

# SHANGHAI HIGHWOODS SHIP CO., LTD.

## Standard-GB3552-2018 of P.R. Of China

### Discharge Standard for water pollutants from Ship GB3552-2018

#### 1. Scope of application

The standard stipulates the control requirements and testing requirements for the pollutant discharge from the oily and domestic sewage of the ship, the requirements for the control of the discharge of toxic liquid substances and the discharge of marine waste, as well as the implementation and supervision of the standard.

This standard is applicable to the field of People's Republic of China and other sea areas under jurisdiction, and the ships are supervised and managed by ships to discharge oily sewage, domestic sewage, sewage containing toxic liquid substances and ship garbage to the environmental water body. This standard does not apply to temporary emissions necessary for the safety of ships or for the safety of life on the water.

This standard applies to pollutants emitted by law. The management of the discharge of marine pollutants in inland rivers and other special protected areas is in accordance with the law of the People's Republic of China environmental protection law, the law on the prevention and control of water pollution of the People's Republic of China, the law on the protection of the marine environment of the People's Republic of China, the regulations on the control of the environmental management of the marine pollution of the sea by the prevention and control of the marine pollution by the People's Republic of China The specific provisions on the prohibition of dumping of garbage, the prohibition of the discharge of toxic liquid substances, the prohibition of pollutant discharge in the protected area of drinking water, the prevention of overflow and leakage of Shipborne goods, etc.

#### 2. Standard reference files (omission)

#### 3. Glosary and definitions (omission)

#### 4. Ccontrol requirements for the discharge of oily sewage

##### 4.1 Discharge control requirements for oily sewage from ships shall be carried out in accordance with table 1.

Pollutants Type	Waters	Ship category	Requirement
Engine room Sludge, residue	Inland Waters	A ship built before January 1, 2021	Implemented or collected and discharged into receiving facilities according to this standard 4.2 since July 1, 2018.

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		A ship built after January 1, 2021	Collect and put in the receiving facility	
	Coastal	400 gross tonnage and above	Implemented or collected and discharged into receiving facilities according to this standard 4.2 since July 1, 2018.	
		Less than 400 gross tonnage	Non fishing vessel	Implemented or collected and discharged into receiving facilities according to this standard 4.2 since July 1, 2018.
			Fishing boat	(1) From July 1, 2018 to December 31, 2020, carry out this standard (2) Implemented or collected and discharged into receiving facilities according to this standard 4.2 since July 1, 2021.
slops	Inland Waters	All type of tankers	Collect and dispose to reception facilities since July 1, 2018	
	coastal	Tanker with 150 GT and above	Since July 1, 2018, collect and dispose waste into the reception facilities or discharged during ship navigation under the conditions: (1) the oil tanker is more than 50 nautical miles away from the nearest shore (2) the instantaneous discharge rate of oily water discharged into the sea does not exceed 30 liters / nautical miles. (3) the amount of oily water discharged into the sea does not exceed 1/30000 of the total volume of cargo oil. (4) the oil discharge monitoring system works properly.	
		GT less than 150	Collect and dispose to reception facilities since July 1, 2018	

4.2 The sludge discharge control table of the mechanical premises shall be implemented according to the provisions of Table 2, and the discharge shall be carried out in the course of vessel navigation.

Table 2 discharge limits of pollutants from machinery sludge, residue

Pollutants	Limits	Monitoring position of pollutant discharge
Petroleum (mg/l)	15	Water outlet of oil polluted water treatment unit

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## 5 Control requirements for sewage discharge

5.1 From July 1, 2018, ship with GT equal to 400 and above, and ship with capacity of 15 passengers and above, shall respectively meet the requirement of 5.1.1 and 5.1.2.

5.1.1 At inland waters and coast waters less than 3 nautical miles from the nearest shore, sewage shall be treated as per below mention, it is forbidden to directly dispose to environment water body.

- a) Dispose to the facilities by using onboard collection devices.
- b) Use the sewage treatment plant to meet the specified requirements and then discharge during the voyage.

