0 m at the centreline, whichever is the lesser. The minimum distance shall be 1,0 m.

2 LOCATION OF CARGO TANKS

2.1 Location of cargo tanks shall satisfy the following requirements:

.1 for chemical tankers type 1 cargo tanks shall be located outside the transverse extent of side damage specified in 3.2.1.2 of Part V "Subdivision" of the Rules for the Classification, and vertical extent of bottom damage specified in 2.5.1.2.3 of the IBC Code, as amended, and nowhere less than 760 mm from the shell plating ([refer to Fig. 2.1.1](#) of this Part);

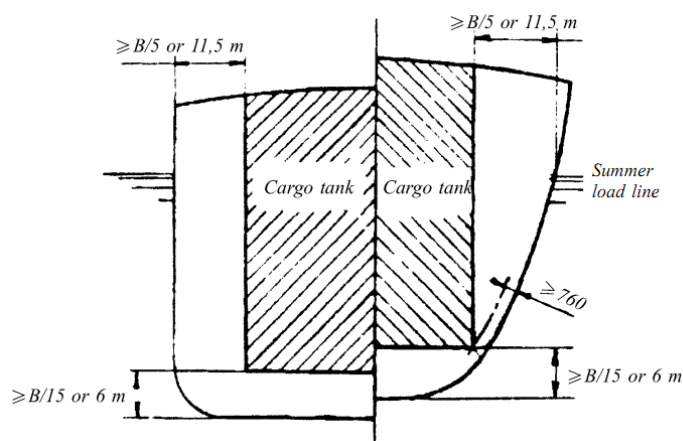


Fig. 2.1.1

.2 for chemical tankers type 2 cargo tanks shall be located outside the vertical extent of bottom damage specified in 2.5.1.2.3 of the IBC Code, as amended, and nowhere less than 760 mm from the shell plating ([refer to Fig. 2.1.2](#) of this Part).

For chemical tankers type 3 no requirements apply to the location of the cargo tanks.

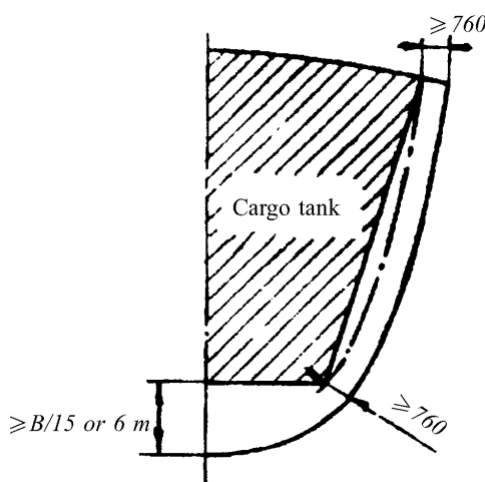


Fig. 2.1.2

2.2 Requirements of [2.1.1](#) and [2.1.2](#) do not apply to tanks for diluted slops.

2.3 Suction wells, except for chemical tankers type 1, installed in cargo tanks may protrude into the vertical extent of bottom damage specified in 2.5.1.2.3 of the IBC Code, as amended, if such wells are as small as practicable and the protrusion below the inner bottom plating does not exceed 25 % of the depth of the double bottom or 350 mm, whichever is less.

Where there is no double bottom, the protrusion of the suction well of independent tanks below the upper limit of bottom damage shall not exceed 350 mm.

Suction wells installed in accordance with this paragraph may be ignored in calculation of damage trim and stability.

2.4 Solid ballast shall not normally be used in the double bottom space in the cargo area.

Where, however, the fitting of solid ballast in such spaces becomes unavoidable, then its disposition shall be governed by the need to ensure that the impact loads resulted from bottom damage are not directly transmitted to the cargo tank structure.

3 CONTROL STATIONS, ACCOMMODATION, SERVICE AND MACHINERY SPACES

3.1 No control stations, accommodation, service and machinery spaces shall be located in way of cargo tanks, cofferdams and spaces separating them and used as cofferdams, except over pump-room recess that complies with 2.4.7 of Part VI "Fire Protection" of the Rules for the Classification.

No cargo or slop tanks shall be aft of the forward end of any accommodation.

Accommodation, service and machinery spaces, and potable water tanks, shall be separated from cargo tanks by cofferdams, CPR, pump-rooms, fuel oil tanks or other similar spaces.

3.2 Location and arrangement of air inlets, doors, sidescuttles and other openings in accommodation, service and machinery spaces and control stations shall meet the requirements imposed upon oil tankers in 2.4.4 and 2.4.5 of Part VI "Fire Protection" and in 12.4 of Part VIII "Systems and Piping" of the Rules for the Classification applied to the oil tankers.

4 CARGO PUMP-ROOMS (CPR)

4.1 Cargo and stripping pumps, cargo handling control equipment and valves shall be situated in a separate room with no direct communication with other spaces, except for pipe tunnels. Such space shall be separated from other spaces by gastight bulkheads.

4.2 Driving machinery for cargo and stripping pumps and fans in CPR shall be installed in compliance with the requirements of 4.2.5 of Part VII "Machinery Installations" of the Rules for the Classification.

4.3 CPR shall be also arranged as to ensure unrestricted access to all valves necessary for cargo handling for persons wearing the required personnel protective equipment and unrestricted passage at all times from the floor and any ladder platform.

4.4 Access ladders shall not be fitted vertical and shall incorporate platforms at the intervals of not more than 6 m in vertical extent. Continuous guard railings shall be installed on all ladders and platforms.

4.5 CPR shall be equipped with permanent arrangements for safe hoisting an unconscious person wearing protective equipment with a rescue line.

4.6 Pump discharge pressure gauges shall be provided at the pumps and outside CPR.

4.7 Means shall be provided to deal with drainage and any possible leakage from cargo pumps, valves and pipelines in CPR. The bilge system serving CPR shall be operable from outside CPR.

Russian Maritime Register of Shipping

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Part II
Structure of Chemical Tanker

FAI "Russian Maritime Register of Shipping"
8, Dvortsovaya Naberezhnaya,
191186, St. Petersburg,
Russian Federation
www.rs-class.org/en/