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Small craft — Waste systems —

Part 2: Sewage treatment systems

Petits navires — Circuits d'eaux usées —

Partie 2: Traitement des eaux usées

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Foreword

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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).

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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 188, *Small craft*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 464, *Small craft*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

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

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.

Small craft — Waste systems —

Part 2: Sewage treatment systems

1 Scope

This document specifies requirements for the design, construction and installation of sewage treatment systems on small craft.

It does not address waste retention systems, nor accidental discharge prevention of pollutants (e.g. oil, fuel) overboard.

It does not address the technical discharge limits of a sewage treatment unit, subject to certain international as well as national regulations.

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.

ISO 8099-1:2018, *Small craft — Waste systems — Part 1: Waste water retention*

ISO 9093:2020, *Small craft — Seacocks and through-hull fittings*

ISO 13297:2020, *Small craft — Electrical systems — Alternating and direct 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:

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

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

3.1
sewage
black water
human body wastes and the wastes, including flushing water, from toilets and other receptacles intended to receive or retain these wastes

Note 1 to entry: This includes any water that comes into direct contact with sewage.

[SOURCE: ISO 8099-1:2018, 3.2, modified - Note 1 to entry has been added.]

3.2
sewage treatment system
interconnected sanitation equipment, including the *sewage treatment unit* (3.3), hoses, pipes, tanks and fittings, designed for use on board *small craft* (3.7) to treat and dispose of treated sewage

3.3
sewage treatment unit
unit which processes *sewage* (3.1) to reduce contaminants (e.g. nitrogen, phosphorous, coliforms and suspended solids) to acceptable levels before discharge

Note 1 to entry: Acceptable levels can be subject to certain regulations, see Annex A.

3.4
accessible
capable of being reached for inspection, removal or maintenance without removal of the permanent craft structure

3.5
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

3.6
sewage holding tank
tank intended to receive and hold *sewage* (3.1) or treated sewage

3.7
craft
small craft
recreational boat, and other watercraft using similar equipment, of up to 24 m length of hull (L_H)

Note 1 to entry: The measurement methodology for the length of hull (L_H) is defined in ISO 8666.

[SOURCE: ISO 8666:2020, 3.15, modified – Note 1 to entry has been added.]

4 General requirements

4.1 Toilets shall be connected solely to a sewage holding tank system in accordance with ISO 8099-1:2018, or to a waste treatment system.

4.2 The sewage treatment system shall be installed to prevent the emission of vapor and liquids within the craft.

4.3 The sewage treatment system shall be capable of operation throughout an ambient temperature range of +1 °C to +50 °C.

For storage, the system shall withstand an ambient temperature of −40 °C to +60 °C.

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

4.5 Back siphoning shall be prevented up to a heel angle to either side of at least 30° for monohull sailing craft and 20° for other craft, as well as up to a trimmed condition at the bow or stern of at least 10°:

— from raw water intakes and discharge outlets;

— from the contents and escape of gas from the treatment system back through the toilet fixture;

— from the escape of sewage from the treatment system to the exterior of the craft.

4.6 Electrical components shall meet the requirements of ISO 13297:2020.