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POLICY AND GUIDANCE
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Marine Sanitation Device

Systems Engineering Division (CG-ENG-3)

Each Code of Federal Regulation (CFR) cited below is updated annually in a free searchable database available from the Government Publishing Office (<http://www.ecfr.gov/>).

Marine sanitation device (MSD) regulations in 33 CFR Part 159 provide for the design, construction, and certification of equipment that prevents discharge of untreated sewage from vessels into the waters of the United States. These regulations are divided into three sections covering acceptance of laboratories that examine, inspect, and test MSDs, certification of equipment, and requirements for a vessel to have an MSD.

- Laboratory Acceptance
- Equipment Approval
- Vessel Requirements

Changes to International Standards:

The U.S. Coast Guard announced the availability of Navigation and Vessel Inspection Circular (NVIC) No. 1-09, which provides guidance on voluntary compliance with MARPOL Annex IV. On January 1, 2010, the revised effluent standards and performance test criteria for *sewage treatment plants* under MARPOL Annex IV will enter into force internationally. The United States is not party to MARPOL Annex IV; however, vessels registered in the United States visiting nations that are party may need to demonstrate compliance with MARPOL Annex IV regulations on the prevention of pollution by sewage from ships. The U.S. Coast Guard is assisting vessels registered in the United States as well as the manufacturers of *sewage treatment plants*, and the independent laboratories that test such equipment, in demonstrating compliance with MARPOL Annex IV by providing the guidance in NVIC No. 1-09. Failure of a vessel registered in the United States to have the appropriate certificate demonstrating voluntary compliance with MARPOL Annex IV could result in a port State detention abroad.

NVIC 1-09 (https://media.defense.gov/2017/Jul/14/2001777847/-1/-1/0/NVIC_1-09.PDF) establishes the policies, procedures, and standards for MARPOL Annex IV in the United States. These procedures are divided into four distinct sections covering: (1) general applicability, (2) testing facilities, (3) equipment manufacturers, and (4) the issuance of vessel certificates.



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Laboratory Acceptance:

Approval Series: 159.015

Purpose: Laboratories that are in the business of independently evaluating, inspecting, and testing MSDs and the effluent discharged from such systems for compliance with published standards may apply to the U.S. Coast Guard for a letter of acceptance as a *recognized facility* under the provisions of 33 CFR Part 159. The standards for acceptance are contained in 46 CFR 159.010 with specific application procedures provided for in 159.010-5.

Application Procedures: The application for acceptance should be made in writing, signed by the chief laboratory official, and include all of the required information for an *independent laboratory* under 46 CFR 159.010-5. Send the application with supporting documentation to the Systems Engineering Division (CG-ENG-3).

Accepted Laboratories: Laboratories accepted by the U.S. Coast Guard are issued a letter of acceptance that is valid until terminated and are entered into the Coast Guard Maritime Information Exchange (<http://cgmix.uscg.mil/>) (CGMIX). This online searchable database is the official listing of all equipment and laboratories that have been accepted by the U.S. Coast Guard.

International Standards: Laboratories that are in the business of independently evaluating, inspecting, and testing shipboard sewage systems and the effluent discharged from such systems for compliance with published standards may be eligible to receive a U.S. Coast Guard letter of acceptance as a *qualified facility* to evaluate, inspect, and test sewage treatment plants for compliance with MARPOL Annex IV. More information is available in the U.S. Coast Guard Navigation and Vessel Inspection Circular No. 1-09 (https://media.defense.gov/2017/Jul/14/2001777847/-1/-1/0/NVIC_1-09.PDF).

Contact:

Commandant (CG-ENG-3)
U.S. Coast Guard
2703 Martin Luther King Jr. Ave. SE STOP 7509
Washington, D.C. 20593-7509
Tel: +1 (202) 372-1367

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* accepted by the U.S. Coast Guard for certification of MSD under the provisions of 33 CFR Part 159. The standards for certification, including design, construction, and testing, are also contained in 33 CFR Part 159 with specific application procedures in 159.14.

