BS EN 13138-2:2014

BSI Standards Publication

# Buoyant aids for swimming instruction

## Part 2: Safety requirements and test methods for buoyant aids to be held

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**National foreword**

This British Standard is the UK implementation of EN 13138-2:2014. It supersedes BS EN 13138-2:2007 which is withdrawn.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.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.



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**Compliance with a British Standard cannot confer immunity from legal obligations.**

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EUROPEAN STANDARD

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# EN 13138-2

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Supersedes EN 13138-2:2007

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 de sécurité et méthodes d'essai pour les aides à la flottabilité 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 16 August 2014.

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**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

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# Foreword

This document (EN 13138-2:2014) 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of an identical text or by endorsement, at the latest by June 2015 and conflicting national standards shall be withdrawn at the latest by June 2015.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 13138-2:2007.

Annex E provides details of significant technical changes between this European Standard and the previous edition EN 13138-2:2007.

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.

# 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 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 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 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 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.

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

## 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, 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 2 of EN 13138 applies only to class C devices that are designed to be held in the hands or by the body. Typical devices include kick boards and pull/kick boards. These devices are used to assist in learning to swim or to assist with swimming strokes and improving specific elements of the stroke, which have either inherent buoyancy or can be inflated.

It does not apply 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

**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

**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 aids for swimming instruction

**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

## 4.1 General

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

**Table 1 — Classification of buoyant devices**

| Class | Description |
|---|---|
| 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 all components. Where buoyancy is not inherent, devices shall have a minimum of two separate chambers safeguarding function and safety if one chamber fails. A device shall be only Class A or Class B or Class C.

Hand-held devices shall be assessed by the assessment panel to determine whether they comply with the ergonomic requirements of the intended user group.

There are no colour requirements for these devices.

## 5.2 Buoyancy characteristics of the complete device

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

## 5.3 Design

### 5.3.1 Innocuousness

Class C devices shall be of a design such that they cannot cause harm to the user. Edges and corners of hard and rigid materials shall be chamfered or rounded.

Round edges or corners shall have a minimum radius of 1 mm and where a chamfer is part of the design, it shall be of (45° ± 5) ° and at least 1 mm in width. There shall be no barbs or other sharp points or features. Testing shall be by measurement and tactile assessment.

Attached small parts shall withstand a pull of (90 ± 2) N in the direction most likely to cause failure without becoming detached from the device. Parts which can become detached, including those that may accidentally come away or be torn off the device, shall not fit wholly into the small parts cylinder, testing of which shall be in accordance with EN 71-1.

### 5.3.2 Thread

To sew load bearing components, only threads manufactured from synthetic materials whose properties correspond to polyester or polyamide fibres shall be used. Manufacturers shall provide certification of compliance.

### 5.3.3 Valves and stoppers

Inflatable class C devices shall be fitted with non-return valves on every inflatable chamber. Stoppers shall be connected to the body of the valve. The protrusion of the valve/stopper or of any other protruding part shall not catch a test chain when tested in accordance with EN 15649-1:2009+A2:2013, 5.5.

All non-return valves shall ensure that, with an opened stopper, inflatable devices, when orally inflated and when tested in accordance with Annex A shall after a period of 2 min retain at least 75 % of their original buoyancy.

Testing shall be by inspection and measurement in accordance with the procedures in EN ISO 12402-9:2006 but with oral inflation of the device to its fully inflated volume.

## 5.4 Materials – mechanical properties

### 5.4.1 Seam strength and durability of inflatable devices

The device shall remain airtight after being submitted to a cyclic pressure test when tested in accordance with the procedures in Annex B.

### 5.4.2 Resistance to puncturing

Where swimming aids have air filled buoyancy chambers, the chambers shall remain airtight when tested in accordance with the procedures in Annex C.

### 5.4.3 Resistance of foam and other inherent buoyant material to water absorption

When tested in accordance with the procedures given in EN ISO 12402-9:2006, 5.5.5, the material sample shall lose no more than 10 % of its original buoyancy. The materials shall be tested using a new and conditioned sample of the inherent buoyant material in accordance with the requirements in 6.1.