5.1.2 At coast waters further than 3 nautical miles from the nearest shore, sewage pollutant discharge shall meet the control standard of table 3.  
Table 3 Control requirement for sewage discharge at coast waters further than 3 nautical miles from the nearest shore

Waters	Control requirement
3Nautical miles < distance from the nearest shore <= 12 Nautical miles	Both requirement shall be satisfied: (1) the use of equipment to break solids and discharge after disinfection (2) ship speed is not less than 4 knots, and the discharge rate of sewage does not exceed the maximum allowable discharge speed under the corresponding speed.
distance from the nearest shore > 12 Nautical miles	The ship speed is not less than 4 knots, and the discharge rate of sewage does not exceed the maximum allowable emission rate of the corresponding ship speed.

5.2 In the inland waters and within 3 nautical miles (containing) of the nearest land, according to the ship category and the time of the installation (containing replacement) sewage treatment equipment, the corresponding pollutant discharge limits of the marine sewage treated by the marine sewage treatment device are carried out respectively

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5.2.1 Ships installed (including replacement) of domestic sewage treatment plants before January 1, 2012, dispose sewage to environment water body shall meet the control standard of swage discharge-Table 4.

Table 4 The limit of pollutant discharge of marine sewage. (i)

No	Pollutants Items	Limits	Monitoring position of pollutant discharge
1	BOD <sub>5</sub> (mg/L)	50	Water outlet of domestic sewage treatment unit
2	Suspended matter (SS) (mg/L)	150	
3	Heat resistant coliform group (Piece/L)	2500	

5.2.2 Ships installed (including replacement) of domestic sewage treatment plants after January 1, 2012, dispose sewage to environment water body shall meet the control standard of swage discharge-Table 5 ( except the ships shall meet the requirement of 5.2.3)

Table 5 The limit of pollutant discharge of marine sewage. (ii)

No	Pollutants Items	Limits	Monitoring position of pollutant discharge
1	BOD <sub>5</sub> (mg/L)	25	Water outlet of domestic sewage treatment unit
2	Suspended matter (SS) (mg/L)	35	
3	Heat resistant coliform group (Piece/L)	1000	
4	COD <sub>Cr</sub> (mg/L)	125	
5	PH (Dimensionless)	6-8.5	
6	Total chlorine (mg/L)	<0.5	

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5.2.3 Passenger Ships installed (including replacement) of domestic sewage treatment plants after January 1, 2021, dispose sewage to inland waters shall meet the control standard of swage discharge-Table 6

No	Pollutants Items	Limits	Monitoring position of pollutant discharge
1	BOD <sub>5</sub> (mg/L)	20	Water outlet of domestic sewage treatment unit
2	Suspended matter (SS) (mg/L)	20	
3	Heat resistant coliform group (Piece/L)	1000	
4	COD <sub>Cr</sub> (mg/L)	60	
5	PH (Dimensionless)	6-8.5	
6	Total chlorine (mg/L)	<0.5	
7	total nitrogen (mg/L)	20	
8	ammonia nitrogen (mg/L)	15	
9	total phosphorus (mg/L)	1.0	

5.2.4 Ships installed (including replacement) of domestic sewage treatment plants after January 1, 2016, If the domestic sewage treatment process is diluted due to process requirements, etc. Five day biochemical pollutants, suspended solids, chemical oxygen demand, total nitrogen, ammonia nitrogen, total phosphorus concentration of water pollutants shall meet the below requirement. The number of heat tolerant coliform bacteria, pH value and total chlorine (total residual chlorine) are still measured as concentration of water pollutants.

$$P = Q_6 / Q_i * P_{\text{实}} \quad (\text{式 } 1)$$

P—Concentration of water pollutants, (mg/L);

P<sub>实</sub>—Measured concentration of water pollutants, (mg/L);

Q<sub>i</sub>—Refers to the discharge of domestic sewage entering the domestic sewage treatment plant, M<sup>3</sup>/D

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5.3 In the drinking water source protection area, no domestic sewage can be discharged, and the control measures shall be recorded according to the regulations.

