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STN	**Plávajúce výrobky na voľný čas na používanie na a vo vode Časť 1: Klasifikácia, materiály, všeobecné požiadavky a skúšobné metódy (ISO 25649-1: 2024)**	**STN EN ISO 25649-1** 94 0542

Floating leisure articles for use on and in the water - Part 1: Classification, materials, general requirements and test methods (ISO 25649-1:2024)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 01/25

Obsahuje: EN ISO 25649-1:2024, ISO 25649-1:2024

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EUROPEAN STANDARD

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EN ISO 25649-1

November 2024

ICS 97.220.40 Supersedes EN ISO 25649-1:2017

English Version

Floating leisure articles for use on and in the water - Part 1: Classification, materials, general requirements and test methods (ISO 25649-1:2024)

Articles de loisirs flottants à utiliser sur ou dans l'eau - Partie 1: Classification, matériaux, exigences et méthodes d'essai générales (ISO 25649-1:2024)

Schwimmende Freizeitartikel zum Gebrauch auf und im Wasser - Teil 1: Klassifikation, Werkstoffe, allgemeine Anforderungen und Prüfverfahren (ISO 25649-1:2024)

This European Standard was approved by CEN on 2 November 2024.

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

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

Ref. No. EN ISO 25649-1:2024 E

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European foreword

This document (EN ISO 25649-1:2024) has been prepared by Technical Committee ISO/TC 83 "Sports and other recreational facilities and equipment" in collaboration with Technical Committee CEN/TC 136 “Sports, playground and other recreational facilities and equipment” 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of an identical text or by endorsement, at the latest by May 2025, and conflicting national standards shall be withdrawn at the latest by May 2025.

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 25649-1:2017.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

Any feedback and questions on this document should be directed to the users’ national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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, Türkiye and the United Kingdom.

Endorsement notice

The text of ISO 25649-1:2024 has been approved by CEN as EN ISO 25649-1:2024 without any modification.

Annex ZA
(informative)

Relationship between this European Standard and the safety requirements of Directive 2001/95/EC aimed to be covered

This European Standard has been prepared under a Commission's standardization request Mandate **M/372 Floating leisure products for use on or in the water** to provide one voluntary means of conforming to the product safety requirements for floating leisure products for use on or in the water pursuant to **Directive 2001/95/EC** of the European Parliament and of the Council.

Once this standard is cited in the Official Journal of the European Union under that **Directive 2001/95/EC**, compliance with the normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding safety requirements set in the Directive and specified in the request M/372 and associated EFTA regulations.

Table ZA.1 — Correspondence between this European Standard and Commission Decision No 2005/323/EC of 21/04/2005 implementing the General Product Safety Directive 2001/95/EC and Commission's standardization request M/372 for floating leisure articles for use on or in the water

Correspondence between this European Standard and the Safety Requirements of Commission Decision No 2005/323/EC implementing the Directive 2001/95/EC and specified in the request M/372	Clause(s)/subclause(s) of this EN ISO 25649-1	Remarks/Notes
Product and product definition Annex 1- Part 1	4.1	
General Safety requirement Annex I, Part II B)	5.1	
C.1 Specific Safety Requirements		
C.1 (a) floating stability in accordance with the intended and foreseeable use;	5.5.4, 5.6, 5.7, 5.12	
C.1 (b) minimum buoyancy and, in case of inflatable devices, residual buoyancy after failure of one air chamber. Additionally, retention of function where appropriate and in particular where collective use is intended or likely;	5.12	
C.1 (c) means of getting hold during use, easy gripping;	5.5	
C.1 (d) easy escape in case of capsizing, avoidance of any other forms of entrapments or entanglement regarding parts of the human body	5.2	

WARNING 1 Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 Other Union legislation may be applicable to the products falling within the scope of this standard.

International Standard

ISO 25649-1

Floating leisure articles for use on and in the water —

Part 1: Classification, materials, general requirements and test methods

Articles de loisirs flottants à utiliser sur ou dans l'eau —

Partie 1: Classification, matériaux, exigences et méthodes d'essai générales

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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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 document 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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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 83, *Sports and other recreational facilities and equipment*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 136, *Sports, playground and other recreational facilities and equipment,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 25649-1:2017), which has been technically revised.

