
**Ships and marine technology — Life
saving and fire protection — Sea
anchors for survival craft and rescue
boats**

*Navires et technologie maritime — Ancres flottantes pour
embarcations de sauvetage et canots de secours*

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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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

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

This second edition cancels and replaces the first edition (ISO 17339:2002), which has been technically revised.

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

A sea anchor is a vital component to a drifting waterborne craft in keeping the preferred angle to wind direction, enhancing stability and reducing drift speed. The International Life-Saving Appliance Code prescribes the carriage and use of sea anchors for survival craft and rescue boats, yet the revised recommendation on testing of lifesaving appliances does not provide requirements of performance and testing procedure for the sea anchors. This document addresses those areas in which the IMO recommendation is silent, in order to facilitate consistent implementation by maritime Administrations.

This document addresses the performance and testing of sea anchors for survival craft and rescue boats and it is intended for use as a companion to the IMO Revised recommendation on testing of life-saving appliances and also to encompass all other relevant life-saving appliances covered by this document and not necessarily regulated by IMO instruments.

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Ships and marine technology — Life saving and fire protection — Sea anchors for survival craft and rescue boats

1 Scope

This document specifies requirements for the design, performance and prototype testing of sea anchors fitted to survival craft (lifeboats and liferafts) and rescue boats in accordance with the IMO International Life-Saving Appliance 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.

ISO 9227:2012, *Corrosion tests in artificial atmospheres — Salt spray tests*

ISO 4892-2:2013, *Plastics — Methods of exposure to laboratory light sources — Part 2: Xenon-arc lamps*

ASTM D 471-06, *Standard Test Method for Rubber Property-Effect of Liquids*

EN 590, *Automotive fuels - Diesel - Requirements and test methods*

3 Terms and definitions

ISO 17339:2018

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 <https://www.iso.org/obp>

3.1

sea anchor

device to stabilize the motion and to reduce wind-driven drift of a waterborne craft such as a survival craft or rescue boat

4 Design and performance criteria

4.1 General

A sea anchor shall

- 1) be constructed with proper workmanship and materials;
- 2) not be damaged in stowage throughout the air temperature range -30 °C to $+65\text{ °C}$;
- 3) be capable of operating throughout the seawater temperature range -1 °C to $+30\text{ °C}$;
- 4) be rot-proof, corrosion-resistant, and not be unduly affected by seawater, oil or fungal attack;
- 5) be resistant to sunlight deterioration;
- 6) be capable of satisfactory operation in a seaway.

4.2 Drag force

A sea anchor shall develop the minimum drag forces specified in [Table 1](#), when tested in accordance with [5.2](#).

4.3 Towing line

The towing line used to secure the sea anchor to a survival craft or rescue boat shall be inherently rot-proof. It shall be at least 30 m long, not less than 8 mm in diameter and have a breaking load including attachments and knots of not less than:

- 7,5 kN for liferafts of capacity up to 10 persons;
- 10,0 kN for liferafts of capacity 11 persons to 25 persons;
- 10,0 kN for all other survival crafts and rescue boats, or a force corresponding to a safety factor of 3 based on a towing strain test at 3 knot, whichever is the greater.

4.4 Shroud line

A sea anchor shall have means to prevent twisting of the line and shall be of a type which is unlikely to turn inside out between its shroud lines.

4.5 Attachments

Attachments shall be corrosion-resistant. In case a sea anchor mouth having a ring, the ring shall retain its ring form when deployed regardless of the packed shape.

4.6 Stabilization

A sea anchor shall be stable when towed through the water at speeds up to 3 knot.

4.7 Deployment

A sea anchor shall unfold with mouth open immediately on deployment into water from its packed condition and shall remain unfolded.

4.8 Design

Any designs that meet all of the performance requirements of this document may be accepted.

Table 1 — Minimum required drag force by craft type and size

Craft	Minimum required drag force at indicated speed kilo-newton (kN)	
	2 knot	3 knot
Liferafts of capacity up to 10 persons	0,20	0,35
Liferafts of capacity 11 persons up to 25 persons	0,31	0,55
Liferafts of capacity 26 persons up to 75 persons Lifeboats and rescue boats up to 6 m in length	0,45	0,79
Liferafts of capacity 76 persons up to 150 persons Lifeboats and rescue boats over 6 m and up to 9 m in length	0,61	1,07
Lifeboats over 9 m in length	0,80	1,40

5 Prototype testing

5.1 Material test

5.1.1 Strength test for fabric

5.1.1.1 Sample conditioning

5.1.1.1.1 General <https://standards.iteh.ai/catalog/standards/sist/cabaa938-3dc2-430d-8c4c-d4f88516f3bd/iso-17339-2018>
 Prior to the test, fabrics shall be conditioned.

5.1.1.1.2 Standard conditioning

Samples shall be conditioned at a temperature of $20\text{ °C} \pm 2\text{ °C}$ and a relative humidity of $(65 \pm 4)\%$ for not less than 24 h.

5.1.1.1.3 Accelerated weathering

Samples shall be exposed in a xenon weathering machine in accordance with ISO 4892-2:2013, as further defined by the following specifications.

- Exposure: $500\text{ kJ}/(\text{m}^2 \times \text{nm})$ at 340 nm of UV radiation.
- Sample mounting: mount samples with the face side (the side normally exposed to sunlight in service) toward the light so that the centre of each sample is in the same plane as the perpendicular to the centreline of the light source.
- Irradiance: $0,55\text{ W}/\text{m}^2$ at 340 nm.
- Filters: daylight filters.
- Black panel temperature: $(63 \pm 2)\text{ °C}$.
- Dry bulb temperature: $(42 \pm 2)\text{ °C}$.
- Relative humidity: 50 % (during light-only cycle).
- Water temperature: $(20 \pm 5)\text{ °C}$.