## 5.5 Materials and markings

### 5.5.1 General

These tests 5.5.3 to 5.5.5 shall not apply where the markings are debossed onto or moulded into the device. Guidance on the design features for debossed and embossed markings is shown in Figure 1.

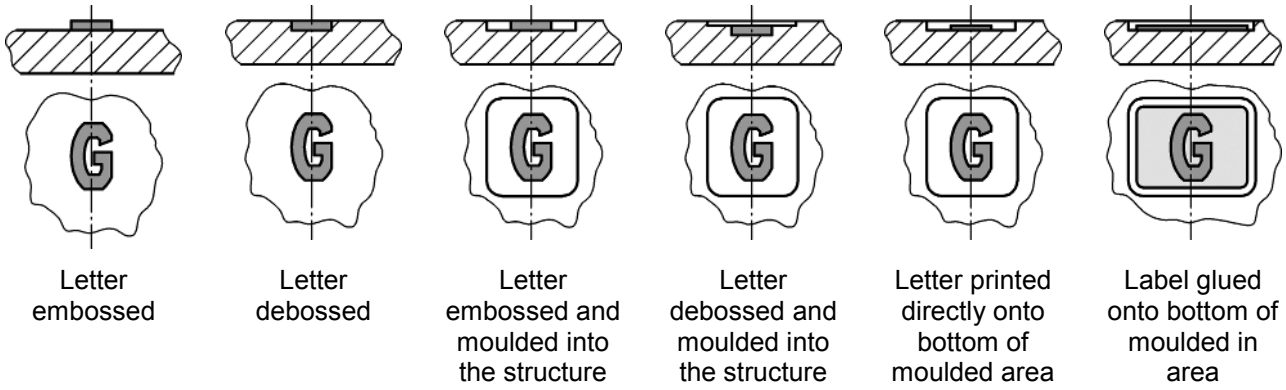


**Figure 1 — Illustrations of embossed and debossed markings**

### 5.5.2 Resistance to chlorinated salt water

After conditioning according to the procedures in 6.1, the entire deflated device shall be tested for change in colour and damage. The change in colour shall be tested according to EN 20105-A02 and shall be 3 or better on the grey scale. Inflatable devices, after being dried, shall be orally inflated to their maximum volume and inspected for air leakage.

All devices shall be inspected for damage or deterioration and to ensure that markings remain legible.

### 5.5.3 Resistance of the markings to saliva

When tested in accordance with the procedures in Annex D the change in colour of the markings shall be step 3 on the grey scale or better when assessed according to EN 20105-A02 and shall remain legible.

### 5.5.4 Resistance of the markings to perspiration

When tested in accordance with EN ISO 105-E04 the change of colour of the markings shall be step 3 on the grey scale or better when assessed according to EN 20105-A02 and shall remain legible.

### 5.5.5 Adhesion of markings

When tested in accordance with EN ISO 105-X12 (wet and dry) for 100 cycles markings shall not be damaged and shall remain legible in all details when assessed by the assessment panel.

# 6 Test methods

## 6.1 Conditioning

It is important that the test procedures are in normal climate condition. If not otherwise stated test shall be carried out on the entire assembly and in the sequence in which they appear below. Unless otherwise stated always the same product shall be used in order to achieve an accumulation of stresses.

Prior to any kind of testing, the products or material samples shall be kept for a period of 24 h at (−10 ± 1) °C for another 24 h at (60 ± 2) °C and for further 24 h at (20 ± 2) °C (room temperature).

The products or material samples shall then be submerged individually in agitated chlorinated salt water for 12 h, in darkness and at room temperature (20 ± 2) °C. Inflatable devices shall be in a deflated condition. It is important to ensure that the test samples are thoroughly wetted. After removal from chlorinated salt water, the samples shall be rinsed in distilled water and dried by hanging in air at room temperature.

