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Air-conditioning and ventilation of dry provision rooms on board ships — Design conditions and basis of calculations

Conditionnement d'air et ventilation des cambuses à bord des navires — Conditions de conception et bases de calcul

Reference number
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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 9099 was prepared by Technical Committee ISO/TC 8, *Shipbuilding and marine structures.*

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

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Air-conditioning and ventilation of dry provision rooms on board ships — Design conditions and basis of calculations

0 Introduction

This International Standard is fundamentally based on ISO 7547 which shall be available when applying this International Standard.

1 Scope and field of application

This International Standard specifies design conditions and suitable methods of calculation for air-conditioning and ventilation of dry provision rooms on board seagoing merchant ships, when specified by the shipowner.

It applies for all conditions except those encountered in extremely hot climates (i.e. with a higher enthalpy than that stated in 4.2).

NOTE — Users of this International Standard should note that, while observing the requirements of the Standard, they should at the same time ensure compliance with such statutory requirements, rules and regulations as may be applicable to the individual ship concerned.

2 Reference

ISO 7547, *Air-conditioning and ventilation of accommodation spaces on board ships — Design conditions and basis of calculations.*

3 Definitions

For the purposes of this International Standard, the definitions in ISO 7547 apply.

4 Design conditions

4.1 General

A dry provision store shall be kept dry, cool and well ventilated. The air supply to the room should be diffused in order to avoid excessive drying of stores exposed to a direct jet of air at a relatively high speed. Even distribution of air throughout the room should be arranged.

All ducts serving a dry provision room shall be adequately ratproofed.

NOTE — All temperatures stated are dry bulb temperatures.

4.2 Summer temperatures and humidities

Outside air: + 35 °C and 70 % relative humidity

Indoor air: + 27 °C and 50 % relative humidity

4.3 Winter temperature

Heating is not a requirement. However, if required, the air supplied to the room may be pre-heated, to a maximum temperature of 22 °C.

4.4 Outdoor air

The minimum quantity of outdoor air shall not be less than 50 % of the total air supplied to the room.

4.5 Occupancy

The number of persons to be allowed for in a dry provision room shall be one, unless otherwise stated by the purchaser.

5 Calculation of heat gains and losses

The total heat gains and losses shall be calculated in accordance with ISO 7547.

6 Airflow calculations

6.1 Volume of space

Volume of racks, bins, etc. shall not be deducted in calculating the gross volume of the dry provision room.

6.2 Supply airflow

The air supply to the dry provision room shall be calculated using whichever of the following criteria gives the highest value:

a) airflow to maintain the conditions of 4.2;

b) outdoor supply airflow not less than 0,008 m^3/s per person;

c) six air changes per hour.

6.3 Temperature of supply airflow

The temperature of the air supplied to the room shall not be more than 10 °C lower than the average temperature of the room, when cooling.

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