BS ISO 13617:2019

BSI Standards Publication

Ships and marine technology — Shipboard incinerators — Requirements

Documents
Document Sharing Hub

Full document details: BS ISO 13617:2019

National foreword

This British Standard is the UK implementation of ISO 13617:2019. It supersedes BS ISO 13617:2001, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee SME/32, Ships and marine technology - Steering committee.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2019
Published by BSI Standards Limited 2019

ISBN 978 0 580 99512 5

ICS 13.030.40; 47.020.99

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 August 2019.

Amendments/corrigenda issued since publication

Date	Text affected

Documents
Document Sharing Hub

Full document details: BS ISO 13617:2019

INTERNATIONAL STANDARD

ISO 13617

Third edition
2019-08

Ships and marine technology — Shipboard incinerators — Requirements

Navires et technologie maritime — Incinérateurs de bord pour navires — Exigences

Reference number
ISO 13617:2019(E)

Documents
Document Sharing Hub
© ISO 2019

Full document details: BS ISO 13617:2019

COPYRIGHT PROTECTED DOCUMENT

© ISO 2019

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub

Full document details: BS ISO 13617:2019

Contents

Page

Foreword ..... **v**

1 Scope **1**

2 Normative references **1**

3 Terms and definitions **2**

4 General design requirements **4**
4.1 Piping 4
4.2 Rotating parts 4
4.3 Insulation and cooling 4
4.4 Corrosion 4
4.5 Liquid waste incineration 4
4.6 Combustion chamber 4
4.7 Combustion pressure 4
4.8 Charging solid waste 5
4.9 Feeding system 5
4.10 Ash removal 5
4.11 Observation port 5
4.12 Design temperature values 5
4.13 Pre-purging and post-purging 5
4.14 Mass fraction of oxygen in the discharge gases 5
4.15 Warning plate(s) 6
4.16 Instruction plate(s) 6
4.17 Flue gas cooling 6

5 Electrical requirements **6**
5.1 General requirements 6
5.2 Disconnects 6
5.3 Live parts 6
5.4 Failure design 6
5.5 Control-circuit connections 6
5.6 Component voltage ratings 6
5.7 Weather endurance 7
5.8 Control device testing and acceptance 7
5.9 Control-circuit design 7
5.10 Overcurrent protection 7
5.11 Motors 7
5.12 Ignition systems 7
5.13 Wiring 7
5.14 Bonding 8

6 Materials **8**

7 Operating controls **8**
7.1 Disconnect switch 8
7.2 Emergency stop switch 8
7.3 Control equipment failures 8
7.3.1 General provisions 8
7.3.2 Safety thermostat 8
7.3.3 Flame failure/low oil pressure 8
7.3.4 Loss of power condition 9
7.4 Fuel-control valves 9
7.5 Alarms and indicators 9
7.6 Fire box cooling 9

8 Other requirements **9**
8.1 Instruction and maintenance manual 9
8.2 Operation while inclined 9

© ISO 2019 – All rights reserved

AVA Documents
Document Sharing Hub

Full document details: BS ISO 13617:2019

8.3 Energy source ... 10
8.4 Drip trays ... 10

9 Testing ... 10
9.1 Prototype testing ... 10
9.2 Factory testing ... 10
9.3 Installation tests ... 10
9.3.1 Flame safeguard system ... 10
9.3.2 Limit controls ... 10
9.3.3 Combustion controls ... 10
9.3.4 Programming controls ... 11
9.3.5 Fuel control valves ... 11
9.3.6 Low voltage controls ... 11
9.3.7 Switches ... 11

10 Certification ... 11

11 Marking ... 11

12 Quality assurance ... 11

Annex A (normative) **Emission requirements for shipboard incinerators with capacities of up to 4 000 kW on ships subject to MARPOL ... 12**

Annex B (normative) **Location requirements for incinerators ... 18**

Annex C (informative) **Incinerators integrated with heat recovery units ... 20**

Annex D (normative) **Flue gas temperature ... 21**

Bibliography ... 22

© ISO 2019 – All rights reserved
Documents
Document Sharing Hub
Full document details: BS ISO 13617:2019

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 8, *Ships and marine technology,* Subcommittee SC 2, *Marine environment protection.*

This third edition cancels and replaces the second edition (ISO 13617:2001), which has been technically revised.

