



INTERNATIONAL SHIP CLASSIFICATION

**GUIDELINES FOR STATUTORY
SURVEYS OF INLAND WATERWAY
SHIPS**

2015

**PART SEVEN CONSTRUCTION AND EQUIPMENT FOR
THE PREVENTION OF POLLUTION FROM SHIPS**

CONTENTS

CHAPTER 1	GENERAL PRINCIPLES.....	3
Section 1	GENERAL PROVISIONS.....	3
CHAPTER 2	PREVENTION OF POLLUTION BY OIL.....	4
Section 1	GENERAL PROVISIONS.....	4
Section 2	CONSTRUCTION AND EQUIPMENT FOR THE PREVENTION OF OIL POLLUTION FROM SHIPS.....	8
CHAPTER 3	CONTROL OF POLLUTION BY NOXIOUS LIQUID SUBSTANCES IN BULK.....	8
Section 1	GENERAL PROVISIONS.....	8
Section 2	CONTROL OF DISCHARGE.....	9
CHAPTER 4	PREVENTION OF POLLUTION BY HARMFUL SUBSTANCES CARRIED BY SHIPPING IN PACKAGED FORM.....	9
Section 1	GENERAL PROVISIONS.....	9
Section 2	CONTROL OF DISCHARGE.....	10
CHAPTER 5	PREVENTION OF POLLUTION BY SEWAGE FROM SHIPS.....	10
Section 1	GENERAL PROVISIONS.....	10
Section 2	CONSTRUCTION AND EQUIPMENT FOR THE PREVENTION OF SEWAGE POLLUTION FROM SHIPS.....	11
CHAPTER 6	PREVENTION OF POLLUTION BY GARBAGE FROM SHIPS.....	13
Section 1	GENERAL PROVISIONS.....	13
Section 2	COLLECTING AND STORAGE OF THE GARBAGE.....	13
CHAPTER 7	PREVENTION OF AIR POLLUTION FROM SHIPS.....	15
Section 1	GENERAL PROVISIONS.....	15
Section 2	CONTROL OF DISCHARGE.....	15
CHAPTER 8	CONTROL OF HARMFUL ANTI-FOULING SYSTEMS ON SHIP FROM POLLUTING WATER AREAS.....	17
Section 1	GENERAL PROVISIONS.....	17
Section 2	CONTROL REQUIREMENTS FOR ANTI-FOULING SYSTEMS ON SHIP...	17

CHAPTER 1 GENERAL PRINCIPLES

Section 1 GENERAL PROVISIONS

1.1.1 Application

1.1.1.1 Unless expressly provided otherwise, this Part applies to the following pollution from the civil inland waterways ships for water environment:

- (1) pollution by oil;
- (2) pollution by noxious liquid substances;
- (3) pollution by harmful substances carried by shipping in packaged form;
- (4) pollution by sewage from ships;
- (5) pollution by garbage from ships;
- (6) air pollution;
- (7) pollution to waters by harmful anti-fouling systems on ships.

1.1.1.2 Ships are to comply with the relevant provisions of the Administration.

1.1.2 Exceptions

1.1.2.1 The provisions of each chapter of this Part for oily mixtures, noxious liquid substances, packaged harmful substances, sanitary sewages, ship garbages and prevention of air pollution from ships do not apply to the following conditions:

- (1) the discharge from ships necessary for the purpose of securing the safety of a ship and those on board or saving life at water;
- (2) the discharge resulting from the damage to ship or equipment and all reasonable precautions have been taken after occurrence of the accident;
- (3) the discharge from ships for special purpose is approved by the Administration.

CHAPTER 2 PREVENTION OF POLLUTION BY OIL

Section 1 GENERAL PROVISIONS

2.1.1 Application

2.1.1.1 Unless expressly provided otherwise, this Chapter applies to all civil inland waterways ships that may generate any slop.

2.1.2 Definitions

2.1.2.1 An *oily water separator* refers a separator or a filter, or any combination thereof, of which the construction may ensure that the oil content of the processed water is not to exceed 15ppm.

2.1.2.2 *Oily bilge water* refers the bilge water in machinery spaces such as engine and boiler room, steering gear room and shafting tunnel.

2.1.2.3 A *slop tank (cabinet)* refers the tank (cabinet) used for preserving oily bilge water, oily ballast water, oil tank washing water and other oily water.

2.1.2.4 *Sewage disposed* refers the sewage disposed by oily water separator, which is drained into waterways.

