
Immersion suits —

Part 2:
**Abandonment suits, requirements
including safety**

*Combinaisons de protection thermique en cas d'immersion —
Partie 2: Combinaisons d'abandon, exigences y compris la sécurité*



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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this part of ISO 15027 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 15027-2 was prepared by the European Committee for Standardization (CEN) in collaboration with ISO Technical Committee TC 188, *Small craft*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Throughout the text of this standard, read "...this European Standard..." to mean "...this International Standard...".

ISO 15027 consists of the following parts, under the general title *Immersion suits*:

- Part 1: *Constant wear suits, requirements including safety*
- Part 2: *Abandonment suits, requirements including safety*
- Part 3: *Test methods*

Annex A of this part of ISO 15027 is for information only.

Annex ZZ provides a list of corresponding International and European Standards for which equivalents are not given in the text.

For the purposes of this part of ISO 15027, the CEN annex regarding the fulfilment of European Council Directives has been removed.

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Foreword

This document (EN ISO 15027-2:2002) has been prepared by Technical Committee CEN/TC 162 "Protective clothing including hand and arm protection and lifejackets", the secretariat of which is held by DIN, in collaboration with Technical Committee ISO/TC 188 "Small craft".

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2002, and conflicting national standards shall be withdrawn at the latest by September 2002.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

The annex A is informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard : Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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Introduction

This European Standard has been prepared to meet the needs of persons engaged in certain activities on or near water. Abandonment suits manufactured and maintained to this standard will provide protection from cold shock and delay the onset of hypothermia.

The complete immersion system (suit and clothes worn under the suit) should be able to keep the wearer alive long enough for the rescue services to find and recover them. An individual's estimated thermal protection time will depend on water temperature and wave state as well as their physiology. Detailed in this standard are the minimum recommended insulation levels and the associated water temperatures in which they are to be used.

This standard 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 should not jeopardise safety by causing undue discomfort which could result in a degradation of performance.

The abandonment suit shall have no features which will be likely to have any detrimental effect on the operation of other life saving equipment that may be used. In particular, any part of the suit which might pose a snagging hazard shall 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 the wearer to propel himself in the water and extricate himself from the water without it becoming an encumbrance;
- c) to make the wearer sufficiently conspicuous in the water so as to aid his recovery.

Many circumstances may alter the performance of the suit, such as wave action, or the wearing of additional equipment. Users, owners and employers should ensure that equipment is correctly maintained to manufacturer's instructions.

The use of a lifejacket/suit combination during testing does not confer approval status for that combination. An abandonment suit may be worn with a PFD as it will provide extra flotation and will help to bring a person to a face up position.

1 Scope

This standard specifies the requirements for the construction, performance and safety and the test methods for immersion suits.

This part of the standard is applicable to the requirements for abandonment suits.

For the requirements of constant wear suits see EN ISO 15027-1 and for the test methods see EN ISO 15027-3.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 340, *Protective clothing — General requirements*.

EN 1095, *Deck safety harness and safety line for use on recreational craft — Safety requirements and test methods*.

EN ISO 13934-1, *Textiles — Tensile properties of fabrics — Part 1: Determination of maximum force and elongation at maximum force using the strip method (ISO 13934-1 : 1999)*.

EN ISO 13934-2, *Textiles — Tensile properties of fabrics — Part 2: Determination of maximum force using the grab method (ISO 13934-2 : 1999)*.

ISO 105-B04, *Textiles — Tests for colour fastness — Part B04: Colour fastness to artificial weathering: Xenon arc fading lamp test*.

ISO 188, *Rubber, vulcanised or thermoplastic — Accelerated ageing and heat-resistance tests*.

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

ISO 2411 : 1991, *Rubber- or plastics-coated fabrics — Determination of coating adhesion*.

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

ISO 4674, *Fabrics coated with rubber or plastics — Determination of tear resistance*.

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

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

prEN ISO 12402-2:2000, *Personal flotation devices — Part 2: Class B (offshore lifejackets, extreme conditions — 275 N), safety requirements (ISO/DIS 12402-2:2000)*.

prEN ISO 12402-3:2000, *Personal flotation devices — Part 3: Class C (offshore lifejackets — 150 N), safety requirements (ISO/DIS 12402-3:2000)*.

prEN ISO 12402-4:2000, *Personal flotation devices — Part 4: Class D (inland/close to shore lifejackets — 100 N), safety requirements (ISO/DIS 12402-4:2000)*.

prEN ISO 12402-5:2000, *Personal flotation devices — Part 5: Class E (buoyancy aids — 50 N), safety requirements (ISO/DIS 12402-5:2000)*.

ISO 15027-2:2002(E)

prEN ISO 12402-8:2000, *Personal flotation devices — Part 8: Additional items, safety requirements and test methods (ISO/DIS 12402-8:2000)*.

EN ISO 15027-1, *Immersion suits — Part 1: Constant wear suits, requirements including safety (ISO 15027-1:2002)*.

EN ISO 15027-3:2002, *Immersion suits — Part 3: Test methods (ISO 15027-3:2002)*.

AATCC Method 30 : 1981, *Fungicides, evaluation on textiles: mildew and rot-resistance of textiles*¹⁾.

International Convention for the Safety of Life at Sea (IMO), 1974, amendment 1983²⁾

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions of EN ISO 15027-1 apply.

4 Requirements

4.1 General

4.1.1 The suit system declared to be an abandonment suit shall meet all requirements of this standard nor shall be damaged or fail in its determined function when tested in accordance with all tests in accordance with clause 3 of EN ISO 15027-3:2002, nor materials, fabrics or components when tested in accordance with 4.13.

4.1.2 It shall be established by inspection that the abandonment suit covers the whole body with the exception of the face and that the hood makes a good fit around the face, and that hand covering is provided by means of permanently attached gloves.

The abandonment suit may incorporate additional items, none of which shall impair its performance with respect to this standard, either by their presence or their use. Testing in accordance with 3.1 of EN ISO 15027-3:2002.

4.1.3 Where an universally sized suit is provided, it shall be sized to fit every person between 1,50 m and 1,95 m. Testing in accordance with 3.1 of EN ISO 15027-3:2002.

4.1.4 Insulation material shall be prevented from migrating when tested in accordance with 3.6 of EN ISO 15027-3:2002.

4.1.5 The suit system shall not restrict the donning of a reference PFD in accordance with prEN ISO 12402:2000, unless the suit system meets or exceeds the performance requirements of a lifejacket. Testing in accordance with 3.1 of EN ISO 15027-3:2002.

4.1.6 The suit system shall be capable of being readily cleaned when tested in accordance with 3.7.1 of EN ISO 15027-3:2002.

4.1.7 The suit system shall be designed in such a way as to minimise the risk of snagging. Testing in accordance with 3.1 of EN ISO 15027-3:2002.

4.1.8 Materials, fabrics and components shall conform with the test methods of 4.13.

4.1.9 The suit shall not contain or be accompanied by any component likely to injure or impede the user within the context of normal use. Testing in accordance with 3.1 of EN ISO 15027-3:2002.

1) Available from American Association of Textile Chemists and Colorists (AATCC) one Davis Drive, PO Box 12215, Research Triangle Park, NC 27709-2215 US

2) IMO is an institution with domicile in London issuing regulations which are then published as laws by the member states