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Air-conditioning and ventilation of wheelhouse on board ships — Design conditions and basis of calculations

Conditionnement d'air et ventilation de la timonerie 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 8864 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 wheelhouse 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 wheelhouse 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).

It applies to a wheelhouse supplied with air-conditioning and ventilation either by the general accommodation system or by its own individual system.

The annex provides guidance and details of good practice in the design of ventilation and air-conditioning systems for the wheelhouse 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 :

wheelhouse : Enclosed area of the bridge (excluding radio cabin).

4 Design conditions

4.1 General

The system shall be designed for the indoor air conditions at the stated outdoor air conditions, etc. specified in subclauses 4.1, 4.2 and 4.3 of ISO 7547.

NOTE — The conditions are applicable only when the doors and windows are closed and the climatic situation in the room stable.

While the system is designed for these stated conditions, normal use of the vessel will seldom allow them to be fully met.

4.2 Occupancy

The number of persons to be allowed for in the wheelhouse shall be 5.

5 Calculation of heat gains and losses

5.1 Applicability

For the calculation of summer conditions, subclauses 5.2 and 5.3 of ISO 7547 shall apply except as modified below. For the calculation of winter conditions, subclause 5.2 of ISO 7547 shall apply.

NOTES

1 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.

2 The external sides and top of the wheelhouse are assumed to have light-coloured surfaces unless otherwise stated by the purchaser.

3 The maximum value for the total heat transfer coefficient, k, for the wheelhouse roof shall be taken as 0,5 W/(m^2·K). For other surfaces, reference is made to table 2 in ISO 7547.

5.2 Heat gain from persons

Values of sensible and latent heat emitted by a person shall be in accordance with subclause 5.4 in ISO 7547 (Activity : seated at rest).