



Standard Guide for Selection of Shipboard Incinerators¹

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1. Scope

1.1 This guide covers selection criteria to assist procurers in selecting the appropriate incinerator for their needs.

1.2 This guide is a companion document to Specification F1323.

1.3 This guide does not apply to incinerator systems on special incinerator ships, for example, for burning industrial wastes such as chemicals, manufacturing residues, and so forth.

1.4 The values stated in SI units are to be regarded as standard. The values given in parentheses are mathematical conversions to inch-pound units that are provided for information only and are not considered standard.

2. Referenced Documents

- 2.1 *ASTM Standards*:²
F1323 Specification for Shipboard Incinerators
- 2.2 *Other Document*:³
MARPOL 73/78

3. Terminology

3.1 Definitions:

3.1.1 *batch feeding, n*—non-continuous feeding incinerator where the combustion chamber shall be cooled down between placing solid waste into the combustion chamber.

3.1.2 *continuous feeding, n*—pump transfer of sludge oil into the incinerator combustion chamber on a continuous basis; also, the feeding of solid waste into the combustion chamber by a screw conveyor or sluice system.

3.1.3 *sludge oil, n*—residual from fuel and lubricating oil separators, oily waste from machinery and hydraulic power units, drip trays, and oil-water separators.

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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.

³ Available from International Maritime Organization (IMO), 4, Albert Embankment, London, UK, SE1 7SR, http://www.imo.org.

3.1.4 *sluice system, n*—trap door system, whereby it is possible in a safe manner to feed solid waste into the combustion chamber while the incinerator is operating at high temperature.

3.1.5 *solid waste, n*—combustible trash, garbage, and rubbish (see also 7.4).

3.1.6 *waste, n*—unneeded or useless matter which is to be discarded.

4. Selecting the Incinerator Size and Installed Location

4.1 A number of factors will govern the selection of the size and type of shipboard incinerator and full consideration must be given to each. The installed operating location of the unit is of equal importance to ensure low-cost operating, ease of charging, ease of cleaning, and so forth. Consideration should be given to the following:

4.1.1 Maximum amount of each type of waste that will be incinerated each day (see Section 5).

4.1.2 The normal number of hours per day that the incinerator will be in operation.

4.1.3 Loading procedure (batch/continuous) over operating hours.

4.1.4 Can wet and dry material be loaded into the incinerator so that a large volume of auxiliary fuel is not required?

4.1.5 Can the incinerator be installed on the ship in a location near the major source of refuse so as to minimize the manpower requirements during loading operations?

4.1.6 Ash removal, if the incinerator is installed in the machinery space or on a lower deck.

4.1.7 Will ash removal be manual (shoveling) or semiautomatic (plow)?

5. Estimating Daily Quantities of Waste to Be Incinerated

5.1 *Size of Ship's Crew:*

5.1.1 Galley and crew quarters waste estimate: 1.5 kg (3.3 lb) per crew member per day.

5.2 *Number of Passengers Carried:*

5.2.1 Galley and passenger quarters waste estimate: 2.5 kg (5.5 lb) per passenger per day.

5.3 *Stores*—Estimated amount of packaging for food and other items that, during the underway period, will become