2.1.2.5 *Oil residue* refers the oil residue processed by oily water separator and, which is separated.

2.1.2.6 *Oil record book* refers the oil operation record book which is provided by the port state authority to ships, and is uniform.

2.1.2.7 *ppm* refers parts of oil per million parts of water (mL/m³).

2.1.2.8 A *zero-discharge water area* refers the areas into which the discharge of sewage containing oil is forbidden. It generally refers the water areas of which the Administration stipulates special protections, such as drinking-water intake areas, scenic water areas and so on.

2.1.3 Equivalents

2.1.3.1 An alternative may be allowed instead of any fitting, material, appliance or apparatus required by this Chapter for the prevention of oil pollution, if such alternative used is at least as effective as that mentioned above and its inspection and tests have been approved by the Administration. Nevertheless, it is not to be allowed that substitution of operational methods to affect the control of discharge of oil as equivalent to those design and construction feature which are prescribed by regulations in this Chapter.

2.1.4 Control for discharge

2.1.4.1 In order to prevent oily bilge water from polluting water areas, ships are to take one of the following measures:

(1) Slop tanks (cabinets) are to be fitted to store oily water on ships and be periodically discharged into shore reception facilities. Discharging slops directly to outboard are to be forbidden. Slop tanks (cabinets) are to be fitted according to the requirements of 2.2.1 and 2.2.2 of this Chapter;

(2) Oily water treatment plants are to be fitted, which may ensure that the oil content of the processed water is not to exceed 15ppm. Oily water treatment plants are to be fitted according to the requirements 2.2.3 of this Chapter.

2.1.4.2 For ships navigating in zero-discharge water areas, the discharge control is to meet the provisions of 2.1.4.1 (1) of this Section.

2.1.5 Oil record book and oil pollution emergency plan

2.1.5.1 Oil tankers with gross tonnage not less than 150 and other ships with gross tonnage not less than 400 may be provided with Oil Record Book and Oil Pollution Emergency Plan stipulated by ISC.

Section 2 CONSTRUCTION AND EQUIPMENT FOR THE PREVENTION OF OIL POLLUTION FROM SHIPS

2.2.1 Slop tanks (cabinets)

2.2.1.1 The volume *V* of slop tanks (cabinets) is not to be less than the value calculated from the following formula:

$$V = 2 \left(\frac{0.6P + 35}{24} \right) t \cdot 10^{-3} \quad \text{m}^3$$

where: P ---the total rated output of main and auxiliary diesel engines, in kW;

t ---the time span (h) during which the ship plan to discharge slop. The interval at which the ships plan to discharge slop is to be determined according to the actual usage of ships, but it is not to be less than 24h. For ships operating within harbours, the interval may be appropriately loosed, but it is not to be less than 8h.

2.2.1.2 For the ships of which the total rated output of main and auxiliary diesel engines is 22kW and below, other simple and effective facilities may be provided to store oily bilge water periodically discharged into reception facilities, with the consent of the Administration. Discharging the slop directly to outboard is to be forbidden.

2.2.2 Construction of slop (sludge) tanks (cabinets)

2.2.2.1 The cofferdam is to be provided between the slop tank (sludge) and the clean water tank which contain drinking or boiler feed water. The pipes of the slop (sludge) tank are to not pass through the clear water tanks. If unavoidable, the watertight pipe passage or watertight case pipe is to be provided outside of them, and there are not to be detachable connection in the clean water tanks.

2.2.2.2 The slop (sludge) tank is to be fitted with the air pipes and sounding pipes. The slop (sludge) cabinet is to be fitted with air pipe and liquid-meter. The sludge tank (cabinet) is to be so designed and arranged as to easily be cleaned or washed.

2.2.3 Oily water separators and control systems

2.2.3.1 For the ships of which the total rated output of main and auxiliary diesel engine is 220 kW and above, at least one set of oily water separator is to be fitted during construction. The oily water separator is to be designed, constructed and tested in accordance with the specifications ¹recommended by IMO, and approved by ISC.

2.2.3.2 The ships of which the total rated output of main and auxiliary diesel engine is less than 220kW are to be fitted with at least one set of oily water separator with the schematic diagram shown as figure 2.2.3.2.

