



SLOVENSKI STANDARD
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Buoyant aids for swimming instruction - Part 2: Safety requirements and test methods for buoyant aids to be held

Auftriebshilfen für das Schwimmenlernen - Teil 2: Sicherheitstechnische Anforderungen und Prüfverfahren für Auftriebshilfen, die gehalten werden

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Aides a la flottabilité pour l'apprentissage de la natation - Partie 2 : Exigences de sécurité et méthodes d'essai pour les aides a la flottabilité - Dispositifs tenus

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English Version

Buoyant aids for swimming instruction - Part 2: Safety requirements and test methods for buoyant aids to be held

Aides à la flottabilité pour l'apprentissage de la natation -
Partie 2: Exigences et méthodes d'essai relatives aux
dispositifs à tenir

Auftriebshilfen für das Schwimmenlernen - Teil 2:
Sicherheitstechnische Anforderungen und Prüfverfahren für
Auftriebshilfen, die gehalten werden

This European Standard was approved by CEN on 1 September 2007.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This document (EN 13138-2:2007) 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of an identical text or by endorsement, at the latest by April 2008, and conflicting national standards shall be withdrawn at the latest by April 2008.

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

This document supersedes EN 13138-2:2002.

This European Standard is one of a series consisting of three standards dealing with buoyant devices for swimming instructions for the various stages of the learning process.

EN 13138-1, *Buoyant aids for swimming instruction — Part 1: Buoyant aids to be worn — Safety requirements and test methods*

EN 13138-2, *Buoyant aids for swimming instruction — Part 2: Safety requirements and test methods for buoyant aids to be held*

EN 13138-3, *Buoyant aids for swimming instruction — Part 3: Safety requirements and test methods for swim seats to be worn*

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

The entire process of learning to swim is considered to include three stages:

- getting familiar with the water environment and movements through it;
- acquiring skills in standard swimming strokes;
- developing special swimming strokes and techniques.

Buoyant devices for swimming instructions (in brief: swimming device(s)) are intended to assist persons (in particular children) to learn to swim. The design and purpose of the devices are related to the above stages.

Swimming devices are intended to give the user positive buoyancy in the water whilst maintaining the correct body position for swimming. However, it should not be assumed that standard conformity of the devices will by itself eliminate the risk of drowning as this depends also on the behaviour of the user and any supervision.

Although this standard sets performance requirements to ensure that swimming devices perform appropriately, it is essential that the devices are used correctly and under constant and close supervision. It is important to ensure that they are securely fitted to the appropriate size of user and that when correctly fitted, they cannot become displaced. It is however essential that swim seats allow immediate escape in case of capsizing. Therefore the use of these devices is recommended to water out of standing depth of the user.

The highest degree of protection against drowning can only be achieved by using lifejackets. It is essential that there is a clear distinction between devices intended to preserve life and those which are intended only to assist buoyancy for the user when learning to swim. As swimming devices are not life preservers, they should only be used in swimming pools and other situations free from current, tides and waves.

The bulk storage of some sorts of swimming devices could, under certain conditions, result in a potential fire hazard. The perceived risk of such a hazard was evaluated against the actual risk to the user from materials treated with certain known toxic fire retardant chemicals. However, the fire hazard is less of a problem to the user than the risk associated with the swimming devices being put in the mouth, especially by children. For this reason, flammability requirements are not included in the standard.

For the above reasons and to differentiate these devices from aquatic toys, advisory safety measures, including marking, warning notices and user instructions are included in this standard.

The range both of the design and function of swimming devices varies considerably and for this reason, the standard for swimming devices has been prepared in three parts, namely devices that are intended to allow the user to become familiar with water (passive user), devices that are worn (active user) and those devices that are held by the user for special training purposes.

Part 1 of the standard

is for devices that are securely attached to the body (class B devices = for an active user). They are intended to introduce the user to the range of swimming strokes.