Application Procedures: The application for certification should be made in writing, signed by the manufacturer's representative, and include all of the required information in 33 CFR 159.14. Send the application with supporting documentation to the Marine Safety Center (/Our-Organization/Assistant-Commandant-for-Prevention-Policy-CG-5P/Commercial-Regulations-standards-CG-5PS/Marine-Safety-Center-MS-C/) in Washington DC.

Approved Equipment: MSDs certified by the U.S. Coast Guard are issued a Certificate of Approval that is valid for five years and are entered into the Coast Guard Maritime Information Exchange (<http://cgmix.uscg.mil/>) (CGMIX). This online searchable database is the official listing of all equipment and laboratories that have been accepted by the U.S. Coast Guard.

International Standards: Shipboard sewage systems manufactured in compliance with MARPOL Annex IV may be certified by the U.S. Coast Guard Marine Safety Center (MSC) as meeting the requirements of both 33 CFR Part 159 and MARPOL Annex IV. Type approval is annotated on the U.S. Coast Guard Certificate of Approval. More information is available in the U.S. Coast Guard Navigation and Vessel Inspection Circular No. 1-09 (https://media.defense.gov/2017/Jul/14/2001777847/-1/-1/0/NVIC_1-09.PDF).

Contact:

Commanding Officer (MSC)
Attn: Marine Safety Center

U.S. Coast Guard Stop 7410
Skip to main content (Press Enter).

4200 Wilson Blvd Suite 400
Arlington, VA 20598-7410
202 475 3400



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vessel requirements:

Vessel Manufacturers: Manufacturers may not sell or distribute vessels having an installed toilet facility unless it is equipped with an installed and operational MSD of the type approved by the U.S. Coast Guard to meet the requirements of 33 CFR Part 159. The term *vessel* includes every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on the waters of the United States.

Vessel Operators: No person may operate any Vessel having an installed toilet facility unless it is equipped with an installed and operable MSD of a type approved by the U.S. Coast Guard to meet the requirements of 33 CFR Part 159.

Approved MSDs: There are three different types of MSDs that can be certified by the U.S. Coast Guard to meet the requirements in 33 CFR Part 159, each having its own design, certification, and discharge criteria. For more information see 33 CFR 159.53.

- **Type I** is a flow through discharge device that produces effluent having a fecal coliform bacteria count not greater than 1,000 per 100 milliliters and no visible floating solids. This type of device is typically a physical/chemical based system that relies on maceration and chlorination. Type I MSDs are issued a Certificate of Approval.
- **Type II** is a flow through discharge device that produces effluent having a fecal coliform bacteria count not greater than 200 per 100 milliliters and suspended solids not greater than 150 milligrams per liter. This type of device is typically a biological or aerobic digestion based system.
- **Type III** is a device that prevents the overboard discharge of treated or untreated sewage or any waste derived from sewage. This type of device is typically a holding tank and may include other types of technology including incineration, recirculation, and composting.

Inspected Vessels: In addition to the MSD requirements in 33 CFR Part 159, inspected vessels must also comply with the marine engineering regulations in 46 CFR Subchapter F and the marine electrical regulations in 46 CFR Subchapter J. The U.S. Coast Guard Certificate of Approval and device label will both indicate *inspected vessel* for those devices that meet these additional requirements and therefore are suitable for installation onboard inspected vessels. For more information see 33 CFR 159.97.

International Voyages: U.S. vessels on international voyages may obtain a U.S. Coast Guard Statement of Voluntary Compliance to demonstrate compliance with international sewage regulations contained in Annex IV to MARPOL 73/78. More information is available in the U.S. Coast Guard Navigation and Vessel Inspection Circular No. 1-09 (https://media.defense.gov/2017/Jul/14/2001777847/-1/-1/0/NVIC_1-09.PDF).

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Additional Information:

Built before 1976.