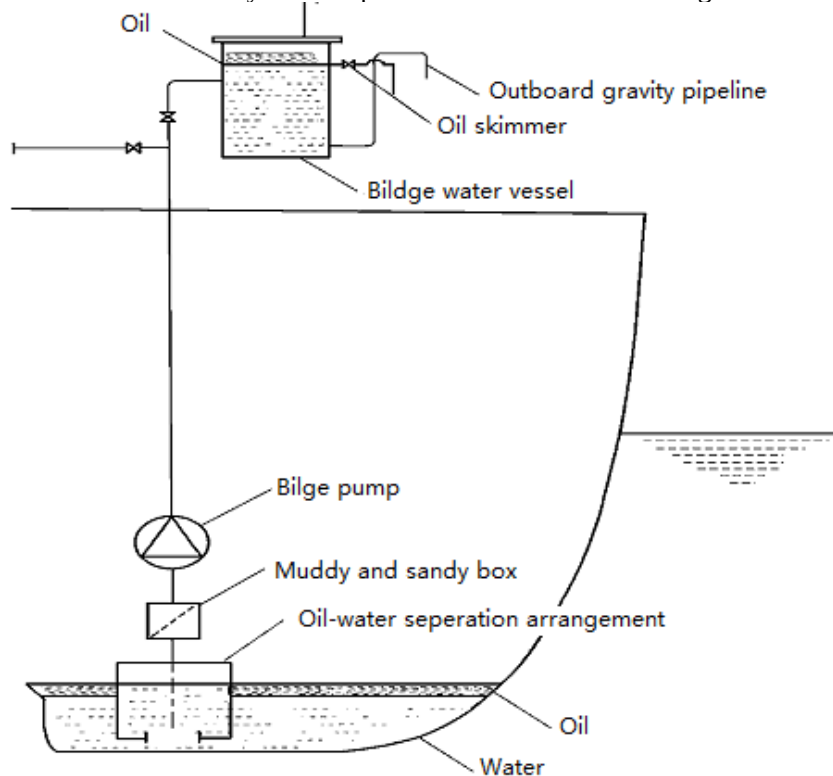


Figure 2.2.3.2

2.2.3.3 Oil-water separating equipment are to normally work when the ship is under the following

¹ Refer to the Revised Guidelines and Specifications for Pollution Prevention Equipment for Machinery Spaces Bilges of Ships, adopted by the Maritime Safety Committee by resolution MSC.107 (49).

conditions for a longtime:

list up to 10° ; trim up to 5° .

2.2.3.4 The oily water separator is to be located as far from the vibration source as possible. If the vibration is so heavy that its function is affected, the measure of reducing vibration is to be properly carried out.

2.2.3.5 Oily water separators are to be placed as to reserve enough passage and space in order to examine and repair conveniently.

2.2.3.6 The discharge of the water processed by an oily water separator is to be manually controlled.

2.2.3.7 The ship fitted with an oily water separator is to be provided with spares for the wearing parts.

2.2.3.8 The ship fitted with an oily water separator is to be provided with a sludge tank (cabinet) to store oil residue.

2.2.3.9 For the small ships of which the total rated output of main and auxiliary diesel engine is less than 110Kw and are difficult in fitting with sludge tank (cabinet), simple sludge tank may be fitted to store oil residues.

2.2.3.10 The oily water separator used on the ship is to be large enough to treat the oily water produced on the ship, and the oily water may be calculated referring to 2.2.1.1 of this Section.

2.2.4 Arrangement of fuel oil tanks

2.2.4.1 The fuel oil tank is to be constructed to avoid oil spilling caused by collision. For a fuel oil tank with a capacity of not less than 30m^3 , the maximum distance between it and the shell plate is not to be less than 0.76m.

2.2.5 Arrangement for piping and discharge connection

2.2.5.1 The oily water separator and slop (oil residue) tank (cabinet) are to be provided with suction piping, which are to be as short as possible, and not concurrently used for other way.

2.2.5.2 The suction piping located before the oily water separator are to be fitted with a filter screen and a mud box. The filter screen and mud box are so fitted as to easily clean.

2.2.5.3 The discharge opening of processed water is to be located above the loadline. If it is below the loadline, a non-return valve or a storm valve is to be provided. The discharge opening of processed water is to be as far from the water inlet as possible.

2.2.5.4 The ship is to be provided with discharging pipes which are not to be used for any purpose other than the discharge of the oily bilge water into a reception facility (or other simply and effective facilities).

2.2.5.5 The discharge pipes are to be extended to the freeboard deck. The discharging pipes are to be so arranged as to facilitate their connecting with the reception pipes.

2.2.5.6 The connection pipe of the discharging pipes is to be fitted with a standard discharge connection as shown in Figure 2.2.5.6.