The main changes are as follows:

— update of the introduction;

— update of Clause 2;

— in Table 1, Class E[b], deletion of the exclusion indicated in footnote a) in the classification for “Not an aquatic toy”);

— addition of the new 4.2 for device with or without added component;

— modification of Figure 1;

— measurements in Figure 6 and Figure 7 updated to include buoyancy aid;

— in 5.5.2, modification of the maximum body weight for Subject 1 – male;

— in 5.12.2.1, modification of the test procedure;

— update of the Bibliography.

A list of all parts in the ISO 25649 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

0.1 Motives, problems, risk assessment, methods

Investigations in statistical data related to drowning accidents and near-drownings create a new awareness about the enormous relevance of drownings in many countries.

Drowning is among the ten leading causes of death of children and young people in the world. Due to the absence of precise data, there is no information on the relation between drowning accidents and the involvement of certain products. Such links can only be shown for a limited number of products among the wide range of products related to water activities. Consumer protection needs to rely on conclusions by risk analysis, experience and analogy to known cases. Considerations based on probability and the precautionary principle are also important in addressing the problem. Beyond the statistical deficiencies, relations between certain products and an increased risk of drowning are plausible. A risk analysis (see Table 1) shows in ISO 25649-3 to ISO 25649-7 what the partial and final risks are.

Until now, standardization has addressed the risks through a wide series of standards aiming at the protection against drowning and at covering products used in leisure activities on and in the water. There are standards covering the relevant products for activities such as playing in the water, water sports, boating, diving, learning to swim and even the emergency devices as buoyancy aids and life jackets. Beyond these traditional activities and products, there is an increasing tendency for creating and marketing new products. These aim to increase pleasure and entertainment on the water but also to increase speed, action and thrill with new activities such as “tubing” or “white water rafting”. Some new products are traditional core products that have been partially modified, some are derived from traditional products but have been further developed into something new. Additionally, there is a clear trend to bring formerly land-based playground equipment on the water. The use of the word “amphibiation” is justified as in many cases the original function of the product is maintained, i.e. the product can be used both on land and water. Typical examples for amphibiated products are modifications of inflatable boats into bathing rafts or the further development of the earlier swim-ring into a flotation seat. Other examples are inflatable trampolines, climbing installations on the water and inflatable floating armchairs and sun loungers including a mini bar and sun shade. This trend is clear and likely to continue.

The nature of these new products provides an equal or even higher risk potential than the original core products. In parallel, the number of these products override the number of core products. In cases of collective use, the frequency of use is considerably increased, which in turn increases the likelihood of accidents, including drownings. Drowning is the final risk of the activities related to the mentioned products. Other somewhat lesser evils – partial risks – are likely to happen independently or in combination with the final risk.

With regard to safety-related standardization, an evident discrepancy emerges between the core products and the huge number of new products forming what the experts call the “grey zone”. Standardization in the past has focused on the core products, while “grey zone products” have not been considered and investigated, thus remaining excluded from the scopes of related standards. A systematic risk analysis or an investigation of the role of these new products in drowning accidents was never made. This has changed in recent times, with the triggering incident being the swim seat case, involving aquatic toys and related products and negligence. Today, what matters more than a disturbing gap in the series of existing standards, is the presence of several coincidences:

— the main user groups of these products are children and adolescents who in turn are the main victims of drowning;

— the main areas where drowning happens are the same areas where such products are used (rivers, lakes, pools, bathing beaches);

— the risks can be easily identified and partly proven, and the increase in numbers and frequencies of accidents were already mentioned.

0.2 Equal risk, equal requirement

Safety-related standardization covering products used in leisure activities on and in the water aims at:

— achieving equality of technical rules from equality of risks (risk-/rule-alignment);

— closing the standardization gap (i.e. completeness);

— setting clear boundaries between the product areas in order to avoid incorrect certification (e.g. unjustified CE-Mark);

— avoiding individually established testing procedures by the various test houses in the absence of a unified technical rule.

0.3 Risks and need for prevention

The following are considerations around the risks and the need for prevention.

