



Simplified Overview of China National Standard

Discharge standard for water pollutants from ships (GB3552-2018)

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DISCLAIMER

This is a simplified overview and analysis of the People's Republic of China National Standard (GB3553-2018) - Discharge standard for water pollutants from ships, the original Chinese version shall always prevail in case of any discrepancy or inconsistencies.

1. Brief introduction

China National Standard *GB3552-2018 Discharge standard for water pollutants from ships* (hereinafter referred to as this standard) was released by the Ministry of Environment Protection and the General Administration of Quality Supervision, Inspection and Quarantine of Peoples' Republic of China on 16th January, 2018. Effective from 1st July 2018, this standard shall supersede the old standard - *GB 3552 -1983 Effluent standard for pollutants from ships*.

2. Scope of application

This standard stipulates the control requirements and testing requirements for the discharge of oily wastewater and sewage from ships, the requirements for the control of the discharge of wastewater containing noxious liquid substances and garbage from ships, as well as the implementation and supervision of the standard.

This standard is applicable to the waters of the People's Republic of China and any sea areas under its jurisdiction, as well as for the supervision and management of the discharge of oily wastewater and sewage, wastewater containing noxious liquid substances and ship garbage within such water areas. This standard does not apply to temporary emissions necessary for the safety of ships or for the safety of life at sea.

This standard refers to pollutants discharge actions permissible 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, which provides specific provisions on the prohibition of dumping of garbage, the prohibition of the discharge of noxious liquid substances, the prohibition of pollutant discharge in protected areas of drinking water source, and the prevention of overflow and leakage of ship's cargo, etc.

3. Simplified overview of this standard

3.1 Discharge of oily mixtures

Table 1 Requirements on discharge of oily mixtures from ships

Type	Waters	Ship category		Requirements
Oily bilge water	Inland waters	Ship constructed before January 1, 2021		Implement according to the limits in Table 2 or collect and discharge into reception facilities from July 1, 2018.
		Ship constructed on and after January 1, 2021		Collect and discharge into reception facilities
	Coastal waters	400 gross tonnage and above		Implement according to the limits in Table 2 or collect and discharge into reception facilities from July 1, 2018.
		Less than 400 gross tonnage	Non-fishing vessels	Implement according to the limits in Table 2 or collect and discharge into reception facilities from July 1, 2018.
			Fishing vessels	(1) From July 1, 2018 to December 31, 2020, to implement according to the limits in Table 2 ; (2) Implement according to the limits in Table 2 or collect and discharge into reception facilities from January 1, 2021.
Oily mixtures containing oil cargo residues	Inland waters	All tankers		Collect and discharge to reception facilities from July 1, 2018
	Coastal waters	Tankers of 150 gross tonnage and above		From July 1, 2018, to collect and discharge to reception facilities or discharge when vessel is en-route and providing it meets the following criteria: (1) Vessel is more than 50 nm from the nearest land; (2) The rate of discharge of oil content does not exceed 30 litres per nautical mile; (3) The total quantity of oil discharged into the sea does not exceed 1/30,000 of the total quantity of the particular cargo of which the residue formed a part; and (4) The vessel has an oil discharge monitoring and control system that is working normally.
		Tankers less than 150 gross tonnage		Collect and discharge to reception facilities from July 1, 2018

Table 2 Limits for discharge of oily mixtures from machinery spaces

Pollutants	Limits	Monitoring position of discharge
Petroleum (mg/L)	Less than 15 and discharged when ships are en-route.	Water outlet of oily water separation unit

3.2 Discharge of sewage

Table 3 Requirements on discharge of sewage from ships

Application	Waters	Sewage discharge requirement
<ul style="list-style-type: none"> Ships ≥ 400GT and passenger ships (regardless of GT) certified to carry 15 persons and above; Effective from July 1, 2018 	Inland waters and sea waters within 3 nautical miles (including) from the nearest land	(1) The direct discharge of sewage into waters is prohibited. (2) The sewage shall be treated in either of the following ways: <ul style="list-style-type: none"> a) the sewage be stored in holding tanks and then discharged to the reception facilities; b) the sewage be treated by the on-board treatment plant and then discharged when the ship is en-route, provided the requirement in Table 4 is met.
	3 nmiles < distance from the nearest land \leq 12 nmiles	Discharge subject to meeting both conditions below: <ul style="list-style-type: none"> (1) the sewage shall be comminuted and disinfected using a system; and (2) discharge when the ship is en-route and proceeding at no less than 4 knots, the rate of discharge shall not exceed the maximum allowable rate corresponding to the ship speed.
	Distance from the nearest land > 12 nmiles	Discharge when the ship is en-route and proceeding at no less than 4 knots, and the rate of discharge shall not exceed the maximum allowable rate corresponding to the ship speed.

