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Equipos de flotación individuales. Parte 9: Métodos de ensayo. (ISO 12402-9:2020) (Ratificada por la Asociación Española de Normalización en febrero de 2021.)

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Equipos de flotación individuales. Parte 9: Métodos de ensayo. (ISO 12402-9:2020) (Ratificada por la Asociación Española de Normalización en febrero de 2021.)

Personal flotation devices - Part 9: Evaluation (ISO 12402-9:2020) (Endorsed by Asociación Española de Normalización in February of 2021.)

Équipements individuels de flottabilité - Partie 9: Évaluation (ISO 12402-9:2020) (Entérinée par l'Asociación Española de Normalización en février 2021.)

En cumplimiento del punto 11.2.5.4 de las Reglas Internas de CEN/CENELEC Parte 2, se ha otorgado el rango de documento normativo español UNE al documento normativo europeo EN ISO 12402-9:2020 (Fecha de disponibilidad 2020-09-02)

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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.

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Contents

Page

European foreword **3**

European foreword

This document (EN ISO 12402-9:2020) has been prepared by Technical Committee ISO/TC 188 "Small craft" in collaboration with 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of an identical text or by endorsement, at the latest by March 2021, and conflicting national standards shall be withdrawn at the latest by March 2021.

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 ISO 12402-9:2006.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 12402-9:2020 has been approved by CEN as EN ISO 12402-9:2020 without any modification.

Contents

Page

Foreword ..... **v**
Introduction ..... **vii**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Classification of personal flotation devices **4**
5 Test methods **4**
5.1 General 4
5.2 Sampling and conditioning 4
5.2.1 Sampling 4
5.2.2 Conditioning 4
5.3 Criteria 4
5.4 Magnetic properties testing 5
5.5 Mechanical properties tests 5
5.5.1 General 5
5.5.2 Rotating shock bin test 7
5.5.3 Temperature cycling test 8
5.5.4 Horizontal and vertical load tests 10
5.5.5 Lifting loop test 11
5.5.6 Buddy line test 12
5.5.7 Collar handles 17
5.5.8 Body strap hardware secureness test 18
5.5.9 Inflation tests 18
5.5.10 Measurement of buoyancy of the whole device 19
5.5.11 Uninflated buoyancy test 20
5.5.12 Buoyancy test for inherently buoyant material 21
5.5.13 Test of the resistance to burning 21
5.5.14 Overpressure test 23
5.5.15 Strength test of attachment points 24
5.5.16 Test of the resistance to inadvertent inflation 24
5.6 Human subject performance tests 26
5.6.1 General 26
5.6.2 Donning test 31
5.6.3 Water entry test 33
5.6.4 Self-righting and stability test 34
5.6.5 Measurement of freeboard 36
5.6.6 In-water stability test for lifejackets 37
5.6.7 Boarding test 37
5.6.8 Oral inflation 38
5.7 Tests using manikins 39
5.7.1 General 39
5.7.2 Test order 39
5.7.3 Fall from a height 40
5.7.4 Mouth freeboard 41
5.7.5 Self-righting and stability 43
Annex A (informative) **Classification of personal flotation devices** **44**
Annex B (normative) **Adult reference vest for test subject disqualification** **46**
Annex C (normative) **Child reference vest for test subject disqualification and test subject group validation (body mass from 25 kg to 40 kg)** **60**
Annex D (normative) **Reference vest for test subject disqualification and test subject group validation (body mass less than 25 kg)** **69**

Annex E (normative) **Manikin** **78**

Bibliography **83**

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).

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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.*

This second edition cancels and replaces the first edition (ISO 12402-9:2006), which has been technically revised. It also incorporates the Amendment ISO 12402-9:2006/Amd 1:2011.