The chlorinated salt water is prepared by dissolving 30 g of sodium chloride (NaCl) in one litre of an aqueous solution of sodium hypochlorite (NaOCl) containing 50 mg of active chlorine at pH (7,5 ± 0,05). The sodium hypochlorite solution is prepared in accordance with the description in EN ISO 105-E03:2010, 4.4. The solution shall always be prepared immediately prior to use, using grade 3 water as defined in EN ISO 3696:1995, Clause 3.

A suitable apparatus for the conditioning procedure should consist of a glass or stainless steel container that is big enough to hold the necessary volume of chlorinated salt water for a liquor ration of 100 : 1 and a motor driven stirrer rotating at a frequency of 40 cycles $min^{-1}$. In order to maintain the whole arrangement at room temperature, the procedure should be undertaken in a climate controlled room.

### 6.2 Test methods

The test methods shall be according to the procedures described in Annex A to Annex D.

## 7 Marking, labelling and packaging

### 7.1 General

The markings shall be printed or debossed on the product and shall be clearly visible when preparing for use. The word WARNING shall be in BOLD upper case, letter size not less than 5 mm in height. Other text may be in upper or lower case and shall be not less than 3 mm in height. Colour may vary but shall always be in contrast or relief to the background and be legible. Verification by measurement and inspection by the assessment panel.

It is recommended that other text is in lower case letters; however, upper case letters may be used.

All warnings and markings (see 7.2) and information supplied by the manufacturer (see 7.3) shall be given in the language of the country of sale on the device, on the packaging and in the information supplied by the manufacturer.

### 7.2 Warnings and markings on the product

The following minimum information shall be given: WARNING

Next to or immediately below the word "WARNING" the following text shall be printed or debossed and the following order is recommended:

Will not protect against drowning

Always fully inflate all air chambers (if applicable to the product)

Use only under constant supervision

All components shall be used (if applicable to the design of product)

Relevant graphical symbols in accordance with EN 15649-2:2009+A2:2013 may be used to replace warning information above in plain text.

The following additional information is also required:

— mass equivalent size range; age range if appropriate;

— the number of this European Standard EN 13138-2:2014;

— the type designation of the product, commercial name or model or code;

— name or trademark of the manufacturer, importer or supplier.

### 7.3 Information supplied by the manufacturer

The following minimum information, where applicable, shall be given at least on an accompanying leaflet:

— details of how to inflate, deflate and the means of securing the stopper on inflatable swimming aids;

— details of how to use and hold the swimming aid with reference to any specific features appropriate to it;

— details of storage and maintenance procedures;

— information on determining the suitability of the device for the intended user.

— information on how to dispose of the packaging materials in an environmentally sound manner.

— information on how to safely dispose of the product when it is put out of service.

### 7.4 Consumer information at the point of sale

The specified product information label (see Figure 2) shall be uniformly applied as shown.

The application of graphical symbols shall be in accordance with EN 15649-2:2009+A2:2013.

It might be printed on the product if the product is packed inside a transparent bag which provides visibility of the label. The size and class of the device in the package shall be indicated by ticking in the relevant box(es) of the information label by a (“✓”).

Information about class or size shall always be given in the context of the other classes of swimming devices shown in the label according to Figure 2.

The word "WARNING", which must be in UPPER CASE, and lettering for information provided shall be legible and clearly marked on the packaging so that it can be easily read at the point of sale.

The full postal address of the manufacturer shall be provided.