Table 4 Limits for discharge of sewage effluent treated by onboard treatment plant

Application	Pollutants	Limits	Monitoring position
Ships with sewage treatment plants installed on-board or changed before January 1, 2012	5-day biochemical oxygen demand (BOD ₅) (mg/L)	50	Effluent outlet of sewage treatment plant
	Suspended Solids (SS) (mg/L)	150	
	Thermotolerant Coliform (/L)	2500	
Ships (except passenger ships mentioned below) with sewage treatment plants installed on-board or changed on and after January 1, 2012	5-day biochemical oxygen demand (BOD ₅) (mg/L)	25	
	Suspended Solids (SS) (mg/L)	35	
	Thermotolerant Coliform (/L)	1000	
	Chemical Oxygen Demand (COD _{Cr}) (mg/L)	125	
	pH	6~8.5	
	Total Chlorine (residual Chlorine) (mg/L)	<0.5	
Passenger ships with sewage treatment plants installed on-board	5-day biochemical oxygen demand (BOD ₅) (mg/L)	20	
	Suspended Solids (SS) (mg/L)	20	
	Thermotolerant Coliform (/L)	1000	

or changed on and after January 1, 2021	Chemical Oxygen Demand (COD _{Cr}) (mg/L)	60	
	pH	6~8.5	
	Total Chlorine (residual Chlorine) (mg/L)	<0.5	
	Total nitrogen (mg/L)	20	
	Ammoniacal nitrogen (mg/L)	15	
Total phosphorus (mg/L)	1.0		

3.3 Discharge of waste water containing noxious liquid substances (NLS)

Table 5 Requirements on discharge of waste water containing NLS

Waste water containing any one kind of the following noxious liquid substances	Discharge control requirements	Discharge standard
<p>(1) substances in category X;</p> <p>(2) High-viscosity or solidifying substances in category Y;</p> <p>(3) a substance in category Y the unloading of which is not carried out in accordance with the approved procedures;</p> <p>(4) a substance in category Z the unloading of which is not carried out in accordance with the approved procedures;</p>	<ul style="list-style-type: none"> Tanks shall be prewashed before the ship leaves the port of unloading unless the prewash can be exempted, the resulting residues shall be discharged to a reception facility. For category X substances, the prewash shall be continued until the concentration of the substance in the effluent is at or below 0.1% by weight, when the required concentration level has been achieved, remaining tank washings shall continue to be discharged to the reception facility until the tank is empty. Any water subsequently introduced into the tank may be discharged into waters in accordance with the discharge standard shown on right. 	<ul style="list-style-type: none"> the discharge is made at a distance of not less than 12 nautical miles from the nearest land in a depth of water of not less than 25 m; and the ship is proceeding en route at a speed of at least 7 knots in the case of self-propelled ships or at least 4 knots in the case of ships which are not self-propelled; and the discharge is made below the waterline through the underwater discharge outlet(s) not exceeding the maximum rate for which the underwater discharge outlet(s) is (are) designed.
<p>(1) a substance in category Y the unloading of which is carried out in accordance with the approved procedures;</p> <p>(2) a substance in category Z the unloading of which is carried out in accordance with the approved procedures;</p>	<ul style="list-style-type: none"> Discharged in accordance with the discharge standard shown on right; For ships constructed before 1 January 2007, the discharge into the sea of residues of substances in category Z or of those provisionally assessed as such below the waterline is not mandatory. 	

3.4 Disposal of garbage from ships

Table 6 Requirements on disposal of garbage from ships

Application	Garbage categories	Requirements
Inland waters	All	Prohibited
Other waters	Plastics, cooking oil, domestic wastes, incinerator ashes, fishing gear and E-waste	collected and then disposed to the reception facilities
	Food wastes	<ul style="list-style-type: none"> • Shall be collected and then disposed to the reception facilities if the distance from the nearest land is less than 3 nautical miles (including); • Disposal may be allowed when the wastes have been passed through a comminuter or grinder and such comminuted or ground garbage shall be capable of passing through a screen with openings no greater than 25 mm, if the distance from the nearest land is more than 3 nautical miles but less than 12 nautical miles (including); • Disposal is allowed if the distance from the nearest land is more than 12 nautical miles.
	Cargo residues	<ul style="list-style-type: none"> • Shall be collected and then disposed to the reception facilities if the distance from the nearest land is less than 12 nautical miles (including); • The disposal may be allowed if the distance from the nearest land is more than 12 nautical miles and the cargo residues contain no substances that are harmful to the marine environment.
	Animal carcasses	<ul style="list-style-type: none"> • Shall be collected and then disposed to the reception facilities if the distance from the nearest land is less than 12 nautical miles (including); • The disposal may be allowed if the distance from the nearest land is more than 12 nautical miles.

