
**Ships and marine technology —
Marine evacuation systems — Testing
under conditions of icing**

*Navires et technologie maritime — Systèmes d'évacuation maritimes
— Conditions de prise de la glace*

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by ISO/TC 8, *Ships and marine technology*, Subcommittee SC 1, *Maritime safety*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The International Life-saving Appliance (LSA) Code states in paragraph 6.2.2.1.8 that a marine evacuation system shall be designed to, as far as practicable, remain effective under conditions of icing. This document is intended to provide uniform test specifications in support of this critical functional requirement.

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Ships and marine technology — Marine evacuation systems — Testing under conditions of icing

1 Scope

This document provides specifications for a test of marine evacuation systems (MES) under conditions of icing in support of the requirement in paragraph 6.2.2.1.8 of the International Life-saving Appliance (LSA) Code.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IMO International Code on Intact Stability. 2008 (2008 IS Code) adopted by Resolution MSC.267(85), as amended

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

marine evacuation system

MES

appliance for the rapid transfer of persons from the embarkation deck of a ship to a floating survival craft by means of a *passage* (3.2)

3.2

passage

designated connection between the embarkation station and the survival craft(s) which can be an inflatable or rigid slide, a vertical *passage* (3.4) or any other arrangement that can provide for safe transfer to survival crafts

3.3

inclined passage

angled (to the horizontal) inflatable or rigid *passage* (3.2), which provides access for persons to a *floating platform* (3.5) or directly into survival crafts

3.4

vertical passage

passage (3.2) providing vertical controlled descent for persons to a *floating platform* (3.5) or directly into survival crafts

**3.5
floating platform**

platform that may be fitted at the bottom of the *passage* (3.2) to hold evacuees awaiting entry to survival craft

Note 1 to entry: In some system configurations, a survival craft may also serve as a platform.

**3.6
stowage container**

container that stows the *marine evacuation system* (3.1) or part of it

**3.7
integrated survival craft**

survival craft designed to be deployed simultaneously with the *passage* (3.2)

4 Test arrangements and functions to be tested

Marine evacuation systems (MES) encompass a wide range of different configurations and designs that can be exposed to icing. The test is intended to demonstrate that a MES can be deployed satisfactorily under conditions of icing on the basic structure of the system, which means the stowed system, including integrated survival crafts, shall be exposed to the icing test. The icing test does not need to include a complete MES system, but only parts of the system that would be exposed to icing conditions and are critical to a safe deployment and use of the system. The following functions shall be tested under the conditions of icing described in [Clause 5](#).

4.1 Deployment

It shall be demonstrated that the system can be deployed by one person.

4.2 Stowage container

It shall be demonstrated, when the system is activated, that the passage, platform and integrated survival crafts will deploy satisfactorily.

4.3 Bowsing/retaining system

It shall be demonstrated that winches for bowsing/retaining lines can be operated satisfactorily when the system is activated.

4.4 Access to the passage

If the entrance to the passage is positioned on open deck, it shall be demonstrated, when the system is activated, that there is unobstructed access to the passage.

5 Test procedure

The conditions of icing during the functional test described in [Clause 4](#), shall be equivalent to a minimum of 30 kg per square metre as required in 6.3.1.1 of the IMO Intact Stability Code 2008.

5.1 Ice accretion procedure

The system shall be arranged for a test in a location at temperatures below at least -10 °C and in a way that allows for a verification of a proper deployment function.

An ice layer of at least 3,5 cm thickness shall be built onto the parts and areas of the system with potential critical functions to the operation of the system by spraying cold fresh water from angles above 45 ° to the horizontal plane, with intermittent pauses to let icing form.

The following parts of the system are considered critical to the operation of the system in relation to icing:

- exterior doors and hatches,
- access doors (if exposed to weather),
- moving parts,
- winches,
- retaining lines, and
- connection lines.

5.2 Reference device

If the system configuration includes means of anti-icing/de-icing, which makes it impractical to build up the required layer of icing in relevant areas, then a reference device may be accepted to determine when activation of the system can be initiated.

The reference device shall be in the shape of an angle iron with the following dimensions:

Height: 100 mm ± 10 mm

Width: 100 mm ± 10 mm

Thickness: 10 mm ± 2 mm

Length: 300 mm ± 20 mm

The reference device shall be positioned approximately 40 cm in front of the test set-up with the open side facing the water spraying direction. If the system to be tested exceeds more than 3 m in length, a reference device shall be used for every 3 m of the length.

All critical parts of the stowage arrangement shall be exposed to the layer of icing in the simulated installed configuration, which shall include any designed anti-icing precautions as well as the reference device(s).

When at least a 3,5 cm thick layer of icing has formed on the horizontal and vertical part of the reference device facing the spraying direction, the required icing conditions are considered to be accomplished. The system shall then be actuated and the deployment of the system initiated without failure.