

Wastewater Treatment Technology Certification Process under 33 CFR 159

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US Regulations

- Purpose – prevent the discharge of untreated sewage from vessels into the waters of the United States.
- These regulations three sections :
 - Acceptance of laboratories that examine, inspect, and test MSDs
 - Certification of equipment
 - Requirements for a vessel to have an MSD.

MARPOL Annex IV, Regulation 9

➤ Sewage Treatment Plant:

Includes any equipment for installation on board a vessel which is designed to receive, retain, treat, or discharge sewage, and any process to treat such sewage

➤ NVIC 01-09

Provides guidance for testing facilities and manufactures to evaluate, test and inspect sewage treatment plants

➤ MEPC 159.55

Guidelines on Implementation of Effluent Standards and Performance Tests for Sewage Treatment Plants



Acceptance of ISPPC

- Foreign vessels having a valid International Sewage Pollution Prevention Certificate (ISPPC) will be accepted by the U.S. Coast Guard as being in compliance with 33 CFR 159.7(b) or (c)
- Foreign flagged vessels may have a “Certificate of Type Test” issued under MARPOL Annex IV. The Certificate of Type Test is considered equivalent to meeting the 33 CFR 159.7 (b) or (c) regulations.



Equipment Approval

Approval Series: 159.015

Purpose: Manufacturers of marine equipment designed to receive, retain, treat, or discharge sewage and any process to treat such sewage on board a vessel may apply to any *recognized facility (or qualified facility)* accepted by the U.S. Coast Guard for certification of MSD/Sewage Treatment Plant under the provisions of 33 CFR Part 159.

The standards for certification, including design, construction, and testing, are also contained in 33 CFR 159



Application for Certification

Any manufacturer may apply to any recognized/qualified facility for certification of a marine sanitation device/sewage treatment plant.

The application for certification must indicate which type of vessels the equipment will onboard and to which standard the manufacturer requests the device to be tested.



Certification Test

- Proper mounting, water supply, and discharge fittings
- Types of tests: Vibration test, shock test, rolling test, pressure test, temperature range, chemical resistance, sewage processing test, and ignition prevention test
- Items to evaluate: cracking, softening, deterioration, displacement, breakage, leakage or damage of components or materials that affects the operation or safety of the device after each test.

The device must remain operable after the test



Certification Protocol

A qualified facility evaluates compliance with MARPOL Annex IV using the following protocol:

- (a) Documentation Evaluation
- (b) Design and Construction inspection
- (c) Environmental Tests
- (d) Analytical Tests
 - ~Thermotolerant Coliform
 - ~Total suspended solids
 - ~ Biochemical Oxygen demand and Chemical Oxygen demand
 - ~pH
 - ~Residual Chlorine
 - ~ Zero or non-detected values



Test Duration

- Minimum of 10 days and should be timed to capture normal operational conditions
- The test should commence after steady-state conditions have been reached by the sewage treatment plant
- The entire testing process could range from just over 1 week up to 3 weeks.

Certification Procedures

The qualified facility , after testing the device in accordance with Sec. 159.101 /NVIC 01-09, should submit to the Commanding Officer, USCG Marine Safety Center the following:

- (1) The information that is required under Sec. 159.14(b);
- (2) A report on compliance evaluation;
- (3) A description of each test;
- (4) Test results; and
- (5) A statement, that is signed by the person in charge of testing, that the test results are accurate and complete.



Changes to Certified Devices

The manufacturer of a device that is certified shall notify the Commanding Officer, USCG Marine Safety Center in writing of any change in the design of the device.

A manufacturer shall include: a description of the change, its advantages, and the recommendation of the recognized facility as to whether the device remains in all material respects substantially the same as the original test device.



Testing Equivalency

If a test required by this part may not be practicable or necessary, a manufacturer may apply to the Commanding Officer, USCG Marine Safety Center, for approval of an alternative test as equivalent to the test requirements in this part.



Questions/Comments

- References:

- Marine Sanitation Devices, 33 Code of Federal Regulations Part 159
- Navigation and Vessel Inspection Circular 01-09 *Voluntary Compliance with International Sewage Regulations in Annex IV to MARPOL 73/78*
- *Effluent Standards and Performance Tests for Sewage Treatment Plants*, adopted by Marine Environment Protection Committee 159.55



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