Note:

1. The discharge into sea of cleaning agents and additives contained in cargo hold, deck and external surfaces washwater is only permitted when these substances are not harmful to the marine environment; other operational wastes shall be collected and then discharged to the reception facilities;
2. When garbage is mixed with or contaminated by other harmful substances prohibited from discharge or having different discharge requirements, the more stringent requirements shall apply.

4. Comparison & analysis between the old standard against this standard

The first edition of China discharge standard for water pollutants from ships was released in 1983. Comparing with the Old standard, the 2018 edition standard (the New standard) has the following two Main Amendments:

4.1 Inclusion of NLS as Pollutants and Expansion of Garbage items

In the Old version, only Oily Waste Water, Sewage and Garbage are addressed with the scope of Garbage being categorised as Plastics, Floating Wastes and Food Wastes ONLY

In the New standard, the scope of the pollutants to be controlled expanded to include the *Noxious Liquid Substances*. In-addition, the scope of Garbage expanded to include 10 Categories.

Table 7 Comparison of Pollutants and items to be controlled in Old & New Standard Version

Pollutants	Old standard (1983 version)	New standard (2018 version)
Oily Waste Water	Addressed	Addressed, see Table 1
Noxious liquid substances	Not addressed	Addressed, see Table 5
Sewage	Addressed, but only the following items controlled: <ul style="list-style-type: none"> • Biochemical oxygen demand • SS • Coliform group 	Addressed, see Table 3 to Table 4
Garbage	Addressed, but only the following items controlled: <ul style="list-style-type: none"> • Plastics; • Floating wastes • Food wastes 	Addressed, garbage is grouped into 10 categories

4.2 Upgrade of the limit (more stringent)

For the same pollutant, the limit for allowed discharge has been upgraded. For example, for sewage discharge, the limit for suspended solid (SS) in the old standard is not more than 150, while in the new standard, this value significantly reduced (see **Table 4**).

Furthermore, the division of the waters and the condition to which different requirements apply is more detailed. For example, for sewage discharge, the new standard address the waters more than 12 nautical miles from the nearest land, which was not addressed in the old standard; also the new standard stipulated different requirements based on the plant/system installation date and ship types.

For easy reference and comparison, the simplified overview of the old standard is given in the ANNEX.

5. Brief comparison & analysis between this standard against relevant MARPOL ANNEXES

- For the discharge standard and limit, basically the limit in this standard (except those for inland waters) is following MARPOL regulations, for example the limit for discharge of oily waste water, 15ppm is the same in MARPOL Annex I. Application of the same standard maybe different, including the date of entry into force, applicable waters, etc.
- Another notable difference is the category of garbage, the category for cargo residues has been split into HME (harmful to the marine environment) and non-HME by *IMO Resolution. MEPC.277(70)- Amendments to MARPOL Annex V* which entered into force from 1 March 2018, so there are now 11 categories (from A to K) for garbage according to MARPOL Annex V. The change of category for cargo residues was NOT reflected in this standard which was developed earlier than the aforementioned *IMO Resolution*.

ANNEX Simplified overview of the OLD Standard (1983 version)

Annex Table 1 Limits for discharge of oily waste water from ships

Waters	Discharged concentration (mg/L)
Inland water	≤ 15
Sea within 12 nautical miles from the nearest land (including)	≤ 15
Sea outside the 12 nautical miles from the nearest land	≤ 100

Annex Table 2 Limits for discharge of sewage effluent from ships

Areas Items	Inland waters	Coastal sea	
		The distance from the nearest land is less than 4 nautical miles (including)	The distance from the nearest land is more than 4 nautical miles but less than 12 nautical miles (including)
BOD	≤ 50	≤ 50	
SS	≤ 150	≤ 150	No visible SS
Coliform group	$\leq 250/100$ mL	$\leq 250/100$ mL	$\leq 1000/100$ mL

Annex Table 3 Requirements for disposal of garbage

Garbage category	Inland waters	Coastal sea
Plastics	Disposal prohibited	Disposal prohibited
Floating wastes	Disposal prohibited	Disposal prohibited if the distance from the nearest land is less than 25 nautical miles (including)
Food wastes and other garbage	Disposal prohibited	<ul style="list-style-type: none"> • Disposal is not allowed within 12 nautical miles from the nearest land unless the wastes have been comminuted; • Disposal may be allowed within 3 nautical miles from the nearest land when the wastes have been passed through a comminuter or grinder and such comminuted or ground garbage shall be capable of passing through a screen with openings no greater than 25 mm.



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