

SUKELDUMISÜLIKONNAD. OSA 1: MÄRGÜLIKONNAD.  
NÕUDED JA KATSEMEETODID

Diving suits - Part 1: Wet suits - Requirements and test  
methods

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 14225-1:2017 sisaldab Euroopa standardi EN 14225-1:2017 ingliskeelset teksti.	This Estonian standard EVS-EN 14225-1:2017 consists of the English text of the European standard EN 14225-1:2017.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 06.12.2017.	Date of Availability of the European standard is 06.12.2017.
Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile [standardiosakond@evs.ee](mailto:standardiosakond@evs.ee).

ICS 97.220.40

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardimis- ja Akrediteerimiskeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardimis- ja Akrediteerimiskeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardimis- ja Akrediteerimiskeskusega: Koduleht [www.evs.ee](http://www.evs.ee); telefon 605 5050; e-post [info@evs.ee](mailto:info@evs.ee)

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation and Accreditation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation and Accreditation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation and Accreditation:

Homepage [www.evs.ee](http://www.evs.ee); phone +372 605 5050; e-mail [info@evs.ee](mailto:info@evs.ee)

English Version

## Diving suits - Part 1: Wet suits - Requirements and test methods

Vêtements de plongée - Vêtements isothermes - Partie  
1 : Exigences et méthodes d'essai

Tauchanzüge - Teil 1: Nasstauchanzüge - Teil 1:  
Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 7 June 2017.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

# Contents

Page

European foreword.....	4
Introduction .....	5
1 Scope .....	6
2 Normative references .....	6
3 Terms and definitions .....	6
4 Requirements .....	7
4.1 Mechanical performance .....	7
4.1.1 Resistance to cold and hot storage .....	7
4.1.2 Sea water resistance .....	7
4.1.3 Resistance to cleaning, disinfection and decontamination .....	7
4.1.4 Resistance to repeated pressurization in water .....	8
4.1.5 Tensile strength of material .....	8
4.1.6 Resistance to permanent deformation .....	8
4.1.7 Strength of suit seams .....	8
4.1.8 Strength of closures .....	8
4.2 Limitation of water flow into and out of the suit .....	8
4.2.1 Seams .....	8
4.2.2 Closures .....	8
4.3 Thermal performance of suit materials .....	8
4.4 Sizing .....	9
4.5 Practical performance requirements .....	9
5 Test methods .....	9
5.1 General .....	9
5.2 Test sequence .....	9
5.3 Visual Inspection .....	11
5.4 Mechanical test methods .....	12
5.4.1 Preliminary tests .....	12
5.4.2 Resistance to repeated pressurization in water .....	12
5.4.3 Immersed thermal resistance of thermal insulating material .....	13
5.4.4 Tensile strength of thermal insulating material .....	13
5.4.5 Tensile strength of seams .....	13
5.4.6 Tensile strength of closures .....	13
5.4.7 Resistance to permanent deformation of thermal insulating material .....	14
5.5 Practical performance test .....	14
5.5.1 Sampling .....	14
5.5.2 Test panel .....	14
5.5.3 Test divers .....	14
5.5.4 Diving equipment .....	15
5.5.5 Test procedure .....	15
6 Marking .....	16
7 Information to be supplied by the manufacturer .....	17
7.1 Information to be supplied with the suit .....	17
7.2 Customer information to be supplied at the point of sale .....	18

