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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 33435-2025

Replacing GB/T 33435-2016

**Small craft - Carbon monoxide (CO) detection systems and
alarms**

小艇 一氧化碳 (CO) 探测系统及报警
(English Translation)

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document replaces GB/T 33435-2016 "Small craft carbon monoxide (CO) detection system" and is different from GB/T 33435-2016 except In addition to structural adjustments and editorial changes, the main technical changes are as follows.

- Changed the definition (see Chapter 3, Chapter 3 of the 2016 edition);
- Added the requirement for alarm when the battery is low (see 5.1.5);
- Increased the operating temperature range requirements of the detector (see 5.2.3);
- Changed the requirements for the installation location (see 5.3.2, 5.3.2 of the 2016 edition);
- Changed the installation requirements for carbon monoxide detectors without self-contained batteries (see 5.3.3, 5.3.3 of the 2016 edition);
- Added requirements for replacement of markings (see 6.3);
- Changed the reference line of 30 mg/kg in Figure 1 (see Figure 1, Figure 1 of the 2016 edition).

This document is equivalent to ISO 12133-2021 "Small craft carbon monoxide (CO) detection systems and alarms".

1 Scope

This document specifies the design, construction and installation requirements for carbon monoxide (CO) detection systems and alarms for small craft.

Appendix A to this document provides information on carbon monoxide relevant to boat and small craft navigation.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB/T 18814-2024 Small craft electrical systems - AC and DC installations (ISO 13297:2020, IDT) sures(IPCode)]

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Carbon monoxide

A gaseous compound consisting of one carbon molecule and one oxygen molecule.

Note: In chemical formulas, C represents carbon and O represents oxygen. In this document, the concentration of carbon monoxide is expressed as the mass fraction of CO in air.

3.2 Carboxyhemoglobin

Carbon monoxide (3.1) combines with hemoglobin to form a stable compound.

3.3 The proportion of carboxyhemoglobin

%COHb The degree to which the oxygen-carrying capacity of the blood is impaired due to the binding of carbon monoxide (3.1) to hemoglobin, expressed as a percentage.

3.4 Continuous spaces surrounded by permanent structures, including

- a) designated accommodation;
- b) a galley area with a drain;
- c) A compartment with toilet and sewage.

Note: Cabins with or without canvas covers used for store supplies and as open passenger cabins are not considered to be enclosed accommodation spaces.