



## INTERNATIONAL SHIP CLASSIFICATION

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BS EN ISO 9001 : 2000

To : All Office  
From : General Manager, ISClass  
Date : 21 November 2008  
Ref : CIR08/0010

### **Subject : RECOMMENDATION ON STANDARDS FOR THE RATE OF DISCHARGE OF UNTREATED SEWAGE FROM SHIPS.**

#### **General**

This circular is intended for Owners and Managers of vessels above 400 GT and vessels certified to carry more than 15 persons, fitted with sewage holding tanks for untreated raw sewage.

#### **Application**

Revised Annex IV of MARPOL 73/78, regulation 11.1.1 requires that untreated raw sewage which has been stored in the sewage holding tank should discharge into the sea at a moderate rate while the ship is en route more than 12 n miles from nearest land and proceeding at a speed of not less than 4 knots.

The moderate rate of discharge to be calculated in accordance with MEPC 157(55) and the result of the calculation shall be approved by Administration or authorised organisation recognised by Administration

#### **Discharge Rate Calculation**

The maximum permissible discharge is 1/200,000 ( or one 200,000<sup>th</sup> part ) of swept volume as follow.

$$DR_{\max} = 0.00925 V D B$$

Where

$DR_{\max}$  is maximum permissible discharge rate ( m<sup>3</sup> / h )

V is ship's average speed ( knots) over the period.

D is Draft ( m)

B is Breadth ( m )

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### Approval Procedure

Discharge rate calculation to be worked out as a table covering all relevant combinations of Draft and Speed. (Calculation example - attachment 1)

Owner must prepare calculation and the result to be submitted to the Administration or Authorised Organisation for approval.

The approved calculation result to be placed onboard and this requirement are applicable from **1<sup>st</sup> December 2008.**

Attachment (1) – Sample of Discharge Rate Calculation Table

Attachment (2) – Resolution MEPC 157(55)

Attachment (3) – Resolution MEPC 164 (56)

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Attachment (1)

**MAXIMUM RATE OF DISCHARGE OF UNTREATED SEWAGE IN ACCORDANCE  
 WITH RESOLUTION MEPC. 157 (55)**

Ship Name : MV ISClass  
 Call Sign : ISC  
 Breadth (B) : 20 m  
 Max summer draft : 8.0 m  
 Max Service speed : 12 knots  
 Theoretical max rate : 17.76 m<sup>3</sup>/hr

DISCHARGE RATE ( m <sup>3</sup> /hr )					
Speed ( Kt)	4	6	8	10	12
Draft (m)					
4	2.96	4.44	5.92	7.4	8.88
5	3.7	5.55	7.40	9.25	11.1
6	4.44	6.66	8.88	11.1	13.32
7	5.18	7.77	10.36	12.95	15.54
8	5.92	8.88	11.84	14.8	17.76

$$DR_{max} = 0.00925 V D B$$

Where

$DR_{max}$  is maximum permissible discharge rate ( m<sup>3</sup> / h )

V is ship's average speed ( knots) over the period.

D is Draft ( m)

B is Breadth ( m )

**ANNEX 14**

**RESOLUTION MEPC.157(55)**  
**Adopted on 13 October 2006**

**RECOMMENDATION ON STANDARDS FOR THE RATE OF DISCHARGE  
OF UNTREATED SEWAGE FROM SHIPS**

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee (the Committee) conferred upon it by international conventions for the prevention and control of marine pollution,

NOTING resolution MEPC.115(51) by which the Committee adopted the revised MARPOL Annex IV, which entered into force on 1 August 2005,

NOTING ALSO the provisions of regulation 11.1.1 of MARPOL Annex IV,

RECOGNIZING that untreated sewage that has been stored in holding tanks shall not be discharged instantaneously but that the discharge is to be undertaken at a moderate rate approved by the Administration based upon the standards developed by the Organization,

HAVING CONSIDERED the recommendations made by the Sub-Committee on Bulk Liquids and Gases at its tenth session,

1. ADOPTS the Recommendation on standards for the rate of discharge of untreated sewage from ships, the text of which is set out in the Annex to the present resolution;
2. RECOMMENDS member Governments to accept the rate of discharge based upon the annexed Standards,
3. ENCOURAGES operators of ships that may have high discharge requirements to keep calculations of actual discharges to demonstrate compliance to the Administration and to port or coastal State authorities.

## ANNEX

### RECOMMENDATION ON STANDARDS FOR THE RATE OF DISCHARGE OF UNTREATED SEWAGE FROM SHIPS

#### 1 INTRODUCTION

- 1.1 Regulation 11.1.1 of the revised Annex IV of MARPOL 73/78 requires that untreated sewage, which may be discharged at more than 12 nautical miles from the nearest land, should not be discharged instantaneously but at a moderate rate of discharge when the ship is en route and proceeding at a speed not less than 4 knots, while the rate should be approved by the Administration based upon standards developed by the Organization. This Recommendation provides the standard and guidance for the approval and calculation of a moderate rate of discharge.
- 1.2 A moderate rate of discharge applies to the discharge of untreated sewage that has been stored in holding tanks.
- 1.3 This standard does not incorporate the dilution of sewage with water or greywater into calculations of the discharge rate. Therefore the rate is a conservative estimate and it is recognised that discharges of sewage in accordance with this standard will present a higher level of protection to the marine environment due to mixing prior to the actual discharge in addition to the mixing action of the ship's wake.

