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Third edition
2026-04

Immersion suits —

Part 2: Safety and performance requirements for abandonment suits

Combinaisons d'immersion —

Partie 2: Exigences de sécurité et de performance pour les combinaisons d'abandon

Reference number
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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 document 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 Technical Committee ISO/TC 188, *Small craft*, Subcommittee SC 1, *Personal safety equipment*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 162, *Protective clothing including hand and arm protection and lifejackets*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 15027-2:2012), which has been technically revised.

The main changes are as follows:

— the terms and definitions have been revised;

— in Table 3, a new thermal performance level E, equivalent to SOLAS uninsulated immersion suit has been added;

— in Table 3, minimum immersed clo values to suit performance levels have been added;

— in Clause 5, warnings in marking have been revised;

— in Clause 7, the consumer information has been revised;

— Annex A has been revised.

A list of all parts in the ISO 15027 series can be found on the ISO website.

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.

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Introduction

This document has been prepared to meet the needs of persons engaged in certain activities on or near water.

Abandonment suits manufactured and maintained according to this document will provide protection from cold shock and delay the onset of hypothermia.

The complete immersion system (suit and clothes worn under the suit) is intended to keep the user alive long enough for the rescue services to find and recover them. An individual's estimated thermal protection time depends on water temperature and wave state as well as their physiology. This document provides the minimum recommended insulation levels and the associated water temperatures in which the suits are to be used.

This document is intended to serve as a minimum performance requirement for manufacturers, purchasers and users of such safety equipment and seeks to ensure that the equipment provides effective performance in use. The abandonment suit is not intended to jeopardize safety by causing undue discomfort which can result in a degradation of performance.

The abandonment suit is not intended to have any features which can have a detrimental effect on the operation of other life-saving equipment. In particular, any part of the suit which might pose a snagging hazard is intended to be suitably covered, protected or restrained.

The primary aims in wearing an abandonment suit are:

a) to reduce the risk of cold shock and delay the onset of hypothermia;

b) to enable users to propel themselves in the water and extricate themselves from the water without it becoming an encumbrance;

c) to make users sufficiently conspicuous in the water so as to aid their recovery.

The performance of the suit may be altered by a number of factors, including wave action or the wearing of additional equipment. Users, owners and employers should ensure that equipment is correctly maintained according to the manufacturer's instructions.

A suit system may comprise one or more pieces provided that in all cases it meets the requirements of this document as a complete system.

An abandonment suit may often be worn with a lifejacket as it will provide flotation and can help to bring a user to a face-up position.

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Immersion suits —

Part 2:
Safety and performance requirements for abandonment suits

1 Scope

This document specifies performance and safety requirements for abandonment suits and suit systems in emergency situations for professional and leisure activities to protect the user against the effects of cold-water immersion, by reducing cold shock and delaying the onset of hypothermia.

If a suit system includes a personal flotation device (PFD), it provides protection against drowning.

This document is applicable to dry and wet abandonment suits.

This document does not apply to constant wear suits. Requirements for constant wear suits are given in ISO 15027-1:2026.

Test methods for immersion suits are given in ISO 15027-3:2026.

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 105-A02:1993, *Textiles — Tests for colour fastness — Part A02: Grey scale for assessing change in colour*

ISO 105-A02:1993/Cor 2:2005, *Textiles — Tests for colour fastness — Part A02: Grey scale for assessing change in colour — Technical Corrigendum 2*

ISO 105-E02:2013, *Textiles — Tests for colour fastness — Part E02: Colour fastness to sea water*

ISO 105-X12:2016, *Textiles — Tests for colour fastness — Part X12: Colour fastness to rubbing*

ISO 188:2023, *Rubber, vulcanized or thermoplastic — Accelerated ageing and heat resistance tests*

ISO 1421:2016, *Rubber- or plastics-coated fabrics — Determination of tensile strength and elongation at break*

ISO 2411:2017, *Rubber- or plastics-coated fabrics — Determination of coating adhesion*

ISO 3801:1977, *Textiles — Woven fabrics — Determination of mass per unit length and mass per unit area*

ISO 4674-1:2016, *Rubber- or plastics-coated fabrics — Determination of tear resistance — Part 1: Constant rate of tear methods*

ISO 7854:1995, *Rubber- or plastics-coated fabrics — Determination of resistance to damage by flexing*

ISO 9227:2022, *Corrosion tests in artificial atmospheres — Salt spray tests*

ISO 12402-2:2020, *Personal flotation devices — Part 2: Lifejackets, performance level 275 — Safety requirements*

ISO 12402-3:2020, *Personal flotation devices — Part 3: Lifejackets, performance level 150 — Safety requirements*

ISO 12402-4:2020, *Personal flotation devices — Part 4: Lifejackets, performance level 100 — Safety requirements*

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ISO 12402-5:2020, *Personal flotation devices — Part 5: Buoyancy aids (level 50) — Safety requirements*

ISO 12402-7:2020, *Personal flotation devices — Part 7: Materials and components — Safety requirements and test methods*

ISO 12402-8:2020, *Personal flotation devices — Part 8: Accessories — Safety requirements and test methods*

ISO 12402-9:2020, *Personal flotation devices — Part 9: Evaluation*

ISO 13688:2013, *Protective clothing — General requirements*

ISO 13934-1:2013, *Textiles — Tensile properties of fabrics — Part 1: Determination of maximum force and elongation at maximum force using the strip method*

ISO 13937-4:2000, *Textiles — Tear properties of fabrics — Part 4: Determination of tear force of tongue-shaped test specimens (Double tear test)*

ISO 15027-3:2026, *Immersion suits — Part 3: Test methods*

CIE 015:2018, *Colorimetry*

Resolution MSC. 481(102) adopted by the IMO[1)] Assembly to amend the International Convention for the Safety of Life at Sea (SOLAS), 1974, *Revised recommendation on the use and fitting of retro-reflective materials on life-saving appliances*

3 Terms and definitions

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

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
immersion suit
suit designed to protect the user's body from the cooling effects of immersion in water

Note 1 to entry: Cooling effects include *cold shock* (3.17) and *hypothermia* (3.11).

3.2
constant wear suit
immersion suit (3.1) designed to be routinely worn for activities on or near water in anticipation of immersion in water, but permitting physical activity to such an extent that actions can be undertaken without undue encumbrance and, thus, the head, hands and feet do not need to be covered

3.3
abandonment suit
immersion suit (3.1) including head, hand and feet protection designed to permit rapid donning in the event of an imminent immersion in water

3.4
dry suit
immersion suit (3.1) designed to protect the user against the effect of cold-water immersion by precluding the entry of water upon immersion

1) IMO is the abbreviation for International Maritime Organization, based in London, UK. IMO issues regulations which are then published as laws by the member states.

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