



SLOVENSKI STANDARD SIST EN ISO 15749-4:2004

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Ladje in pomorska tehnologija – Sistemi za odvajanje vode/odplak z ladij in struktur na morju – 4. del: Sanitarni sistem, praznjenje (ISO 15749-4:2004)

Ships and marine technology - Drainage systems on ships and marine structures - Part 4: Sanitary drainage, sewage disposal pipes (ISO 15749-4:2004)

Schiffe und Meerestechnik - Entwässerungsanlagen auf Schiffen und Seebauwerken - Teil 4: Sanitär-Entwässerung, Schwarzwasser-Entleerungsleitungen (ISO 15749-4:2004)

Navires et technologie maritime - Installations de drainage sur navires et structures maritimes - Partie 4: Drainage sanitaire, tuyaux d'évacuation des eaux usées (ISO 15749-4:2004)

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ICS:

47.020.30 Sistemi cevi Piping systems

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EN ISO 15749-4

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English version

Ships and marine technology - Drainage systems on ships and marine structures - Part 4: Sanitary drainage, sewage disposal pipes (ISO 15749-4:2004)

Navires et technologie maritime - Installations de drainage sur navires et structures maritimes - Partie 4: Drainage sanitaire, tuyaux d'évacuation des eaux usées (ISO 15749-4:2004)

This European Standard was approved by CEN on 7 June 2004.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

EN ISO 15749-4:2004 (E)**Foreword**

This document (EN ISO 15749-4:2004) has been prepared by Technical Committee ISO/TC 8 "Ships and marine technology" in collaboration with Technical Committee CEN/TC 300 "Sea-going vessels and marine technology", the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2004, and conflicting national standards shall be withdrawn at the latest by December 2004.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Endorsement notice

The text of ISO 15749-4:2004 has been approved by CEN as EN ISO 15749-4:2004 without any modifications.

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INTERNATIONAL
STANDARD

ISO
15749-4

First edition
2004-06-15

**Ships and marine technology — Drainage
systems on ships and marine
structures —**

Part 4:

Sanitary drainage, sewage disposal pipes

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*Navires et technologie maritime — Installations de drainage sur navires
et structures maritimes —*

Partie 4: Drainage sanitaire, tuyaux d'évacuation des eaux usées

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ISO 15749-4:2004(E)

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 15749-4 was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee SC 3, *Piping and machinery*.

ISO 15749 consists of the following parts, under the general title *Ships and marine technology — Drainage systems on ships and marine structures*: **(standards.iteh.ai)**

- *Part 1: Sanitary drainage-system design* [SIST EN ISO 15749-4:2004](https://standards.iteh.ai/catalog/standards/sist/c5b6e46-3603-4574-9089-d16f6b9c814a/sist-en-iso-15749-4-2004)
- *Part 2: Sanitary drainage, drain piping for gravity systems* <https://standards.iteh.ai/catalog/standards/sist/c5b6e46-3603-4574-9089-d16f6b9c814a/sist-en-iso-15749-4-2004>
- *Part 3: Sanitary drainage, drain piping for vacuum systems*
- *Part 4: Sanitary drainage, sewage disposal pipes*
- *Part 5: Drainage of decks, cargo spaces and swimming pools*

Ships and marine technology — Drainage systems on ships and marine structures —

Part 4: Sanitary drainage, sewage disposal pipes

1 Scope

This part of ISO 15749 applies to the design of sewage disposal pipes within the framework of sanitary drainage on ships and marine structures.

For planning and basic requirements, see ISO 15749-1.

2 Normative references

The following referenced documents are indispensable for the application 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.

ISO 4200, *Plain end steel tubes, welded and seamless — General tables of dimensions and masses per unit length*

ISO 9329-1, *Seamless steel tubes for pressure purposes — Technical delivery conditions — Part 1: Unalloyed steels with specified room temperature properties*

ISO 9330-1, *Welded steel tubes for pressure purposes — Technical delivery conditions — Part 1: Unalloyed steel tubes with specified room temperature properties*

ISO 15749-1, *Ships and marine technology — Drainage systems on ships and marine structures — Part 1: Sanitary drainage-system design*

ISO 15749-5, *Ships and marine technology — Drainage systems on ships and marine structures — Part 5: Drainage of decks, cargo spaces and swimming pools*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 15749-1 apply.

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4 Disposal

4.1 General

For the disposal of wastewater from sanitary drainage systems, a distinction is made between:

- overboard wastewater disposal via a wastewater storage unit and disposal pipes overboard or to a connection from where it is transferred to an external disposal point (see 4.2);

NOTE Wastewater storage units according to this part of ISO 15749 are collector tanks, sewage treatment plants, or vacuum generating units for the respective facilities

- discharge directly overboard via gravity drain lines (see 4.4).