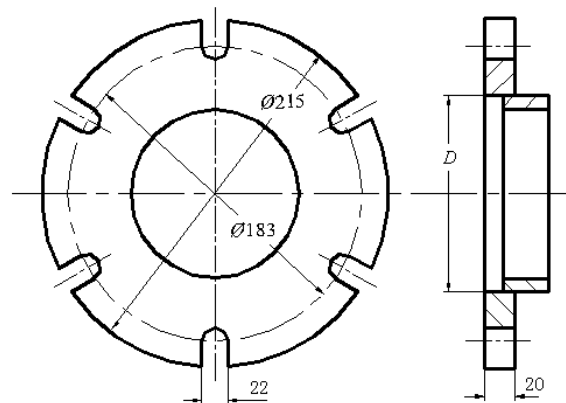


Figure 2.2.5.6

2.2.6 Additional requirements for oil tankers (including oil barges)

2.2.6.1 The oil tankers are not to carry ballast water in a cargo tank. In a particular case, the ballast water loaded in a cargo tank may be discharged to the reception facility and are forbidden to be discharged to waterways.

2.2.6.2 The washing tank water of an oil tanker are to be discharged to the reception facility and forbidden to be discharged to waterways.

2.2.6.3 When washing tanks of an oil tanker, if the washing water can not be immediately discharged to shore reception facilities, a slop tank with an enough volume is to be provided or a cargo tank are to be

appointed as the slop tank to store all washing water. Slop from cargo oil are not to be drained to the engine room.

2.2.6.4 The structural configuration within cargo oil areas of an oil tanker is to comply with the provisions of 2.1.15.1 of CHAPTER 2 of PART FIVE of the Guidelines.

2.2.7 Miscellaneous

2.2.7.1 Oils cannot be carried in the cabins of fore peak or cabins at the front of collision bulkhead.

2.2.7.2 The oil tray is to be provided around deck machinery to prevent the leakage of oil residue from polluting waterways.

2.2.7.3 The oil residue leaked from steering gear room, shaft passage and deck machinery are to be led to the slop (oil residue) or sludge tank (cabinet) and forbidden to be discharged overboard.

2.2.7.4 The waste lubricating oil and the oil from washing machinery are to be appropriately handled and forbidden to be discharged overboard.

2.2.7.5 The greasy dirt, such as the filter core of oily water separator, are to be appropriately preserved on the ship or handled by suitable methods, and forbidden to be thrown into waterways.

CHAPTER 3 CONTROL OF POLLUTION BY NOXIOUS LIQUID SUBSTANCES IN BULK

Section 1 GENERAL PROVISIONS

3.1.1 Application

3.1.1.1 Unless expressly provided otherwise, this applies to all inland waterways navigating ships carrying noxious liquid substances in bulk.

3.1.1.2 Noxious liquid substances refer to any substances in Class X, Y or Z specified in the pollution category of CHAPTER 17 or CHAPTER 18 in International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC CODE). The liquid substances not specified in the pollution category of CHAPTER 17 or CHAPTER 18 in International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC CODE), are to be considered to be noxious liquid substances prior to the classification according to provisions.

Section 2 CONTROL OF DISCHARGE

3.2.1 Control of discharge

3.2.1.1 The discharge into the water of residues of noxious liquid substances or ballast water, tank washings or other mixtures containing such substances is to be prohibited.

3.2.1.2 The residues of noxious liquid substances or ballast water, tank washings or other mixtures containing such substances on board are to be delegated to the shore to treat.

CHAPTER 4 PREVENTION OF POLLUTION BY HARMFUL SUBSTANCES CARRIED BY SHIPPING IN PACKAGED FORM

Section 1 GENERAL PROVISIONS

4.1.1 Application

4.1.1.1 Unless expressly provided otherwise, this Chapter applies to all inland waterway ships carrying harmful substances in packaged form mentioned in PART SIX of the Guidelines.

Section 2 CONTROL OF DISCHARGE

4.2.1 Control of discharge

4.2.1.1 The discharge into the water of the harmful substances and their residues or slops containing such substances is to be prohibited.

4.2.1.2 The harmful substances or slops containing such substances on board are to be delegated to the shore to treat.

4.2.1.3 Empty packaging which has been used previously for the carriage of harmful substances is to themselves be treated as harmful substances unless adequate precautions have been taken to ensure that they contain no residue that is harmful to the environment.

