BS EN 13138-1:2014

BSI Standards Publication

Buoyant aids for swimming instruction

Part 1: Safety requirements and test methods for buoyant aids to be worn

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National foreword

This British Standard is the UK implementation of EN 13138-1:2014. It supersedes BS EN 13138-1:2008 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee SW/136/8, Swimming pools and aquatic equipment.

A list of organizations represented on this committee can be obtained on request to its secretary.

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ISBN 978 0 580 76924 5

ICS 97.220.40

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 October 2014.

Amendments issued since publication

Date	Text affected

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13138-1

October 2014

ICS 13.340.70; 97.220.40

Supersedes EN 13138-1:2008

English Version

Buoyant aids for swimming instruction - Part 1: Safety requirements and test methods for buoyant aids to be worn

Aides à la flottabilité pour l'apprentissage de la natation - Partie 1: Exigences de sécurité et méthodes d'essai pour les aides à la flottabilité portées au corps

Auftriebshilfen für das Schwimmenlernen - Teil 1: Sicherheitstechnische Anforderungen und Prüfverfahren für am Körper getragene Auftriebshilfen

This European Standard was approved by CEN on 16 August 2014.

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Ref. No. EN 13138-1:2014 E

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Foreword

This document (EN 13138-1:2014) 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of an identical text or by endorsement, at the latest by April 2015 and conflicting national standards shall be withdrawn at the latest by April 2015.

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 13138-1:2008.

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).

For relationship with EU Directive(s), see informative Annex ZA which is an integral part of this document.

Annex H provides details of significant technical changes between this European Standard and the previous edition EN 13138-1:2008.

This European Standard is one of a series consisting of four 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: Safety requirements and test methods for buoyant aids to be worn*

- 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*

- prEN 13138-4, *Buoyant aids for swimming instruction — Part 4: Test manikin for in water performance testing of buoyant aids 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, 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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Introduction

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

— getting familiar with the water environment and movements in it;

— acquiring skills in standard swimming strokes.

Buoyant aids for swimming instruction (in brief: swimming device(s)) are intended to assist users (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 while 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 European 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. Swim seats however should allow immediate escape in case of capsizing. Therefore the use of these devices is recommended to be restricted 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 types 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 do not apply to this European 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 buoyant aids for swimming instruction 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 to improve swimming strokes.

Part 1 of this European Standard is only 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 this European Standard is for devices that are held either in the hands or by the body (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 this European Standard deals only 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.

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Swim seats complying with this standard provide a stable, floating position for a child sitting in the swim seat and avoids entrapment 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 that can cause capsizing. Use of these devices in water that is of the child's standing depth will increase the risk of capsizing and will 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, marking and information supplied by the manufacturer for swimming aids intended to assist beginners with movement through the water while learning to swim or while learning part of a swimming stroke. It also gives methods of test for verification of these requirements.

This part 1 of EN 13138 applies only to devices that are designed to be worn, to be securely attached to the body and which have either inherent buoyancy or can be inflated. It only applies to Class B devices intended to introduce the user to the range of swimming strokes. It does not apply to Class A or Class C devices, to pull buoys, swim rings, lifebuoys, buoyancy aids, lifejackets or aquatic toys.

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

EN 15649-1:2009+A2:2013, *Floating leisure articles for use on and in the water — Part 1: Classification, materials, general requirements and test methods*

EN 15649-2:2009+A2:2013, *Floating leisure articles for use on and in the water — Part 2: Consumer information*

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

EN ISO 105-E03:2010, *Textiles — Tests for colour fastness — Part E03: Colour fastness to chlorinated water (swimming-pool water) (ISO 105-E03:2010)*

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

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

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

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 that are not inflatable and are filled with air or gas

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3.3
buoyant aid for swimming instruction (in brief '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
buoyant device in which the child is in contact with the water positioned inside the buoyant structure so that it will keep the passive user in a stable floating position where the base of the chin is at or above the surface of the water. This device is intended to allow the user to become familiar with the water environment

3.7
class B device
buoyant swimming device intended to be worn, 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 either in the hands or by the body and to assist with swimming strokes and/or improving specific elements of the strokes

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 buoyancy

3.10
device to be held
device held either in the hands 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 that includes immersion in chlorinated swimming pool water and storage in cold and hot conditions and comprising a number of cycles, to simulate the conditions to which the device is likely to be subjected in normal use and storage

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 1 to entry: Swim seats are learning aids and should not be mistaken with aquatic toys as defined in EN 71–1.

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3.14
swim seat system
all 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 who are appointed by a 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 the water to assist the user to improve swimming strokes

4 Classification

Buoyant swimming devices shall be classified according to Table 1.

Table 1 — Classification of buoyant devices

Class	Definition
A	Buoyant 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. 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 swimming device intended to be worn, 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 either in the hands or by the body and to assist with swimming strokes and/or improving specific elements of the strokes

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 each of the components as specified in the relevant paragraphs below.

Buoyancy may be provided by inherent buoyancy materials, by inflatable chambers or by both. Where buoyancy is not inherent, devices shall have a minimum of two independent chambers safeguarding function and to allow the user to maintain the airway above water level at all times if one chamber fails. A device shall be only Class A or Class B or Class C.

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