6 sewage discharge control requirements containing toxic liquid substances

6.1 The discharge of sewage containing toxic liquid substances on the coast shall be carried out according to table 7.

Table7 discharge control requirements for toxic liquid substances

The sewage contains any of the following toxic liquid substances.	Emission control requirements
(1) X substances	If the pre washing has no exemption, the ship should be pre washed according to the prescribed procedures before leaving the port of discharge, and the pre washed water should be discharged into the receiving facilities. Among them, the X material should be pre washed to the concentration less than or equal to 0.1% (mass percentage). After the concentration has reached the requirement, the remaining sewage in the cabin should be discharged into the receiving facility until the cabin is emptied. After pre washing, the effluent discharged into the cabin with toxic liquid substances is discharged according to 6.2 of this standard.
(2) high viscosity or solidified substance in Y material	
(3) Y substances that have not been discharged according to the prescribed procedures	
(4) Z substances that have not been discharged according to the prescribed procedures	
(1) Y substances that have been discharged according to the prescribed procedures	According to 6.2 of this standard, the pollutant water discharge of a ship built before January 1, 2007, containing Z or temporarily call Z, may be exempted from the discharge of the discharge at the outlet of the water line below the waterline in 6.2C).
(2) Z substances that have been discharged according to the prescribed procedures	

6.2 the discharge of a ship in the coastal area is discharged according to the prescribed procedure, and the discharge of sewage containing toxic liquid substances shall meet the following conditions at the same time:

a) Discharged at the sea area with a depth of not less than 25 meters and away from the nearest land 12 nautical miles (including).

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- b) discharged during ship navigation, the speed of self propelled ship is not less than 7 knots, and the speed of non self propelled ships is not less than 4 knots.
- c) discharge below the waterline through underwater outlet, and the emission rate should not exceed the maximum design speed.

## 7 Requirements for control of ship garbage discharge

- 7.1 Inland rivers are forbidden to dump ships' garbage. In the area where discharge is allowed, the corresponding discharge control requirements shall be carried out according to the category of the garbage and the nature of the sea area.
  - 7.1.2 In any area, plastic waste, waste edible oil, living waste, incinerator ash, abandoned fishing gear and electronic waste shall be collected and discharged into the receiving facilities.
  - 7.1.3 shall be collected and discharged into the receiving facilities for food wastes within 3 nautical miles (containing) of the nearest land; in the nearest land of 3 miles to 12 nautical miles (containing), it is comminuted or ground to a diameter of less than 25 millimeters in diameter; it can be discharged in the sea area beyond the nearest land of 12 nautical miles.
  - 7.1.4 shall be collected and discharged into the receiving facilities for the cargo residues within 12 nautical miles (containing) of the nearest land; in the waters beyond the nearest land of 12 nautical miles, the residue of goods without hazardous marine environment substances can be discharged.
  - 7.1.5 within 12 nautical miles of the nearest land (containing), should be collected and discharged into the receiving facilities for the animal body, the animal body can be discharged in the waters outside the nearest land of 12 nautical miles.
  - 7.1.6 Cleaning water for cargo, deck and outer surface in any sea area, the cleaners or additives contained in the water are not discharged from the substances that harm the marine environment; other operating wastes should be collected and discharged into the receiving facilities.
  - 7.1.7 In any sea area, the discharge control of mixed garbage of different types of ship garbage should satisfy the discharge control requirements of each class of ship garbage at the same time.

## 8 Monitoring requirements

- 8.1 Sampling of oily water and domestic sewage in ship's machinery premises shall be carried out according to JT/T409.
- 8.2 The determination of pollutants in oily water and domestic sewage in marine machinery premises adopts the method standard listed in Table 8.
- 8.3 The monitoring data of pollutant emission monitoring locations are used as the basis for judging whether the emission behavior is up to standard or not.