CHAPTER 5 PREVENTION OF POLLUTION BY SEWAGE FROM SHIPS

Section 1 GENERAL PROVISIONS

5.1.1 Application

5.1.1.1 Unless expressly provided otherwise, this Chapter applies to the following inland waterway ships:

- (1) ships with gross tonnage not less than 400;
- (2) ships with gross tonnage less than 400 but approved personnel carried on ship greater than 15.

5.1.1.2 For ships applicable to 5.1.1.1 of this Section, when such ships do not produce sewage (such as no lavatory is fitted), the provisions in 5.1.3.1 may be exempted.

5.1.2 Definitions

5.1.2.1 Sewage refers the following waters:

- (1) fecal sewage discharged in any form;
- (2) sewage discharged from dispensaries (pharmacies and wards);
- (3) excrement from living animals;
- (4) other waste water containing the aforementioned discharges.

5.1.2.2 A hold tank (cabinet) —means a tank (cabinet) used for the collection and storage of sewage.

5.1.2.3 A sewage treatment plant—means a plant used for reducing such indexes as coliform bacteria, suspended solid and biochemical oxygen demand in the sewage and so on.

5.1.2.4 A packing and collecting facility—refers a facility used for collecting the sewage (excluding wash-down water) in package form.

5.1.2.5 A reception facility—refers a facility fitted on the shore or on board (sewage collecting ships) and used for receipting the sewage.

5.1.2.6 Discharge water—means the sewage which is treated by a sewage treatment plant and is comparable to the emission standards so that it can be discharged into the water.

5.1.2.7 The number of persons—refers the total number of the crew and passengers certified to carry on board.

5.1.2.8 Zero-discharge water areas —refers the areas into which the discharge of sewage containing oil is forbidden. It generally refers the water areas of which the Administration stipulates special protections, such as drinking-water intake areas, scenic water areas and so on.

5.1.3 Control of discharge

5.1.3.1 The ships (including pontoons), are to be equipped with one of the following equipments for the prevention of sewage pollution from ships:

(1) a sewage holding tank (cabinet) of the capacity to hold all sewage from the ship, which is to discharge the sewage to shore reception facilities;

(2) a sewage treatment plant which is used for treating the sewage so that it is comparable to the emission standards and can be discharged into the water;

(3) a packing and collecting facility (no-flush) which is used for collecting the sewage (excluding wash-down water) in package form and discharging the sewage to shore reception facilities.

5.1.3.2 The treated sewage is to be discharged to avoid the tapping water resources and not be discharged when the ship is berthing alongside wharf.

5.1.3.3 The discharge of treated sewage is to be controlled and to not be done at any moment. The discharge is to be done when the ship is on voyage.

5.1.3.4 The catering sewage² is to be discharged to sewage holding tank (cabinet) and received by relevant department on board/shore. Restaurant pontoons (including catering supply ships)

5.1.3.5 Catering sewage of passenger ships navigating in inland waterways is to not be discharged to water areas and to be stored in special containers and received by relevant departments on board/shore. Solids in catering sewage are to be collected and stored according to relevant provisions in CHAPTER 6 of this Part.

5.1.3.6 Small ships other than those specified in 5.1.1 of this Section are to use simple collection

² Only refers to residual oil, leftovers, soups.

equipment and measures as much as possible to avoid discharging the untreated waste water to water areas.

5.1.3.7 For ships navigating in zero-discharge water areas, the discharge control are to meet the provisions of 5.1.3.1 (1) or 5.1.3.1 (3) of this Section.

Section 2 CONSTRUCTION AND EQUIPMENT FOR THE PREVENTION OF SEWAGE POLLUTION FROM SHIPS

5.2.1 General requirements

5.2.1.1 Ships fitted with a sewage holding tank (cabinet) are to be fitted with pump and piping that are convenient for discharging sewage to reception facilities.

5.2.1.2 The tanks (cabinets), treatment tanks, pipes and other fittings of the sewage systems are to be made of steel or other equivalent materials, and the anticorrosion precautions are to be taken into account.

5.2.1.3 The sewage systems are to be so designed and installed as to be easy to maintain.

5.2.1.4 The sewage pipes are to not pass through oil tanks or water tanks.

5.2.1.5 The sewage pipes are to not pass through passenger's cabins, galleys and so on. If this is not possible, these spaces are to not be fitted with detachable connections.

5.2.1.6 Sewage holding tanks (cabinets) and sewage treatment plants are to be fitted with a liquidometer or other equivalent facilities.