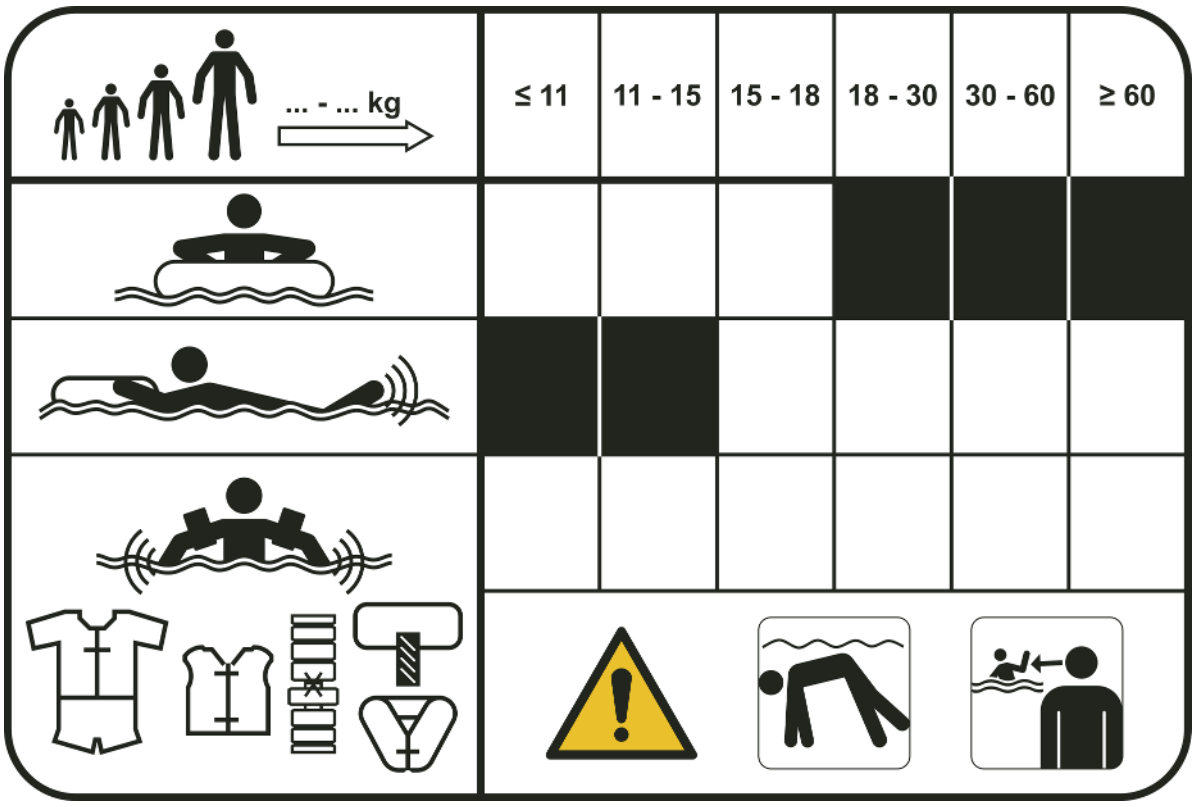


**Figure 2 – Recommended layout of the product information label**

**Guidance – approximate body weight – age group:**

– 11 kg ≈ 12 month;

– 11 kg to 15 kg ≈ 12 month to 24 month;

– 15 kg to 18 kg ≈ 24 month to 36 month;

– 18 kg to 30 kg ≈ 3 years to 6 years;

– 30 kg to 60 kg ≈ 6 years to 12 years;

– 60 kg ≈12 years

# Annex A
(normative)

# Procedures for testing efficiency of non-return valves of inflatable devices

The test procedure shall be carried out in accordance with EN ISO 12402-9:2006, 5.5.9 with the exception that inflation of inflatable devices shall be done orally to achieve the maximum volume A device, with the opened stopper un-inserted if inflatable, is submerged in the test apparatus in a water bath for a period of two minutes. Its buoyancy retention is measured by noting the change in the apparent mass of the test apparatus with and without the inflated device over the period of the test.

The buoyancy of the device at the beginning and the end of the test can then be calculated in Newtons.

