

## **HELCOM RECOMMENDATION 1/5**

adopted 5 May 1980 having regard to Article 13,  
Paragraph b) of the Helsinki Convention

### **RECOMMENDATION CONCERNING THE APPLICATION BY THE BALTIC SEA STATES OF GUIDELINES FOR TYPE TESTING AND APPROVAL OF SEWAGE TREATMENT SYSTEMS**

#### **THE COMMISSION,**

**RECALLING** Paragraph C of Regulation 7 of Annex IV to the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974, (Helsinki Convention), concerning the discharge of sewage,

**RECALLING ALSO** that the Marine Environment Protection Committee (MEPC) of IMCO has adopted, at its sixth session, Resolution MEPC.2(VI) - Recommendation on International Effluent Standards and Guidelines for Performance Tests for Sewage Treatment Plants,

**RECALLING FURTHER** that the Interim Commission has adopted, at its fourth meeting, a Recommendation concerning the Application by the Baltic Sea States of the Resolution MEPC.2(VI) - Recommendation on International Effluent Standards and Guidelines for Performance Tests for Sewage Treatment Plants,

**NOTING** that Administrations of Baltic Sea States, pursuant to Sub-Paragraph 1 b) of Paragraph C of Regulation 7 of Annex IV of the Helsinki Convention should approve sewage treatment plants,

**NOTING FURTHER** that MEPC, at its seventh session, has approved the form of a "Certificate of Type Test for Sewage Treatment Plants", incorporated in the IMCO publication on Effluent Standards and Guidelines for Performance Tests for Sewage Treatment Plants,

**RECOGNIZING** the need for supplementary provisions to the IMCO Recommendation on International Effluent Standards and Guidelines for Performance Tests for Sewage Treatment Plants (Resolution MEPC.2(VI)), in order to achieve a uniform procedure for testing and approval of sewage treatment systems in the Baltic Sea States,

**RECOMMENDS** that Governments of the Contracting Parties to the Helsinki Convention should, while awaiting the Guidelines approved by IMCO, apply the attached Guidelines for Type Testing and Approval of Sewage Treatment Systems.

## ATTACHMENT

### GUIDELINES FOR TYPE TESTING AND APPROVAL OF SEWAGE TREATMENT SYSTEMS

The present Guidelines are based on the International Convention for the Prevention of Pollution from Ships, 1973, Annex IV and Recommendation on International Effluent Standards and Guidelines for Performance Tests

for Sewage Treatment Plants (Resolution MEPC.2(VI)) and are applicable to sewage treatment systems to be installed in ships in order to meet the requirements of the Helsinki Convention.

In addition to the provisions of the present Guidelines, the systems have to meet the requirements of the International Convention for the Prevention of Pollution from Ships, 1973.

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### I APPLICATION

The application of these Guidelines for the three different types of plants appears from the following table, where yes means that the paragraph in question applies, and no means that the paragraph in question does not apply:

Paragraph	Sewage Treatment Plants	System for comminution and disinfection	Holding tanks
II	yes	yes (except u)	no
III	yes (except g and h)	yes (except a)	no
IV	yes	yes	no
V	yes (except g)	yes	yes (except f)
VI	yes (except d, e, f, g, h, i, k, l)	yes (except d, e, f, g, h, i, k, l)	yes
VII	yes	yes (except c) 6)	yes (except c) 4, 5, 6)

## II APPLICATION FOR TYPE APPROVAL

The applicant should send the application and enclosure to the Administration in 3 copies.  
The application should comprise:

- a) Description of the plant's process and function including schematic drawings.
- b) Description of the materials forming part of the plant and which materials are in contact with the waste water and chemicals
- c) Installation instructions.
- d) Operating instructions.
- e) Maintenance instructions.
- f) List of the most important components for the correct function of the plant.
- g) Possible documented operation experience from use of the plant in ships.
- h) Proposal for a test programme in accordance with the present Guidelines
- i) Name of the institution which is proposed for carrying out the test.
- k) Name of the laboratory which is proposed for carrying out the analyses.

The instructions stated in c) , d),and e) should be the normal instructions delivered together with the plant and, a.o., contain information of:

- l) Type of waste water (black, grey, from water saving system).
- m) Type of flushing water (fresh or salt)
- n) Capacity of the plant: normal, maximum and minimum (number of persons, flow volume per unit of time).
- o) Maximum duration for maximum capacity.
- p) Designed organic loading.
- q) Which chemicals and which concentration should be used.
- r) Warning for protection of the operating personnel against possible dangerous chemicals.
- s) Flow and electric diagrams.
- t) Simple arrangements for a possible inboard effluent control.
- u) Information on the storage and/or treatment of excess sludge.

### III TEST FOR TYPE APPROVAL

- a) The test should be carried out in accordance with the rules in the IMCO Resolution MEPC.2(VI).\*
- b) The test programme should be approved by the Administration.
- c) The installation and the operation of the plant should be carried out in accordance with the applicant's instructions (II c, d and e) and done by the applicant to the satisfaction of the Administration.
- d) The testing and the analyses should be carried out by an institute and a laboratory acceptable to the Administration.
- e) All parts in the plant which will contain or in which there will be a flow-through of waste water, should be pressure tested in accordance with national provisions.
- f) When there are good reasons to question the suitability of a plant on board a ship despite the fact that the plant has been successfully type tested in accordance with the rules referred to in III a), the Administration should ascertain the proper functioning by a supplementary survey after a sufficient period of time in service before final type approval is given.
- g) Systems to comminute and disinfect sewage or equivalent systems intended for discharge in accordance with Regulation 7 C. Annex IV of the Helsinki Convention should fulfil the following effluent standards:
  - 1) Faecal Coliform Standard \*). Faecal coliform bacteria in the effluent should not exceed 1000/100 cm<sup>3</sup> M.P.N.
  - 2) Comminuting Standard: A sample of 1 litre is passed through a US Sieve No. 12 (with openings of 1.68 mm). The weight of the material retained on the screen after it has been dried to a constant weight in an oven at 103°C must not exceed 10% of the total suspended solids and shall not be more than 50 mg.
- h) When testing systems to comminute and disinfect sewage IMCO's Resolution MEPC.2(VI), Annex B should be used with the following modifications:
  - 2.1 The test should if possible be carried out on board a ship.
  - 2.2 The duration of the test should be at least 2 days.
  - 2.4 10 effluent samples are taken.
  - 2.5 Should not apply.
  - 2.8 Should not apply.