#### 2 DEFINITIONS

- 2.1 *Swept volume* means ship breadth x draft x distance travelled.
- 2.2 *Untreated sewage* means sewage that has not been treated by a type approved sewage treatment plant, or that has not been comminuted and disinfected.

#### 3 DISCHARGE RATE

- 3.1 The maximum permissible discharge rate is 1/200,000 (or one 200,000th part) of swept volume as follows:

$$DR_{\max} = 0.00926 V D B$$

Where:

$DR_{\max}$  is maximum permissible discharge rate ( $m^3/h$ )  
V is ship's average speed (knots) over the period  
D is Draft (m)  
B is Breadth (m)

- 3.2 The maximum permissible discharge rate specified in 3.1 refers to the average rate as calculated over any 24 hour period, or the period of discharge if that is less, and may be exceeded by no more than 20% when measured on an hourly basis.

#### 4 APPROVAL OF RATE BY ADMINISTRATION

- 4.1 The Administration should approve the rate of discharge specified in 3.1 based upon the ship's maximum summer draft and maximum service speed<sup>1</sup>. Where sewage is to be discharged at a different combination of draft and speed one or more secondary discharge rates may also be approved<sup>2</sup>.

#### 5 METHOD OF CALCULATION

- 5.1 The calculated swept volume of the ship is to be determined for drafts up to and including the summer draft assigned in accordance with Article 3 of International Convention on Load Lines, 1966.
- 5.2 Where a ship is to discharge sewage from a holding tank using a pump calibrated at a fixed rate, the pump can either be:
- calibrated at a the rate permitted at 4 knots; or
  - calibrated for a specific minimum ship's speed in excess of 4 knots.
- 5.3 Where the intended actual discharge rate exceeds that permissible at 4 knots, the actual discharge rate may need to be reduced or the speed increased. The rate and speed is to be detailed in the approval issued by the Administration.

#### 6 COMPLIANCE WITH THE RATE

- 6.1 Before undertaking a sewage discharge in accordance with this standard, the crew member responsible for sewage operations should ensure that the ship is en route, is more than 12 nautical miles from the nearest land and the navigation speed is consistent with the discharge rate that has been approved by the Administration. Ships with high discharge requirements are encouraged to keep notes of calculations of the actual discharges to demonstrate compliance with the approved rate.

<sup>1</sup> The attention of ship operators and personnel is drawn to the reduction in permissible rate of discharge at reduced draft and/or speed.

<sup>2</sup> Presentation may be tabular, refer to table below. For ships other than those having a high requirement for untreated sewage discharge, such as passenger ships and livestock carriers, the discharge rate criterion will generally not be exceeded at ship speed of 4 knots.

DISCHARGE RATE (m <sup>3</sup> /h)					
SPEED (kt)	4	6	8	10	12
DRAFT (m)					
5	4.63	6.94	9.26	11.57	13.89
6	5.56	8.33	11.11	13.89	16.67
7	6.48	9.72	12.96	16.20	19.45
8	7.41	11.11	14.82	18.52	22.22
9	8.33	12.50	16.67	20.83	25.00

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5. REQUESTS FURTHER the Secretary-General to transmit to the Members of the Organization which are not Parties to MARPOL 73/78 copies of the present resolution and its Annexes.



ANNEX 1

**AMENDMENTS TO MARPOL ANNEX I**

**(Reception facilities outside Special Areas)**

Regulation 38.2.5 is replaced by the following:

“all ports in respect of oily bilge waters and other residues that cannot be discharged in accordance with regulations 15 and 34 of this Annex; and”

ANNEX 2

**AMENDMENTS TO MARPOL ANNEX IV**

**(Discharge of sewage)**

Regulation 11.1.1 is replaced by the following:

- “1 the ship is discharging comminuted and disinfected sewage using a system approved by the Administration in accordance with regulation 9.1.2 of this Annex at a distance of more than 3 nautical miles from the nearest land, or sewage which is not comminuted or disinfected, at a distance of more than 12 nautical miles from the nearest land, provided that, in any case, the sewage that has been stored in holding tanks, or sewage originating from spaces containing living animals, shall not be discharged instantaneously but at a moderate rate when the ship is *en route* and proceeding at not less than 4 knots; the rate of discharge shall be approved by the Administration based upon standards developed by the Organization<sup>1</sup>; or”

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<sup>1</sup> Refer to the Recommendation on standards for the rate of discharge of untreated sewage from ships adopted by the Marine Environment Protection Committee of the Organization by resolution MEPC.157(55).