— Buoyancy at beginning of test B1

— Buoyancy at conclusion of test B2

— Loss of buoyancy B1 - B2 = B3

— Percentage loss of buoyancy (B3/B1) × 100

# Annex B
(normative)

# Test procedures for seam strength and durability of inflatable devices

Two adjoining air chambers of the device shall in alternating order with the adjoining chamber be deflated.

| | |
|---|---|
| Buoyancy at beginning of test | B1 |
| Buoyancy at conclusion of test | B2 |
| Loss of buoyancy | B1 - B2 = B3 |
| Percentage loss of buoyancy | (B3/B1) × 100 |

a) First cycle

Inflate chamber A up to a test pressure of 0,05 bar; Maintain the test pressure for 30 s; Deflate chamber A completely; Inflate adjoining chamber B to test pressure of 0,05 bar; Maintain the test pressure for 30 s; Deflate chamber B .

b) Second cycle

Repeat the first cycle starting with chamber A.

c) n cycle

Apply a total of 500 cycles.

# Annex C
(normative)

# Test procedures for determining the puncture resistance of inflatable devices

Apply a force of 5 N to any part of the external surface of the inflated device through a steel needle tip with a radius of 0,5 mm and a needle diameter of (1,0 ± 0,05) mm.

Apply the force gradually over a period of 5 s.

Maintain the force for a further 5 s. Upon completion of the procedure, submerge the device in a bath of water at ambient temperature and examine for leakage of air.

# Annex D
(normative)

# Procedures for testing resistance of marking to saliva

The procedure and assessment shall be carried out in accordance with that prescribed in EN ISO 105-E04 for fastness to perspiration but using a test solution comprising the following constituents:

— sodium hydrogen carbonate, $NaHCO_3$, for analysis, 4,2 g

— sodium chloride, NaCl, for analysis 0,5 g

— potqassium carbonate, $K_2CO_3$, for analysis 0, 2 g

— distilled water or water of equivalent purity 1 000 $cm^3$

# Annex E
(informative)

## Significant changes between this document and the previous edition EN 13138-2:2007

| Paragraph | Changes |
|---|---|
| Foreword | - Editorial changes |
| 1 Introduction | - Harmonization across all three parts of EN 13138<br>- Minor editorial amendments to achieve this |
| 2 Normative references | - Remove EN ISO 12402-7;<br>- Add EN 15649–1:2009+A2:2013 and EN 15649–2:2009+A2:2013 |
| 3 Terms and definitions | - Amendments to definitions to ensure harmonization across the three parts of the standard;<br>- Add new 3.4 ‘Minimum buoyancy’<br>- Remove 3.17 ‘Pull buoy’ as no longer incorporated into standard |
| 4 Classification | - Harmonization across all three parts of the standard;<br>- Amendments to Class A and Class C definition |
| 5 Safety requirements | - Editorial amendments<br>5.1 Removal of colour requirement;<br>5.2 Simplification of contents to one paragraph;<br>Removal of 5.2.3 and 5.3.3, restructuring of other design requirements under 5.3.1<br>5.3.1 Change title to Innocuousness.<br>Include 5.3.1 – 3 in this new subsection.<br>Harmonization of safety requirement with EN 15649–1:2009+A2:2013;<br>Removal of 5.4.4, foam compression test, not required for this type of device in the context of its use; |
| 6 Test methods | 6.1 Clarification of conditioning process |
| 7 Marking, labelling and packaging | - Inclusion of the word ‘debossed’ for markings that are impressed into foam materials;<br>7.2 Editorial amendments for clarity of English words<br>7.3 Information on environmental disposal |
| Annex E | - Removed as no longer relevant;<br>- New Annex E, this document |

# Bibliography

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

[2] EN 20105-A03, *Textiles —Tests for colour fastness — Part A03: Grey scale for assessing staining (ISO 105-A03)*

[3] EN ISO 105-A01, *Textiles — Tests for colour fastness — Part A01: General principles of testing (ISO 105-A01)*

[4] EN ISO 12402-5:2006, *Personal flotation devices — Part 5: Buoyancy aids (level 50) — Safety requirements (ISO 12402-5:2006)*

[5] ISO/IEC Guide 14, *Purchase information on goods and services intended for consumers*

[6] ISO/IEC Guide 51, *Safety aspects — Guidelines for their inclusion in standards*

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