4.2 Disposal points with storage units

4.2.1 Disposal piping system

Disposal lines from storage units to disposal points shall be designed as pressure lines; for details see Figure 1.

Figure 1 shows a simplified example of routing of disposal lines within the framework of a sanitary drainage system, leading from the storage unit (e.g. collector tank, sewage treatment plant) to the disposal points.

4.2.2 Discharge over the side

4.2.2.1 Closing devices

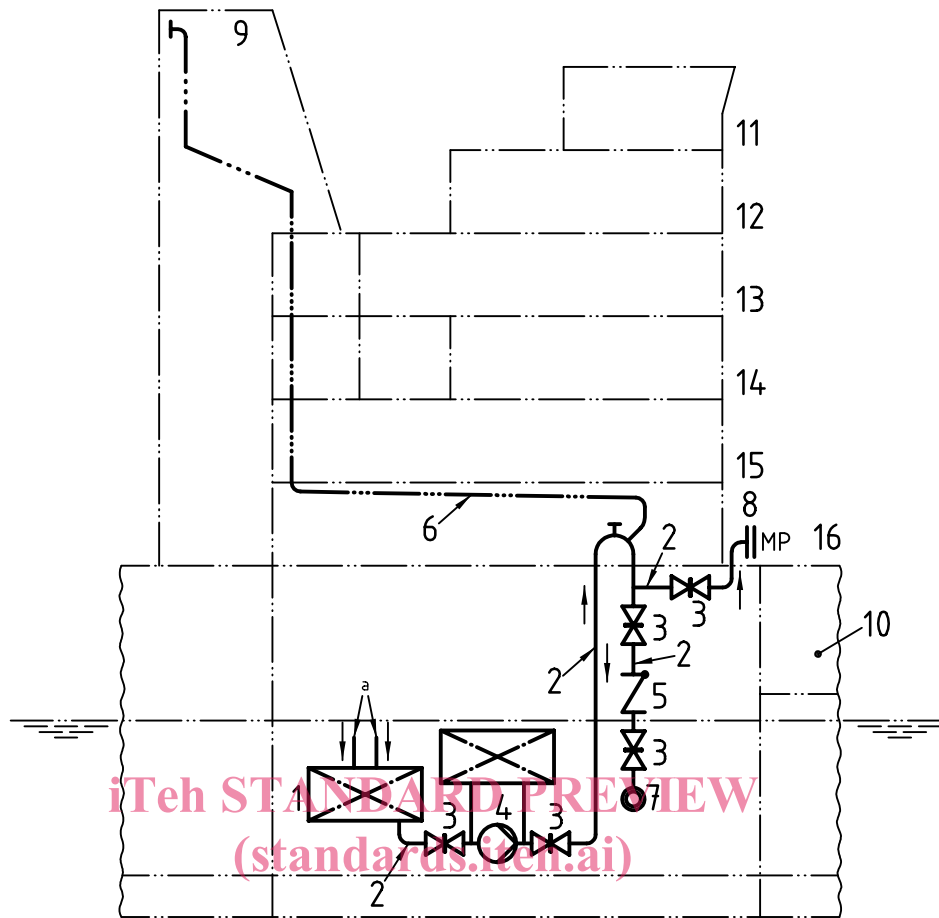
As closing devices, fittings shall be installed in the disposal piping section between the wastewater pump and the wastewater outlet (piping section Z); see Figure 2. Closing devices shall be certified by the classification societies.

The arrangement, number, and type of fittings depends on the vertical distance from the summer loadline/bulkhead deck of the lowest opening (drain).

NOTE Such openings (drains) also include, for example, emergency overflows of sewage treatment plants or openings for dosing of chemicals.

4.2.2.2 Drains

4.2.2.2.1 In the disposal pipe, a screw-down non-return valve shall be installed at the shell. If it is not possible to place the shutoff fitting directly at the shell, the pipe from the shell to the shutoff fitting has to be designed thick-walled, see 6.1 and Figure 3.



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Key

- | | | | |
|---|--|----|-------------------------------------|
| 1 | sewage treatment plant, collector tank or vacuum generating unit for these installations | 9 | funnel |
| 2 | disposal pipe | 10 | cargo space |
| 3 | valve | 11 | bridge |
| 4 | wastewater pump | 12 | 4 th superstructure deck |
| 5 | non-return valve | 13 | 3 rd superstructure deck |
| 6 | vent line | 14 | 2 nd superstructure deck |
| 7 | wastewater outlet in the shell | 15 | 1 st superstructure deck |
| 8 | international wastewater shore connection (MARPOL-flange) | 16 | freeboard/bulkhead deck |
- a Wastewater from accommodation areas and service spaces.

Figure 1 — Example of a sewage disposal system with storage unit upstream of the discharge point