Table 8 standard for determination of pollutants in oily water and domestic sewage in machinery premises

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No.	Pollutants Items	Standard name of monitoring method	Standard number
1	COD <sub>Cr</sub>	Water Quality/Determination of chemical oxygen demand/ Dichromate method	HJ828
2	BOD <sub>5</sub>	Water Quality/ Determination of BOD <sub>5</sub> / Dilution and inoculation	HJ505
3	Suspended matter (SS)	Water Quality/ Determination of Suspended matter/ gravimetric method	GB11901
4	Heat resistant coliform group	Standard Test Method for drinking water/ Microbiological index	GB/T5750.12
		Water Quality/ Determination of fecal coliform/ Multi tube fermentation and filter membrane method (Trial)	HJ/T 347
		Water quality inspection method for marine sewage treatment/ Part one: Test of heat coliform bacteria	GB/T 3328.1
5	PH	Water Quality/ Determination of pH value/ Glass electrode method	GB6920
6	Petroleum	Water quality inspection method for marine sewage treatment/ Fifth part: Test Method for oil content in water	GB/T3328.5
7	Total chlorine	Standard Test Method for drinking water/ Disinfectant index	GB/T5750.11
		Water Quality/ Determination of free chlorine and total chlorine/ N,N- Two ethyl -1, 4-benzyl two amine titration	HJ585
		Water Quality/ Determination of free chlorine and total chlorine/ N,N- Two ethyl -1, 4- Benzyl two amine spectrophotometric method	HJ586
8	total nitrogen (mg/L)	Water Quality/ Determination of total nitrogen/ Meteorological molecular absorption spectrometry	HJ/T 199
		Water Quality/ Determination of total nitrogen/ Potassium persulfate digestion ultraviolet spectrophotometric method	HJ636
9	ammonia nitrogen (mg/L)	Water Quality/ Determination of ammonia nitrogen / Meteorological molecular absorption spectrometry	HJ/T 195
		Water Quality/ Determination of ammonia nitrogen /Nnshi reagent spectrophotometric method	HJ535



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		Water Quality/ Determination of ammonia nitrogen/ Salicylic acid spectrophotometric method	HJ536
		Water Quality/ Determination of ammonia nitrogen / Distillation neutralization titration	HJ537
		Water Quality/ Determination of ammonia nitrogen/ Continuous flow salicylic acid spectrophotometric method	HJ665
		Water Quality/ Determination of ammonia nitrogen/ Flow injection - salicylic acid spectrophotometric method	HJ666
10	total phosphorus (mg/L)	Water Quality/ Determination of total phosphorus/ Ammonium molybdate spectrophotometric method	GB 11893

## 9 implementation and supervision

- 9.1 The competent department of environmental protection under the State Council shall be responsible for guiding, coordinating and supervising the implementation of this standard.
- 9.2 the maritime administrative departments of the state and the state fisheries authorities shall, in accordance with the laws and regulations and the present standards, supervise and manage the discharge of water pollutants from various types of ships.

### Category of ship garbage

#### A.1 Category of ship garbage

No.	Category	statement
A	Plastic waste	Solid waste containing or containing any form of plastic, including incineration ashes of synthetic cables, synthetic fishing nets, plastic garbage bags and plastic products.
B	food waste	Deteriorated or unspoiled food on board, including fruits, vegetables, dairy products, poultry, meat products and food residues.
C	Living waste	All kinds of waste generated from the living quarters of the ship do not include domestic sewage and ash water (dishwashing water, bathing water, laundry water, bath water and wash water)

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D	Waste edible oil	Any edible oil or animal fat that is used or intended to be used for cooking or cooking food, but excludes food cooked with the above oil.
E	Waste incinerator ash	Ash and slag produced by incinerator used for refuse incineration.
F	Operating waste	The solid waste (including mud) used to store and load and unload the goods during the normal maintenance or operation of the ship, including the cleaning agent and additive contained in the cargo tank washing water and the external cleaning water, does not include the similar emissions necessary for the grey water, the bottom water or the ship's operation.
J/K	Cargo residue	Residual goods left on deck or cabin after loading and unloading, including overloading or overflowing, whether it is in a wet or dry condition or mixed in the washing water. Cargo residue does not include dust or dust on the outer deck of the cleaned deck.
G	Animal corpse	Animal carcasses as cargo carried by ships and killed in navigation.
H	Abandoned fishing gear	Abandonment of fishing gear includes a combination of physical equipment or part of its components that are placed in water, water or seabed for catching aquatic organisms.
I	Electronic waste	Discarded electronic cards, small electrical appliances, electronic equipment, computers, printer cartridges ect.

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