MSDs manufactured before January 30, 1976 having no Certificate of Approval and no device label may have instead been issued a U.S. Coast Guard letter certifying the device meets 33 CFR 159.53 under an equivalency. A copy of this letter should be kept on board the vessel at all times to demonstrate compliance. Vessels that do not have this letter may not be in compliance. For more information see 33 CFR 159.12.

Capacity.

Regulations allow for the manufacturer to determine MSD capacity. As a result, manufacturers have used widely varying per capita sewage estimates in calculating equipment capacity, ranging from 35 liters per day to 35 gallons per day. For more information see the capacity white paper (<https://www.uscg.mil/hq/cg5/cg5213/docs/capacity.pdf>).

Effluent sampling.

Under the law, it may become necessary to take a sample of the effluent discharged from an MSD especially when a marine inspector suspects a vessel is not in proper condition. In this case, the marine inspector will require the vessel owner to have an effluent sample

taken by a state-certified wastewater laboratory with results reported to the USCG. The laboratory findings may form the basis for an enforcement action that could result in civil penalty, so only qualified personnel can take, transport, and analyze the MSD effluent.

Expired certificate



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by the (<http://www.uscg.mil/>) is manufactured during this five year period in accordance with the terms of the certificate may be installed on a vessel to meet the requirements of 33 CFR Part 159. Unless otherwise specified by regulation, existing approved equipment installed onboard a vessel may remain installed onboard as long as the equipment remains in good and serviceable condition.

Foreign vessels.

Any vessel flagged or registered outside the United States that holds a valid International Sewage Pollution Prevention Certificate (ISPPC) issued by its flag Administration indicating the installed sewage system complies with MARPOL Annex IV as amended by resolutions MEPC.227(64), MEPC.159(55) or MEPC.2(VI) will be accepted by the U.S. Coast Guard as being in compliance with U.S. regulations contained in 33 CFR 159 as it relates to the design, construction, testing, and certification, while operating in waters subject to the jurisdiction of the United States. For more information see Navigation and Vessel Inspection Circular No. 1-09 (https://media.defense.gov/2017/Jul/14/2001777847/-1/-1/0/NVIC_1-09.PDF).

Graywater.

Graywater includes drainage from dishwater, shower, laundry, bath, and washbasin drains but not from toilets, urinals, hospital spaces, and cargo spaces. Graywater is not sewage and therefore may be discharged overboard without passage through an MSD or a holding tank, except where otherwise prohibited. For more information see the graywater white paper (</Portals/9/DCO%20Documents/5p/5ps/Design%20and%20Engineering%20Standards/Systems%20Engineering%20Division/capacity.pdf?ver=2017-06-20-144551-080>).

Houseboats.

States may adopt and enforce a statute or regulation with respect to the design, manufacture, installation, and use of MSDs on houseboats provided such published standard is stricter than those published by the EPA and USCG. The term *houseboat* refers to a vessel which, for a period of time determined by the State in which the vessel is located, is used primarily as a residence and is not used primarily as a means of transportation. For more information see 33 U.S.C. 1322(f)(1)(B).

Illegal discharge.

Effluent discharged from a vessel that does not meet EPA's published standard subjects the vessel owner or operator to civil penalty of up to \$2,000 for each violation under section 1322(j) of the Act. Strict adherence to all of the manufacturer's operating instructions may be taken into consideration when determining the gravity of the violation. The device itself may be investigated to determine why it was not capable of meeting EPA's effluent standard and, in this case, the manufacturer may be in violation of section 312(g)(1) of the Act which requires that all MSDs be "...in all material respects substantially the same as a test device certified under this subsection." The maximum penalty for each violation of this subsection is \$5,000. For more information see 33 U.S.C. 1322(j). If you witness a vessel discharging raw or untreated sewage inside U.S. waters or if you see a visible floating solid in the wastestream then you are encouraged to report it to your nearest Coast Guard office or to the National Response Center (<http://www.nrc.uscg.mil/>) 24-hours a day.

Legal basis.