Part 2 of the standard

is for devices that are held either in the hands, by the body or between the legs (class C = devices for an active user) and are intended to assist with improving specific elements of the swimming stroke. For adult beginners or more advanced users they can also be used for further stages of the process to learn to swim.

Part 3 of the standard

deals with swim seats to assist children up to 36 months in their first attempts to learn to swim i.e. to get familiar with the "in-water-environment" and moving through it. The child is positioned inside the buoyant structure, which provides buoyancy and lateral support to the body, thereby keeping the child's head above water level (class A devices = for a passive user).

Swim seats allow young children to experience the water environment and being moved through it. Movements of lower limbs and arms are possible. The use of swim seats does however not replicate any form of a correct swimming stroke. Swim seats complying with this standard improve the in-water stability and minimise the entrapment risk in case of capsizing. Children in swim seats do however require very close parental supervision. Overload beyond specified body weight, breaking waves and violent external forces are remaining risks which can cause capsizing. Shallow water is likely to increase the risk of capsizing and to hinder or block the escape from the seat in case of emergency.

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1 Scope

This European Standard specifies safety requirements for construction, performance, sizing and marking for swimming devices intended to assist users with movement through the water in the early stages of water awareness, whilst learning to swim or whilst learning part of a swimming stroke. It also gives methods of test for verification of these requirements.

This part of the European Standard, Part 2, covers class C devices that are designed to assist with swimming strokes and improving specific elements of the stroke, which have either inherent buoyancy or can be inflated. It includes devices that are held in the hands or by the body. It does not apply to pull buoys, buoyancy aids, lifejackets or aquatic toys.

2 Normative references

The following referenced documents are indispensable for the application 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.

EN 71-1, *Safety of toys — Part 1: Mechanical and physical properties*

EN 71-3, *Safety of toys — Part 3: Migration of certain elements*

EN 20105-A02, *Textiles - Tests for colour fastness — Part A02: Grey scale for assessing change in colour (ISO 105-A02:1993)*

EN ISO 105-E03:1996, *Textiles — Tests for colour fastness — Part E03: Colour fastness to chlorinated water (swimming-pool water) (ISO 105-E03:1994)*

EN ISO 105-E04, *Textiles — Tests for colour fastness — Part E04: Colour fastness to perspiration (ISO 105-E04:1994)*

EN ISO 105-X12, *Textiles — Tests for colour fastness — Part X12: Colour fastness to rubbing (ISO 105-X12:2001)*

EN ISO 3696:1995, *Water for analytical laboratory use — Specification and test methods (ISO 3696:1987)*

EN ISO 12402-7:2006, *Personal flotation devices — Part 7: Materials and components — Safety requirements and test methods (ISO 12402-7:2006)*

EN ISO 12402-9:2006, *Personal flotation devices — Part 9: Test methods (ISO 12402-9:2006)*

3 Terms and definitions

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

3.1 buoyancy
resultant upthrust of a swimming device when totally submerged in fresh water with its uppermost part just below the water surface

3.2**inherent buoyancy**

upthrust provided by material which is less dense than water or by sealed chambers filled with air or gas

3.3**buoyant swimming device**

garment or device which when worn or held correctly will provide the buoyancy required to become familiar with movement through the water, assist with learning to swim or to improve swimming strokes

3.4**minimum buoyancy**

least buoyancy required by the standard

3.5**original buoyancy**

buoyancy provided by the complete device when first tested

3.6**class A device**

device in which the child is in contact with the water positioned inside the buoyant structure. This device is intended to allow the user to become familiar with the water environment and movement through it. The device will keep the passive user in a stable floating position so that the base of the chin is at or above the surface of the water

3.7**class B device**

buoyant swimming device intended to be securely attached to the body and to introduce the active user to the range of swimming strokes

3.8**class C device**

device intended to be held in the hands, by the body or between the legs and to assist with swimming strokes and/or improving specific elements associated with swimming techniques