\*) cf. the Explanatory Note

#### **IV CONSTRUCTION REQUIREMENTS**

- a) The plant should be constructed to resist the mechanical and environmental influences to which it will be exposed during the operation on board a ship.
- b) The plant should operate hydraulically correct at angles up to 15° in any plane from the normal operational position. \*)
- c) The plant should be equipped for automatic operation and alarm for erroneous operation
- d) The plant should be equipped with openings of suitable size for emptying, cleaning, inspection and maintenance
- e) The plant should be equipped with connection for venting to the open air from all parts where malodorous or explosive gases are released.
- f) The plant should be so arranged that sampling from the influent and the effluent can be easily done.
- g) The electrical equipment should be in accordance with the requirements from the national authorities.
- h) The plant should be provided with a durable plate giving information of the name of the manufacturer, model of the plant, serial number of the plant, hydraulic loading, date of manufacture and the name of the approving Administration.

#### **V INSTALLATION PLAN**

An installation plan for every installation should be forwarded to the Administration for their information.

This installation plan should comprise information about:

- a) Kind of waste water system (separate/common black, grey, traditional or water saving).
- b) Kind of flushing water (fresh or salt).
- c) Quantity of waste water (normal, maximum, minimum and maximum duration for maximum loading).
- d) Number of persons to be served by the installation.
- e) Drawings of the installation, diagrammatic plans for the piping system with all details necessary for checking.
- f) Manufacture and type of plant.
- g) Volume of holding tank.
- \*) cf Explanatory Notes

## **VI CONSTRUCTION REQUIREMENTS TO THE INSTALLATION**

- a) The installation should be carried out in such a way that it is suitable for and resistant to the influences to which it will be exposed during the operation on board a ship. (In accordance with the recognized national standards.)
- b) The vent pipe should be provided with a flame arresting netting.
- c) There should be suitable space and access for the operation of the plant, components which require service and the test cock.
- d) The holding tank should be able to resist the influences to which it will be exposed during the operation in a ship.
- e) The holding tank and the connected components should operate correctly at list of 15° and trim of 7°. \*)
- f) The holding tank should be equipped with alarm devices, giving alarm in case of 3/4 and full tank.
- g) The holding tank should be manufactured of or protected by materials which are corrosion resistant to the waste water.
- h) The holding tank should be provided with openings of suitable size for emptying, cleaning, inspection and maintenance.
- i) The holding tank should be equipped with remedies for flushing and emptying.
- k) The holding tank should be equipped with a vent pipe to the open air. \*)
- l) The holding tank should be constructed for the maximum occurring pressure.
- m) A pipe line to discharge sewage to a reception facility should be fitted with a standard connection in accordance with the Helsinki Convention.

## **VII SURVEY**

- a) Every plant should be pressure tested before it is put into operation, which pressure test should be carried out in the presence of the Administration or a person authorized by same.

All parts in the plant which will contain or in which there will be a flow-through of waste water, should be pressure tested.

- b) The installed plant should be surveyed by the Administration or a person authorized by same before the plant is put into operation and thereafter at the normal survey of the ship, however, at least every 5th year.

\*) cf Explanatory Notes

- c) The survey should comprise:
- 1) Ascertainment of the installation being in accordance with the installation plans and the manufacturer's instructions.
  - 2) Survey of a possible corrosion protection of the inside surfaces of the plant which should be in good condition.
  - 3) Ascertainment of the correct function of the alarms.
  - 4) Ascertainment of the correct function of the most important components stated in the manufacturer 's list (required II f).
  - 5) Ascertainment of the correct concentration of the disinfectant in the effluent.
  - 6) Ascertainment of possible concentration of other chemicals in the effluent.

## **VIII EXPLANATORY NOTES**

- 1) The expression "survey" appearing in paragraph III f) should be understood in a way that it does not necessarily include laboratory tests of samples.
- 2) As regards the Faecal Coliform Standard contained in paragraph III a) and g) I) it should be noted that paragraph 2.6 of Annex B of the IMCO Resolution MEPC.2(VI) underlines the importance to keep the disinfectant residual in the effluent as low as possible when chlorine is used as a disinfectant. As a consequence an amendment concerning the maximum faecal coliform content might later have to be considered as a result of experience gained in order to minimize the disinfectant residual.
- 3) The angle of 15° specified for certain tests in paragraphs IV b) and VI e) is taken from the IMCO Certificate of Type Test for Sewage Treatment Plants. It should be noted, however, that the corresponding angle specified in the Recommendation on International Performance and Test Specifications for Oily-Water Separating Equipment and Oil Content Meters (IMCO Resolution A.393(X)) is 22.5° and that an amendment might be desirable in the future in order to achieve harmonization in this respect.
- 4) It is pointed out that it might be preferable to include in the future, in the Guidelines, provisions for active ventilation systems in sewage holding tanks.