



Standard Specification for Sewage and Graywater Flow Through Treatment Systems¹

This standard is issued under the fixed designation F2363/F2363M; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

INTRODUCTION

Shipboard treatment of wastewater has evolved over the years from systems using maceration and chlorination techniques to more advanced biological systems that are designed to treat a single wastestream of sewage followed more recently by complex bio-reactor systems employing advanced oxidation and high-powered UV systems that are designed to remove organic and inorganic materials from a combined wastestream of sewage and graywater.

Advancements in treatment technologies have been fueled, in part, by shipping companies wanting to adopt more environmentally friendly practices as well as by regulatory bodies imposing more stringent standards on wastewater discharges from ships.

This standard is a consolidated source of sewage and graywater treatment system requirements that combines international requirements in MARPOL Annex IV with requirements of other regulatory bodies and overlays industry best practices.

1. Scope

1.1 This specification covers the design, manufacture, performance, operation, and testing of flow through treatment systems intended to process sewage or graywater, or both, generated during a ship's normal service. This specification is intended for use by designers, manufacturers, purchasers, and operators of shipboard environmental pollution control equipment to determine the requirements for equipment design, manufacture, purchase, and in-service operation.

1.2 The treatment system shall be capable of meeting the effluent requirements detailed in Section 4 with respect to a ship's operational area.

1.3 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

¹ This specification is under the jurisdiction of ASTM Committee F25 on Ships and Marine Technology and is the direct responsibility of Subcommittee F25.06 on Marine Environmental Protection.

Current edition approved May 1, 2012. Published June 2012. Originally approved in 2004. Last previous edition approved in 2006 as F2363 - 06. DOI:10.1520/F2363_F2363M-12.

2. Referenced Documents

2.1 ASTM Standards:²

- A307 Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength
- A563 Specification for Carbon and Alloy Steel Nuts
- B117 Practice for Operating Salt Spray (Fog) Apparatus
- B165 Specification for Nickel-Copper Alloy (UNS N04400) Seamless Pipe and Tube
- D1253 Test Method for Residual Chlorine in Water
- E11 Specification for Woven Wire Test Sieve Cloth and Test Sieves
- F906 Specification for Letters and Numerals for Ships
- F992 Specification for Valve Label Plates
- F993 Specification for Valve Locking Devices
- F998 Specification for Centrifugal Pump, Shipboard Use
- F1030 Practice for Selection of Valve Operators
- F1098 Specification for Envelope Dimensions for Butterfly Valves—NPS 2 to 24
- F1122 Specification for Quick Disconnect Couplings (6 in. NPS and Smaller)
- F1155 Practice for Selection and Application of Piping System Materials
- F1166 Practice for Human Engineering Design for Marine Systems, Equipment, and Facilities
- F1298 Specification for Flexible, Expansion-Type Ball

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.