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GB/T 13409-2026

Replacing GB/T 13409-1992

Design parameters and calculation methods for air-conditioning and ventilation of accommodation spaces on board ships

船舶起居处所空气调节与通风设计参数和计算方法

(English Translation)

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References

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document supersedes GB/T 13409-1992 "Design Parameters and Calculation Methods for Air Conditioning and Ventilation in Ship Accommodation", and is consistent with GB/T 13409-Compared to 1992, aside from structural adjustments and editorial changes, the main technical changes are as follows.

a) The scope of application has been changed (see Chapter 1, Chapter 1 of the 1992 edition);

b) The definition of living quarters has been changed (see 3.1, 3.1 in the 1992 edition);

c) Added terms and definitions for dry-bulb temperature and relative humidity (see 3.5 and 3.6);

d) The design conditions for dry-bulb temperature and relative humidity inside the cabin during summer were modified (see 4.2, 1992 edition 4.2);

e) The design conditions for relative humidity inside the cabin during winter have been changed (see 4.3, 4.3 in the 1992 edition);

f) The fresh air volume in the public cabins was changed [see 4.4a), 4.4a) of the 1992

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edition];

g) The minimum fresh air volume for the air conditioning system has been changed [see 4.4b), 4.4b) of the 1992 edition];

h) The air exchange rate in public cabins was changed, the air exchange rate in passenger cabins was removed, and the air exchange rate in the gymnasium was increased (see 4.5, 1992).

Version 4.5);

i) The classification of premises and the number of personnel in the calculation of staffing levels have been changed (see 4.6, 1992 edition 4.6);

j) The calculated equivalent temperature of the bulkhead was removed, the solar radiation temperature rise of the sunlit surface in Table 1 was added, and some equivalent air outside the bulkhead was modified.

Temperature (see 5.2.3.1, 5.2.2 in the 1992 edition);

k) Some values in Table 2 have been changed (see 5.2.3.4, 5.2.2 of the 1992 edition);

l) Added thermal resistance data for "High Emissivity Material Contact Surface" to Table 3 (see 5.2.4, 5.2.3 of the 1992 edition);

m) Table 4, "Human Activity Level and Heat Dissipation," has been added (see 5.3.3);

n) Formula (8) has been deleted (see 5.4 in the 1992 edition);

o) The data in Table 5 has been changed (see 5.4, Table 4 of the 1992 edition);

p) Equations (10) and (11) were modified (see 6.1, 1992 edition of 6.1);

q) Formula (13) has been modified (see 7.1.1, Chapter 7 of the 1992 edition);

r) Formula (15) has been modified (see 7.1.3, 7.2 of the 1992 edition);

s) Formula (16) was modified (see 7.1.4, 7.3 of the 1992 edition);

t) Equations (17) and (18) were modified (see 7.1.5, 7.4 of the 1992 edition);

u) Formulas (19) and (20) were modified (see 7.2, 7.4, 1992 edition);

v) Formula (21) was modified (see 8.2, 1992 edition 8.2);

w) The formula (22) was changed (see 8.3, 8.3 in the 1992 edition).

This document references ISO 7547:2022 "Air conditioning and ventilation of living quarters and other enclosed compartments of ships and marine technology".

The draft of "Design Conditions and Calculation Basis" is non-equivalent in terms of consistency.

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Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed and is under the jurisdiction of the National Technical Committee on Standardization of Marine Ships (TC12).

1 Scope

This document specifies the design parameters and calculation methods for air conditioning and ventilation in the living quarters of marine vessels.

This document applies to the design of air conditioning and ventilation in living quarters of marine vessels.

2 Normative references

This document has no normative references.

3 Terms and Definitions

The following terms and definitions apply to this document.

Accommodation

Used as living quarters, offices, public cabins (such as salons, restaurants, and recreation rooms), medical rooms, wards, gymnasiums, smoking rooms, and walkways.

Corridors, restrooms, and similar spaces.

air conditioning zone Living spaces that provide air temperature, humidity, and ventilation.

Note: This includes cabs and chart rooms that are not subject to specified temperature and humidity conditions.

number of air changes the ratio of the amount of air supplied to or extracted from a compartment per hour to the volume of that compartment.

Note: The unit is times.

The difference between the temperature of the air conditioning air supplied to the cabin and the cabin's design temperature.

drybulb temperature

The temperature displayed by a dry temperature-sensitive element that is protected from radiation.

Note: Temperature-sensitive elements, such as the temperature-sensing bulb in a glass mercury thermometer.

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