<b>7.3</b>	<b>Instructions for use.....</b>	<b>18</b>
<b>Annex A</b>	<b>(normative) Method for determination immersed thermal resistance of diving suit material.....</b>	<b>20</b>
<b>A.1</b>	<b>Principle.....</b>	<b>20</b>
<b>A.2</b>	<b>Theory.....</b>	<b>20</b>
<b>A.3</b>	<b>Use of the measurements.....</b>	<b>21</b>
<b>A.4</b>	<b>Test procedure .....</b>	<b>22</b>
<b>Annex B</b>	<b>(normative) Ratings of practical performance, scale and questionnaire.....</b>	<b>26</b>
<b>Annex C</b>	<b>(informative) Guidance on selection and use of a wet suit, to be provided by the manufacturer .....</b>	<b>27</b>
<b>C.1</b>	<b>Wet suit function.....</b>	<b>27</b>
<b>C.2</b>	<b>Wet suit type.....</b>	<b>27</b>
<b>C.3</b>	<b>Wet suit fit.....</b>	<b>27</b>
<b>C.4</b>	<b>Warning.....</b>	<b>28</b>
<b>C.5</b>	<b>Wet suit thermal insulating material .....</b>	<b>28</b>
<b>Annex D</b>	<b>(informative) Significant technical changes between this European Standard and EN 14225-1:2005 .....</b>	<b>29</b>
<b>Annex ZA</b>	<b>(informative) Relationship between this European Standard and the Essential requirements of Directive 89/686/EEC aimed to be covered.....</b>	<b>30</b>
<b>Annex ZB</b>	<b>(informative) Relationship between this European Standard and the Essential Requirements of Regulation (EU) 2016/425 aimed to be covered .....</b>	<b>32</b>
<b>Bibliography</b>	<b>.....</b>	<b>34</b>

## European foreword

This document (EN 14225-1:2017) 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.

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 June 2018, and conflicting national standards shall be withdrawn at the latest by June 2018.

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

This document supersedes EN 14225-1:2005.

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 Regulation (EU) 2016/425.

For relationship with Regulation (EU) 2016/425, see informative Annexes ZA and ZB, which are an integral part of this document.

Annex D provides details of significant technical changes between this European Standard and the previous edition.

EN 14225 consists of the following parts, under the general title *Diving suits*:

- *Part 1: Wet suits — Requirements and test methods;*
- *Part 2: Dry suits — Requirements and test methods;*
- *Part 3: Actively heated or cooled suit systems and components — Requirements and test methods.*

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## Introduction

This document for wet diving suits has been prepared to meet the needs of persons engaged in underwater activities where the user is breathing underwater, and where water temperature and exposure duration are such that the person's thermal requirement can be met using a wet suit.

A wet suit may be comprised of one or more pieces.

The conformity of a wet suit to this document does not imply that it is suitable for all circumstances nor does the document make detailed provision for all special uses for which wet suits may be utilized.

The thermal protection provided by a wet suit may be affected by a number of factors including the following:

- water temperature;
- diver's morphology (body surface area and shape, amount of body fat, sex);
- diver's physiology;
- diver's rate of work and working conditions;
- thermal properties of the material of the wet suit.

Most of these factors are individual and significantly change from diver to diver and from dive to dive.

## 1 Scope

This European Standard specifies the construction and performance requirements (including thermal) of wet suits for wear by divers for underwater activities where the user is breathing underwater. Marking, labelling, information meant to be provided at the point of sale, and instructions for use are also specified.

Laboratory and practical performance tests are specified.

Short sleeve jackets, short-leg trousers, under- and overgarments, and separate accessories such as gloves, hoods and boots are not within the scope of this document.

NOTE Suits and shorties for snorkelling including underwater activities are not covered by this standard.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 250, *Respiratory equipment — Open-circuit self-contained compressed air diving apparatus — Requirements, testing and marking*

EN 1809, *Diving equipment — Buoyancy compensators — Functional and safety requirements, test methods*

EN ISO 3758, *Textiles — Care labelling code using symbols (ISO 3758)*

## 3 Terms and definitions

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

### 3.1 closure

device to close openings provided for the donning and use of a diving suit

Note 1 to entry: Closures include slide fasteners (3.7).

### 3.2 consumer information at the point of sale

information, available at the point of sale, to allow the consumer to select the correct wet suit for the activity they intend to undertake

### 3.3 diving suit

suit designed for intended underwater activities, in which the user is breathing underwater

### 3.4 immersed thermal resistance

thermal resistance of a textile material or composite when the material is immersed in water and subjected to the effect of hydrostatic compression