— Relevance of drowning is proven (age groups, places, partly product involvement).

— The increase in the frequency of use and in the number of products likely contributes to accidents.

— Theoretical risk analysis shows additional risks below the final risk of drowning.

— Plausibility and likelihood of harm to users is evident, so is the probability of adequate safety standards to avoid or minimize this.

— Positive contribution to the basic problem of parental supervision is needed and claimed with regard to children activities, but is often weak, not existing or neglected.

— Safety provided by a product design that ensures the highest possible level of technical security does not exempt parental supervision for young children.

— There is a trend to bring more and more former land-based products on the water, as well as trends to adventure activities increasing the thrill of water related leisure activities and entertainment.

— There is a need for prevention.

0.4 Body entrapment, human tests subjects and USA anthropometric data

This document includes test procedures based on human test subjects. The anthropometric data for the worst-case human test subject – the heaviest and biggest person representing the 95th percentile of a population – have been derived from European body measurement data. The international worst-case regarding body dimensions is constituted by the USA-population. The 95 % body weight for the USA population needs to be increased from 90 kg to 110 kg and the Body Mass Index (BMI) should be specified between 35 and 40. This corresponds to a body height of 170 cm to 175 cm. Accordingly, the rigid test probe needs to be modified.

International Standard **ISO 25649-1:2024(en)**

Floating leisure articles for use on and in the water —

Part 1:
Classification, materials, general requirements and test methods

1 Scope

This document specifies general safety requirements and test methods related to materials, safety and performance for classified floating leisure articles for use on and in water.

This document is not applicable to:

— aquatic toys (use in shallow waters/use under supervision);

— inflatable boats with a buoyancy > 1 800 N;

— buoyant aids for swimming instructions;

— air mattresses that are not specifically designed or intended for use on the water (e.g. velour bed, self-inflating mattress and rubberized cotton air mattress);

— floating seats for angling purposes;

— surf sports type devices (e.g. body boards, surf boards, stand-up-paddles boards);

— water ski, wakeboard or kite surfing board;

— devices made from rigid materials e.g. wood, aluminium, hard or non-deformable plastic;

— devices that are kept in shape by permanent air flow;

— rings intended for use on water slides;

— wading devices.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

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

ISO 105-A03:2019, *Textiles — Tests for colour fastness — Part A03: Grey scale for assessing staining*

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

ISO 105-E04:2013, *Textiles — Tests for colour fastness — Part E04: Colour fastness to perspiration*

ISO 105-X12:2016, *Textiles — Tests for colour fastness — Part X12: Colour fastness to rubbing*

ISO 868:2003, *Plastics and ebonite — Determination of indentation hardness by means of a durometer (Shore hardness)*

ISO 1817:2022, *Rubber, vulcanized or thermoplastic — Determination of the effect of liquids*

ISO 2411:2017, *Rubber- or plastics-coated fabrics — Determination of coating adhesion*

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

ISO 25649-2:2024, *Floating leisure articles for use on and in the water — Part 2: Consumer information*

ISO 25649-3:2024, *Floating leisure articles for use on and in the water — Part 3: Additional specific safety requirements and test methods for Class A devices*

ISO 25649-4:2024, *Floating leisure articles for use on and in the water — Part 4: Additional specific safety requirements and test methods for Class B devices*

ISO 25649-5:2024, *Floating leisure articles for use on and in the water — Part 5: Additional specific safety requirements and test methods for Class C devices*

ISO 25649-6:2024, *Floating leisure articles for use on and in the water — Part 6: Additional specific safety requirements and test methods for Class D devices*

ISO 25649-7:2024, *Floating leisure articles for use on and in the water — Part 7: Additional specific safety requirements and test methods for Class E devices*

EN 71-1:2014+A1:2018, *Safety of toys — Part 1: Mechanical and physical properties*

EN 13138-3:2021, *Buoyant aids for swimming instruction — Part 3: Safety requirements and test methods for swim seats into which a user is positioned*

EN 16051-1:2012, *Inflation devices and accessories for inflatable consumer products — Part 1: Compatibility of valves and valve adapters*