The main changes compared to the previous edition are as follows:

— the document was revised for continued consistency with International Maritime Organization provisions for shipboard incinerators, which was updated in 2014;

— several updates were made to the definitions in Clause 3 and to the references of standards cited in Clause 5;

— updates also reflect changes in the regulations of the International Maritime Organization, *International Convention on the Safety of Life at Sea, 2014 (SOLAS)*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO 13617:2019

Documents
Document Sharing Hub

Full document details: BS ISO 13617:2019

Ships and marine technology — Shipboard incinerators — Requirements

1 Scope

This document covers the design, manufacture, performance, operation, functioning and testing of incinerators intended to incinerate garbage and other shipboard wastes generated during a ship's normal service (i.e. maintenance, operational, domestic and cargo-associated wastes).

This document is applicable to incinerator plants with capabilities up to 4 000 kW per unit.

This document is not applicable to systems on special incinerator ships, e.g. for burning industrial wastes such as chemicals, manufacturing residues, etc.

It does not address the electrical supply to the unit, nor the foundation connections and stack connections.

This document provides emission requirements in Annex A, location requirements in Annex B, and flue gas temperature requirements in Annex D. Recommendations for incinerators integrated with heat recovery units are given in Annex C.

The activities associated with this document can involve hazardous materials, operations and equipment. It does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this document to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

International Maritime Organization. *International Convention on the Safety of Life at Sea*, 2014 (SOLAS), Chapter II-2, Regulations 3 and 9

International Maritime Organization. *International Convention for the Prevention of Pollution from Ships*, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL)

IEC 60092, *Electrical installations in ships*

IEC 60092-201:1994, *Electrical installations in ships — Part 201: System design — General*

IEC 60092-202:2016, *Electrical installations in ships — Part 202: System design — Protection*

IEC 60092-301:1980, *Electrical installations in ships — Part 301: Equipment — Generators and motors*

IEC 60092-352:2005, *Electrical installations in ships — Part 352: Choice and installation of cables for low-voltage power systems*

IEC 60092-503:2007, *Electrical installations in ships — Part 503: Special features — A.C. supply systems with voltages in the range of 1 kV and up to and including 11 kV*

IEC 60529:1989 (Amd 1:1999, Amd 2:2013), *Degrees of protection provided by enclosures (IP Code)*

ISO/IEC 17025:2017, *General requirements for the competence of testing and calibration laboratories*

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO 13617:2019

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
administration
government of the state whose flag the ship is entitled to fly

3.2
cargo residues
remnants of any cargo material which are not covered by the annexes in MARPOL 73/78, except Annex V, and which remain on the deck or in holds following loading or unloading, including loading and unloading excess or spillage, whether in wet or dry conditions or entrained in wash water, but does not include cargo dust remaining on the deck after sweeping or dust on the external surfaces of the ship

Note 1 to entry: Dry bulk cargo residues may include substances that are harmful to the marine environment (HME) with special restrictions for discharges including HME entrained in cargo hold wash water. Port reception facilities for cargo residues considered to be HME may be required at loading or discharge ports handling bulk dry cargoes.

[SOURCE: MARPOL 73/78, Annex V reg. 1.2, modified — The wording "other annexes to the present (IMO) Convention" has been changed to "the annexes in MARPOL 73/78, except Annex V".]

3.3
contaminated rag
rag that has been saturated with any substance defined in MARPOL 73/78 as potentially hazardous or harmful to human health and/or the environment

3.4
food waste
any spoiled or unspoiled food substances

EXAMPLE Fruits, vegetables, dairy products, poultry, meat products, food scraps, food particles and all other materials contaminated by such wastes, generated aboard ship.

3.5
garbage
all kinds of *food waste* (3.4), domestic waste and *operational waste* (3.9), all *plastics* (3.11), *cargo residues* (3.2), *incinerator ashes* (3.7), cooking oil, fishing gear and animal carcasses generated during the normal operation of the ship and liable to be disposed of continuously or periodically except those substances which are defined or listed in the annexes in MARPOL 73/78, except Annex V

Note 1 to entry: Garbage does not include fresh fish and parts thereof generated as a result of fishing activities undertaken during the voyage, or as a result of aquaculture activities which involve the transport of fish including shellfish for placement in the aquaculture facility and the transport of harvested fish including shellfish from such facilities to shore for processing.

[SOURCE: MARPOL 73/78, Annex V reg. 1]

3.6
incinerator
shipboard facility designed for the primary purpose of incineration of waste, such as domestic waste, cargo-associated waste, *maintenance waste* (3.8), *operational waste* (3.9), *cargo residues* (3.2) and fishing gear

Note 1 to entry: These facilities may be designed to use or not use the heat energy produced.

© ISO 2019 – All rights reserved
Documents
Document Sharing Hub
Full document details: BS ISO 13617:2019