INTERNATIONAL STANDARD

ISO 8099-1

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Small craft — Waste systems —

Part 1: Waste water retention

Petits navires — Circuits d'eaux usées —

Partie 1: Rétention des eaux usées

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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 on 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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 188, *Small craft*.

This first edition cancels and replaces ISO 8099:2000, which has been technically revised.

The main changes compared to the previous edition are in 4.1, 4.2, 4.9 and 9.4.

A list of all parts in the ISO 8099 series can be found on the ISO website.

Small craft — Waste systems —

Part 1:
Waste water retention

1 Scope

This document specifies requirements for the design, construction and installation of systems for temporary retention of sewage for subsequent disposal. It applies to small craft with a length of hull (L_H) of up to 24 m.

This document does not address waste water treatment systems.

2 Normative reference

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.

ISO 228-1, *Pipe threads where pressure-tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation*

ISO 9093-1, *Small craft — Seacocks and through-hull fittings — Part 1: Metallic*

ISO 9093-2, *Small craft — Seacocks and through-hull fittings — Part 2: Non-metallic*

ISO 10133, *Small craft — Electrical systems — Extra-low-voltage d.c. installations*

ISO 13297, *Small craft — Electrical systems — Alternating current installations*

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:

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

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

3.1
retention system
interconnected sanitation equipment including hoses, pipes, *holding tank* (3.6) and fittings designed for use on board small craft to receive, retain, vent and dispose of *sewage* (3.2)

3.2
sewage
human body wastes and the wastes, including flushing water, from toilets and other receptacles intended to receive or retain these wastes

3.3
accessible
capable of being reached for inspection, removal or maintenance without removal of the permanent craft structure

3.4
readily accessible
capable of being reached for operation, inspection or maintenance without removal of any parts of the craft structure or use of any tools

3.5
portable holding tank
holding tank (3.6) designed and intended to be removed from the craft for the disposal of its contents

3.6
holding tank
tank intended to receive and hold *sewage* (3.2) from toilets and other receptacles for disposal at another time

4 General requirements

4.1 Any toilet in a retention system shall be connected solely to a holding tank. If required, a Y-valve shall not be placed between the toilet and the holding tank.

NOTE See Annex B for an example of a typical installation.

4.2 Craft with permanently installed holding tanks shall be fitted with a standard discharge connection as specified in Annex A to enable pipes of reception facilities to be connected with the craft discharge pipeline.

Any through-hull fittings for sewage shall be fitted with valves which are capable of being secured in the closed position.

4.3 The system shall be installed to prevent the emission of vapour and liquids within the craft.

4.4 The system shall be capable of operation throughout an ambient temperature range of +1 °C to +60 °C and shall withstand, when empty, an ambient temperature range of −40 °C to +60 °C.

4.5 The system shall be capable of operation, i.e. discharge of sewage from the toilet to the retention system, when the boat is heeled at all angles up to 20° for monohull sailing craft and 7° for other craft.

4.6 Back siphoning shall be prevented from raw water intakes and discharge outlets up to a heel angle to either side of at least 30° for monohull sailing craft, 20° for other craft and a trimmed condition at the bow or stern of at least 10°.

4.7 Back siphoning of the contents and escape of gas from the holding tank back through the toilet fixture shall be prevented when the boat is heeled at all angles up to 30° for monohull sailing craft, 20° for other craft and a trimmed condition at the bow or stern of at least 10°.

4.8 Escape of sewage from the holding tank to the exterior of the craft shall be prevented when the boat is heeled at all angles up to 30° for monohull sailing craft, 20° for other craft, at 90 % of tank capacity and to the interior of the craft under maximum anticipated conditions of heel or trim, i.e. 45° for monohull sailing craft, 30° for other craft.

4.9 Electrical systems shall meet the electrical requirements of ISO 13297 and ISO 10133.

4.10 The permanently installed retention system including all tanks, connecting piping, hoses, and fittings, shall be tested to withstand a pressure of 20 kPa for a period of 5 min without leaking.

The tank shall withstand a negative pressure of 20 kPa for a period of 5 min without permanent deformation.