5.2.1.7 The tanks (cabinets) and treatment cabinets mentioned above are to be fitted with a liquid alarm or other equivalent facilities to avoid the sewage to overflow.

5.2.1.8 The tanks (cabinets) mentioned above are to be fitted with a vent pipe which is to lead to the atmosphere or appropriate spaces. The end of the vent pipe is to be fitted with a metal flamescreen where inflammable gas may occur in the tank (cabinet).

5.2.1.9 A liquidometer and vent pipe may be exempted for the sewage vacuum storage.

5.2.1.10 For ships fitted with a sewage treatment plant, emergency by-pass lines are to be fitted in order to discharge sewage outboard.

5.2.2 Sewage holding tanks (cabinets)

5.2.2.1 A sewage holding tank is to not be adjacent to water tanks or oil tanks. If this is not possible, it is to be separated from these tanks by a cofferdam.

5.2.2.2 The volume of a sewage holding tank (cabinet) is to not be less than the value calculated from the following formula:

$$V_s = f \cdot p \cdot D \cdot q \cdot 10^{-3} \quad \text{m}^3$$

where: V_s — volume of sewage holding tank (cabinet), in m^3 ;

p — persons on board, p ;

D — days for holding sewage, d ;

q — sewage amount produced by each person every day, $\text{L}/\text{P} \cdot \text{d}$: if vacuum lavatory is used, $q=25$; if common lavatory is used, $q=50$;

f — service conditions coefficient. For ships with continuous navigating time greater than 8h, f is 1; for ships with continuous navigating time greater than 4h, f is 0.5; ships with continuous navigating time greater than 2h, f is 0.1. f is to be determined by interpolation.

5.2.3 Sewage treatment plants

5.2.3.3 A sewage treatment plant is to normally work when the ship is under the following conditions for a longtime:

list up to 10° ; trim up to 5° .

5.2.3.2 The discharge of the water processed by a sewage treatment plant is to be manually controlled.

5.2.3.3 The sewage treatment plant is to be so arranged that the sewage and discharge water are to be easily sampled.

5.2.3.4 The space fitted with a sewage treatment plant is to be kept good ventilation.

5.2.3.5 The sewage treatment plant is to be so arranged as to discharge or receipt the sludge.

5.2.3.6 The sludge and sullage from a sewage treatment plant is to not be discharged into the water.

5.2.3.7 The water quality standard and performance test of sewage treatment plant are to meet the relevant provisions of Revised Guidelines on Implementation of Effluent Standards and Performance Tests for Sewage Treatment Plants adopted by IMO by Resolution MEPC.159 (55).

5.2.3.8 The sewage treatment plant used on board is to match with the sewage volume produced on board. The sewage volume may be determined according to the calculation method stipulated in 5.2.2.2.

5.2.4 Packing and collecting facilities

5.2.4.1 The packed sewage (excluding wash-down water) are to be sent to shore reception facilities as fast as possible.

5.2.4.2 A packing and collecting facility is to be safe and reliable.

5.2.4.3 The storage spaces are to be of good ventilation.

5.2.5 Standard discharge connection for sewage

5.2.5.1 In order to connect the pipes of shore reception facilities and the discharge pipes of sewage, the two groups of pipes are to be fitted with the standard discharge connections shown as Figure 5.2.5.1. The discharge connections are to be capable to rapidly and conveniently connect to shore reception facilities.

5.2.5.1 In order to connect the pipes of shore reception facilities and the discharge pipes of sewage, the two groups of pipes are to be fitted with the standard discharge connections meeting the following requirements. The discharge connections are to be capable to rapidly and conveniently connect to shore reception facilities. The standard discharge connection is shown as Figure 5.2.5.1.

(1) The flange of a standard connection is to be capable to fit for the pipes with an inside diameter of not more than 100mm;

(2) A standard connection is to sustain the pressure of 0.6MPa.

(3) The bolts of the flange are 4×φ16mm.