Section 312 of the Clean Water Act, which is also known as the Federal Water Pollution Control Act of 1956, requires a certified operable MSD on every vessel with an installed toilet to prevent the discharge of untreated or inadequately treated sewage into U.S. waters. It is illegal for vessels having an installed toilet but no MSD to discharge sewage. Section 312(g)(2) of the Act directs the Coast Guard to certify MSDs. For more information see 33 U.S.C. 1322, et. seq.

Malfunctions.

Vessel owners and operators are encouraged to report any information regarding faulty equipment such as MSDs to the Systems Engineering Division (CG-ENG-3). Be specific in describing the problem and include the manufacturer's name, the USCG certification number, type of vessel, date of installation, and maintenance record.

No discharge zone.

While operating a vessel in an EPA designated no discharge zone, flow-through devices are only permitted if adequately secured to prevent discharges of all treated and untreated sewage. For example, closing the seacock and padlocking, using a non-releasable wire tie, or removing the seacock handle are considered to be sufficient in most cases. For short voyages, locking the door to the head with a padlock or a door handle key lock is another acceptable method. For vessels that routinely operate in no discharge zones a Type III MSD is recommended. For more information see 33 CFR 159.7 and 40 CFR Part 140.

Other jurisdictions & agencies.

Vessel owners and operators are responsible for complying with other local, state, and Federal agencies having jurisdiction on the water. For example, foreign passenger vessels calling at U.S. ports are subject to USCG quarterly control verification boardings. The Public Health Service (Centers for Disease Control) also inspects the sanitation of passenger vessels calling at U.S. ports.

Portable toilets.

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Vessels having no installed toilet are not subject to the provisions of Section 312 of the Act. Portable toilets or porta-potties that use no installed water, power, etc., are not considered installed toilets and therefore not subject to the requirements in 33 CFR Part 159. However, regulations still exist to prohibit disposal of raw sewage within U.S. territorial waters, the Great Lakes, and navigable rivers.



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impracticable (http://www.uscg.mil/). In case such devices should be rendered permanently inoperable. For inspected vessels using portable systems, use only devices manufactured of a durable material, such as molded plastic, aluminum, etc., to facilitate removal ashore, securely fastened to the vessel using straps, wooden framing, or similar materials, and maintained by the vessel operator following the manufacturers instructions as to waste disposal, chemical additives, etc.

Toilets & urinals.

The U.S. Coast Guard does not certify or approve urinals or toilets for vessels. Such devices are subject to the provisions of any applicable marine engineering and electrical requirements for the particular class of vessel.

Type III devices.

Ambient air pressure & temperature. A Type III device that stores sewage and flushwater at ambient air pressure and temperature is not subject to formal U.S. Coast Guard certification if it meets the requirements in 33 CFR 159.53(c). Such devices will have no U.S. Coast Guard Certificate of Approval, no U.S. Coast Guard letter, and no device label.

Adequacy. Type III MSDs should be of adequate size and construction to retain all wastewater generated while the vessel is operating in U.S. waters. For example, the use of piping to hold sewage or the securing of a head's direct overboard discharge valve are not adequate Type III devices.

Existing vessels. Any Type III device installed on an *existing vessel* before January 30, 1975 is considered certified under 33 CFR 159.12(b) and will have no U.S. Coast Guard Certificate of Approval, no letter, and no device label. In this case, *existing vessel* means that construction started before January 30, 1975.

Y valve. Type III MSDs having a through hull Y valve must only be opened when the vessel is offshore, beyond the limit of U.S. territorial waters. At all other times, the valve must be positively secured in a way that presents a physical barrier to valve use and prevents all discharges. Adequate means include the use of padlock, non-releasable wire-tie, or removal of the valve handle. For more information see 33 CFR 159.7.

Inspected vessels. Inspected vessels having Type III MSDs must still comply with the marine engineering regulations in 46 CFR Subchapter F and the marine electrical regulations in 46 CFR Subchapter J, where applicable.

FOIA (http://www.dcms.uscg.mil/)	Privacy Policy (http://www.uscg.mil/PrivacyPolicy/)	MHS Notice of Discrimination Practices (https://www.uscg.mil/hswlsc/)
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