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Air-conditioning and ventilation of machinery control-rooms on board ships — Design conditions and basis of calculations

*Conditionnement d'air et ventilation des salles de contrôle des machines à bord des navires —
Conditions de conception et bases de calcul*

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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.

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 8862 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.

Air-conditioning and ventilation of machinery control-rooms on board ships — Design conditions and basis of calculations

0 Introduction

This International Standard is fundamentally based on ISO 7547, which is required to apply 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 the machinery control-room on board seagoing merchant ships for all conditions except those encountered in extremely cold or hot climates (i.e. with a lower or higher enthalpy than that stated in 4.1). Applicable parts of the Standard can be used for similar spaces such as the control-room for propulsion machinery.

The annex provides guidance and details of good practice in the design of ventilation and air-conditioning systems for machinery control-rooms in ships.

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 References

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

IEC Publication 92, *Electrical installations in ships* —

Part 101 : Definitions and general requirements.

Part 504 : Special features — Control and instrumentation.

3 Definitions

For the purposes of this International Standard, the definition given below, together with those in ISO 7547, apply :

machinery control-room : Space containing the system of the main alarm displays and controls for the propulsion machinery.

4 Design conditions

4.1 General

The system shall be designed for conditions as follows :

Outdoor air : + 35 °C and 70 % relative humidity
Indoor air : + 27 °C
Engine room air : + 45 °C

NOTE — All temperatures stated are dry bulb temperatures.

4.2 Occupancy

The number of persons to be allowed for in the machinery control-room shall be 3, unless otherwise stated by the purchaser.

5 Calculation of heat gains

5.1 Applicability

For the calculation of heat transmission and solar heat gain (as far as it is applicable), subclauses 5.2 and 5.3 of ISO 7547 shall apply.

Heat losses shall not be taken into account.

NOTE — Any required additional heating during winter is assumed to be carried out by separate means of heating, other than by air supply, unless otherwise specified by the purchaser.

In addition to values for the total heat transfer coefficients given in table 2 in ISO 7547, the values given in the table below shall be used where appropriate, unless otherwise specified by the purchaser.

Table — Total heat transfer coefficients

Surfaces	Total heat transfer coefficient, k W/(m ² ·K)
Control-room bulkhead and ceiling against engine room	0,8
Control room floor against engine room	1,2
Window, triple glazing	2,5