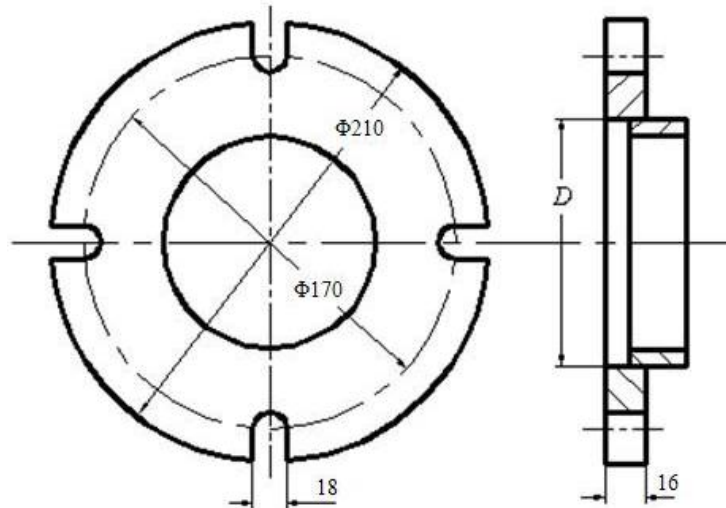


Figure 5.2.5.1

CHAPTER 6 PREVENTION OF POLLUTION BY GARBAGE FROM SHIPS

Section 1 GENERAL PROVISIONS

6.1.1 Application

6.1.1.1 Unless expressly provided otherwise, this Chapter applies to all inland waterways ships.

6.1.2 Definitions

6.1.2.1 Garbage—means all kinds of victual, domestic and operational generated during the normal operation of the ship and liable to be disposed of continuously or periodically.

6.1.2.2 A garbage collecting device—means a container used for stowing the garbage.

6.1.2.3 A garbage pressing plant—refers a plant to reduce the volume of the garbage.

6.1.2.4 The number of persons—refers the total number of the crew and passengers certified to carry on board.

6.1.2.5 A reception facility—refers a facility to receipt the garbage.

6.1.3 Control of discharge

6.1.3.1 All garbages are to be stored in the garbage collecting device and received by relevant departments on board/shore periodically. Discharge to water areas is forbidden.

6.1.4 Signboard, garbage management plan and garbage record book

6.1.4.1 Ships with a length of 12m or over are to be provided with unified signboards, of which the size, content and installation are to comply with the relevant provisions of ISC.

6.1.4.2 Ships with gross tonnage of 400 or over and ships with persons on board of 15 or over are to be provided with the garbage management plan approved by ISC. The plan is to provide written procedure for garbage collection, storage and treatment and is to assign persons for executing the plan.

6.1.4.3 Ships with gross tonnage of 400 or over and ships with persons on board of 15 or over are to be provided with the garbage record book approved by ISC to record discharge operation each time.

Section 2 COLLECTING AND STORAGE OF THE GARBAGE

6.2.1 Garbage collecting devices

6.2.1.1 The structure of the garbage collecting device may be mobile or be fixed and be part of the ship's structure.

6.2.1.2 It is suggested for new ships to be fitted with a fixed garbage collecting device, which are to meet the following requirements:

(1) the opening of the collecting device is to be fitted with a cover which can be closely closed;

(2) the collecting device is to be made of incombustible material and are to be anticorrosive;

(3) the collecting device is to be regularly sterilized and be easy to clean;

(4) the collecting device is to be of a capacity having regard to the voyage and the number of persons on board;

(5) the collecting device is to be compatible to shore reception facilities. The bottom of the collecting device is to incline to the garbage outlet for at least 30°, and the bottom of the garbage outlet is to be provided with a driver to open the garbage outlet.

6.2.1.3 A garbage collecting device of mobile structure is to have linings with sufficient strength. A garbage collecting device of mobile structure is to prevent from turning over.

6.2.1.4 Total volume V of garbage collecting device may be determined according to the following formulae:

$$V = G \cdot P \cdot T \cdot 10^{-3} \quad \text{m}^3$$

where: G ---sewage amount produced by each person every day during voyage, L/P•d; generally, $G = 2.5$;

P ---persons on board, p ;

T ---intervals between garbage cleaning, d .

6.2.1.5 The garbage from ships are to be collected in accordance with its categories and are to comply with the provisions of the port authority.

6.2.1.6 It is suggested to group the garbage into categories as follows and the garbage are to be marked:

- (1) food wastes;
- (2) plastic wastes;
- (3) other garbage.

6.2.1.7 The garbage from dispensaries are to be sterilized.

6.2.1.8 The garbage collecting device is to be located at the position with good ventilation and to be located far away from the accommodation spaces, dining-room and galley and so on as far as possible.

6.2.1.9 The arrangement of garbage collecting device is to not cause unfavorable influence on passage and escape.

CHAPTER 7 PREVENTION OF AIR POLLUTION FROM SHIPS

Section 1 GENERAL PROVISIONS

7.1.1 Application

7.1.1.1 Unless expressly provided otherwise, this Chapter applies to all inland waterways ships.

7.1.2 Definitions

7.1.2.1 New installation---in relation to regulation 7.2.1 of this Chapter, means that installation of systems, equipment, including new portable fire-extinguishing units, insulation, or other material on a ship, but excludes repair or recharge of previously installed systems, equipment, insulation, or other material, or recharge of portable fire-extinguishing units.

