

BRIEF OF SEWAGE TREATMENT PLANT

Sewage Treatment

1. Sewage treatment is the process of removing contaminants from municipal wastewater, containing mainly household sewage plus some industrial wastewater. Physical, chemical, and biological processes are used to remove contaminants and produce treated wastewater (or treated effluent) that is safe enough for release into the environment. A by-product of sewage treatment is a semi-solid waste or slurry, called sewage sludge. The sludge has to undergo further treatment before being suitable for disposal or application to land.

2. Sewage treatment may also be referred to as wastewater treatment. However, the latter is a broader term which can also refer to industrial wastewater. For most cities, the sewer system will also carry a proportion of industrial effluent to the sewage treatment plant which has usually received pre-treatment at the factories themselves to reduce the pollutant load. If the sewer system is a combined sewer then it will also carry urban runoff (storm water) to the sewage treatment plant. Sewage water can travel towards treatment plants via piping and in a flow aided by gravity and pumps. The first part of filtration of sewage typically includes a bar screen to filter solids and large objects which are then collected in dumpsters and disposed of in landfills. Fat and grease is also removed before the primary treatment of sewage.

Marine Sewage Treatment

3. The discharge of raw sewage into the sea can create a health hazard. Sewage can also lead to oxygen depletion at the marine eco systems and pollution in coastal areas. Though the main sources of human-produced sewage are land based, the discharge of sewage into the sea from ships also contributes to marine pollution.

4. Therefore, MARPOL regulations contains a set of regulations regarding the discharge of sewage into the sea from ships, including regulations regarding the ships' equipment and systems for the control of sewage discharge, the provision of port reception facilities for sewage and requirements for survey and certification.

5. It is generally considered that on the high seas, the oceans are capable of assimilating and dealing with raw sewage through natural bacterial action. Therefore, the regulations prohibit discharge of sewage within a specified distance from the nearest land, except when the ship has in operation an approved sewage treatment plant.

6. The regulations of sewage treatment provided by MARPOL and other requirements of the Indian Navy are contained in NCD 3930 Issue 3, which provides specifications of sewage treatment plants for Indian Naval ships. Sewage treatment plants are fitted onboard Indian Naval Ships to accrue the following advantages:-

(a) Ensure seamless operability of *IN* ships with an unrestricted entry to Ports globally (including MARPOL compliant ports), with stricter restrictions on discharge of sewage.

(b) Minimization of waste signatures from ships in consonance with IN's 'Energy Conservation Roadmap' and recognition as a globally conscious Navy.

Import Substitution

7. Presently, marine sewage treatment plants are being procured from International manufacturers for use onboard Indian Naval ships. The current project under Make II scheme aims at indigenous design and development of the equipment for Indian Navy.