3.9**device to be worn**

device having either inherent buoyancy or may be inflated to provide buoyancy and which is securely attached to the body in such a way that it cannot be accidentally removed and so as to provide the user with positive buoyancy

3.10**device to be held**

device held either in the hands or between the legs or by the body and provides buoyancy whilst it is being held by the user

3.11**conditioning**

process to which the complete device shall be submitted and comprising a number of cycles, to simulate the conditions to which the device is likely to be subjected in normal use and storage. The conditioning process will include immersion in chlorinated swimming pool water and storage in cold and hot conditions

3.12**component**

sub group of the entire device which contributes to either buoyancy, function or safety

3.13**swim seat**

buoyant device intended to introduce the user to the aquatic environment and to build water confidence as a pre-requisite to learning to swim. Swim seats provide safety for the user but do not guarantee protection against drowning.

NOTE They are learning aids and should not be mistaken with aquatic toys as defined in EN 71-1.

3.14

swim seat system

integrated components (parts) of a swim seat which contribute to stable floating conditions and to safety during normal use or after an emergency capsizing

3.15

escape

complete separation between the test dummy and the swim seat in case of a deliberate capsizing of the swim seat or swim seat system

3.16

assessment panel

group of three people from an accredited and notified test house, all of whom are experienced in assessing buoyant swimming devices

3.17

kick board

buoyant device designed to be held in the hands or by the arms in order to support the body in a horizontal and stable position in the water to assist the user to improve swimming techniques

3.18

pull buoy

buoyant device to be held between the legs to maintain the legs in a horizontal position in the water to assist the user to improve swimming techniques

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4 Classification

4.1 General

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Buoyant swimming devices shall be classified by design according to Table 1.

Table 1 — Classification of buoyant devices

Class	Description
A	Device in which the child is in contact with the water positioned inside the buoyant structure. This device is intended to allow the user to become familiar with the water environment and movement through it. The device will keep the passive user in a stable floating position so that the base of the chin is at or above the surface of the water.
B	Buoyant device intended to be securely attached to the body and to introduce the active user to the range of swimming strokes.
C	Device intended to be held in the hands, by the body or between the legs and to assist with swimming strokes and/or improving specific elements associated with swimming techniques.

5 Safety requirements

5.1 General

Construction of a buoyant swimming device shall be such that it corresponds in terms of design, dimensions, safety, strength and durability for its intended use. The requirements set out were chosen to ensure compliance with these considerations. Where buoyant swimming devices are provided in several components, the requirements apply to all components. Where buoyancy is not inherent, devices shall have a minimum of two separate chambers safeguarding function and safety if one chamber fails.

Hand held devices shall be assessed by the assessment panel whether they comply with the ergonomic requirements of the intended user group (see 7.4 and Annex E).

For safety reasons these products shall be in high definition colours. Transparent or dull colour materials are not acceptable. It is recommended that the colour range yellow to red orange is most appropriate although any high definition colour or colour combination is acceptable.

5.2 Buoyancy

5.2.1 Buoyancy characteristics of the complete device

When tested in accordance with the procedures in 5.5.9 of EN ISO 12402-9:2006, the device shall have minimum buoyancy of 15 N.

5.2.2 Residual buoyancy

Any device for swimming instruction providing buoyancy by inflation or by filling materials such as granules, air sacs or similar shall provide, when tested in accordance with 5.5.9 of EN ISO 12402-9: 2006, a residual buoyancy of $7,5 \text{ N} \pm 10 \%$ after complete deflation of the chamber most likely to cause failure or through the removal of 50 % of the filling material.

Where buoyancy is not provided by inherently buoyant material the device shall have at least two separate air chambers.

Where there is more than one component to the device, after complete deflation of the chamber most likely to cause failure, the residual buoyancy shall be a minimum of $(50 \pm 10) \%$ of the original buoyancy of the component when fully inflated.