7.1.2.2 Ozone-depleting substances---means chemical substances which deplete the ozone layer and hazard the human living environment. Ozone-depleting substances that may be found on board include, but are not limited to:

Halon 1211 Bromochlorodifluoromethane

Halon 1301 Bromotrifluoromethane

Halon 2402 1,2-Dibromo-1, 1, 2, 2-tetrafluoroethane (also known as Halon 114B2)

CFC-11 Trichlorofluoromethane

CFC-12 Dichlorodifluoromethane

CFC-113 1, 1, 2-Trichloro-1, 2, 2-trifluoroethane

CFC-114 1, 2-Dichloro-1, 1, 2, 2-tetrafluoroethane

CFC-115 Chloropentafluoroethane

7.1.2.3 Significant alteration of diesel engines refer to one or more of the following changes:

(1) diesel engines are replaced by other diesel engines or newly installed;

(2) any material alterations defined in the Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines happened to diesel engines;

(3) compared with the maximum continuous rated power in the initial certificate of diesel engine, the maximum continuous rated power of diesel engines increased by more than 10%.

Section 2 CONTROL OF DISCHARGE

7.2.1 Control of discharge of ozone-depleting substances

7.2.1.1 Any deliberate emissions of ozone-depleting substances are to be prohibited. Deliberate emissions include emission occurring in the course of maintaining, servicing, repairing or disposing of systems or equipment, except that deliberate emissions do not include minimal release associated with the recapture or recycling of an ozone-depleting substance.

7.2.1.2 New installations which contain ozone-depleting substances are to be prohibited on all ships except that new installations containing hydrochlorofluorocarbons (HCFCs) are permitted until 1 January 2020.

7.2.1.3 The substances referred to in this regulation are to be delivered to appropriate reception facilities when removed from ships.

7.2.2 Control of discharge of Nitrogen oxides (NO_x)

7.2.2.1 This regulation applies to each diesel engine with a power output of more than 130kW.

7.2.2.2 This regulation does not apply to emergency engines, diesel engines installed in lifeboats and any device or equipment intended to be used solely in case of emergency.

7.2.2.3 For diesel engines applying to this regulation, the emission of NO_x (calculated as the total weighted emission of NO₂) from the engines is within the following limits:

(1) 14.4g/kWh when $n < 130\text{r/min}$;

(2) $44n^{(-0.23)}\text{g/kWh}$, when $130\text{r/min} \leq n < 2000\text{r/min}$;

(3) 7.7g/kWh, when $n \geq 2000\text{r/min}$.

Where n is the rated diesel engine speed (crankshaft revolutions per minute).

7.2.2.4 Diesel engines are to be provided with relevant certificate or documentary evidence required in 7.2.2.3.

7.2.2.5 A diesel engine after modification of a major character is to comply with the requirements of 7.2.2.3 of this Section.

7.2.2.6 The test procedure and measuring method for marine diesel engines are to meet the requirements of the Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines (Resolution MEPC.177 (58)).

7.2.3 Control of discharge of sulfur oxides (SO_x)

7.2.3.1 Sulphur contents of fuel oil used on board are to not exceed 3.5% (by mass ratio, m/m).

7.2.3.2 A written evidence for sulphur contents of fuel oil is to be provided on board for check by a Surveyor.

CHAPTER 8 CONTROL OF HARMFUL ANTI-FOULING SYSTEMS ON SHIP FROM POLLUTING WATER AREAS

Section 1 GENERAL PROVISIONS

8.1.1 Application

8.1.1.1 This Chapter applies to all inland waterways ships equipped with the anti-fouling system.

8.1.2 Definitions

8.1.2.1 Anti-fouling system refers to a coating, paint, surface treatment or device used on a ship to control or prevent attachment of unwanted organisms.

Section 2 CONTROL REQUIREMENTS FOR ANTI-FOULING SYSTEMS ON SHIP

8.2.1 General requirements

8.2.1.1 An anti-fouling system on ship is to not contain organo-tin compounds used as biocides.

8.2.1.2 Anti-fouling paint are to be provided with relevant certificate or documentary evidence for certifying no organo-tin compounds used as biocides are contained.