The main changes compared to the previous edition are las follows:

a) amendment of title to make clear the need of this part for the fulfilment of the requirements in ISO 12402-2 to ISO 12402-6 to make visible the interaction and relation of the different parts of ISO 12402, and with this, its need of harmonization;

b) new Table 1 (A) Mechanical properties test for inherently buoyant PFDs (see 5.5.1);

c) new Table 2 (B) Mechanical properties test for inflatable PFDs (see 5.5.1);

d) horizontal and vertical load test amended (5.5.4);

e) requirements on collar handles added (see 5.5.7);

f) temperature cycling test amended (see 5.5.3);

g) over-pressure test amended (see 5.5.14);

h) air retention test deleted;

i) requirement for the colour deleted;

j) measurement of buoyancy of the whole device amended (see 5.5.9);

k) inflation tests amended (see 5.5.13);

l) strength of attachment test for inflatable chambers added (see 5.5.15);

m) human subject performance tests amended (see 5.6);

n) performance levels amended (see A.2);

o) Figures B.15 to B.17 added.

A list of all parts in the ISO 12402 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.

Introduction

ISO 12402 (all parts):2020 deals with personal floatation devices (PFDs) for persons engaged in activities, whether in relation to their work or their leisure, in or near water. PFDs manufactured, selected, and maintained to this International Standard give a reasonable assurance of safety from drowning to a person who is immersed in water. ISO 12402 (all parts):2020 does not include the following:

— requirements for lifejackets on seagoing ships, which are regulated by the International Maritime Organization (IMO)[1)] under the International Convention for the Safety of Life at Sea (SOLAS);

— throwable devices and flotation cushions.

ISO 12402 (all parts):2020 allows for the buoyancy of a PFD to be provided by a variety of materials or designs, some of which can require preparation before entering the water (e.g. inflation of chambers by gas from a cylinder or blown in orally). PFDs can be divided into the following two main classes:

— those which provide face up in-water support to the user regardless of physical conditions (lifejackets), and

— those which require the user to make swimming and other postural movements to position the user with the face out of the water (buoyancy aids).

Within these main two classes there are a number of levels of support, types of buoyancy, activation methods for inflatable devices, and auxiliary items (such as location aids), which all affect the user‘s probability of survival. Within the different types of buoyancy allowed, inflatable PFDs either provide full buoyancy without any user intervention other than arming (i.e. PFDs inflated by a fully automatic method) or require the user to initiate the inflation. Hybrid PFDs always provide some buoyancy but rely on the same methods as inflatable PFDs to achieve full buoyancy. With inherently buoyant PFDs, the user only needs to put the PFD on to achieve the performance of its class.

PFDs that do not require intervention (automatically operating PFDs) are suited to activities where persons are likely to enter the water unexpectedly; whereas PFDs requiring intervention (e.g. manually inflated PFDs) are only suitable for use if the user believes there will be sufficient time to produce full buoyancy, if automatic operation would result in entrapment, or if help is close at hand. In every circumstance, the user should ensure that the operation of the PFD is suited to the specific application. The conformity of a PFD to this part of the ISO 12402 series:2020 does not imply that it is suitable for all circumstances. The relative amount of required inspection and maintenance is another factor of paramount importance in the choice and application of specific PFDs.

ISO 12402 (all parts):2020 is intended to serve as a guide to manufacturers, purchasers, and users of such safety equipment in ensuring that the equipment provides an effective standard of performance in use. Equally essential is the need for the designer to encourage the wearing of the equipment by making it comfortable and attractive for continuous wear on or near water, rather than for it to be stored in a locker for emergency use. The primary function of a PFD is to support the user in reasonable safety in the water. Within the two classes, alternative attributes make some PFDs better suited to some circumstances than others or make them easier to use and care for than others. Important alternatives provided by ISO 12402 (all parts):2020 are the following:

— to provide higher levels of support (levels 100, 150, or 275) that generally float the user with greater water clearance, when required for increasingly severe conditions; or to provide lighter or less bulky PFDs (levels 50 or 100);

— to provide the kinds of flotation (inherently buoyant foam, hybrid, and inflatable) that accommodate the sometimes conflicting needs of reliability and durability, in-water performance, and continuous wear;

1) The International Maritime Organization (IMO) is an institution with domicile in London issuing regulations which are then published as laws by its Member States.