



**International  
Standard**

**ISO 25649-3**

**Floating leisure articles for use on  
and in the water —**

**Part 3:  
Additional specific safety  
requirements and test methods for  
Class A devices**

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

*Partie 3: Exigences de sécurité et méthodes d'essai  
complémentaires propres aux dispositifs de Classe A*

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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](http://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](http://www.iso.org/patents). ISO shall not be held responsible for identifying any or all such patent rights.

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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](http://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 25649-3:2017), which has been technically revised.

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The main changes are as follows:

- update of [Clause 2](#);
- in [4.3.7.1](#), modification of the requirements for Class A products - superstructure;
- creation of new subclauses ([4.3.8.1](#) to [4.3.8.5](#)) to include other fixation methods;
- update of [4.3.8](#) and [5.4.2](#).

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](http://www.iso.org/members.html).

## Introduction

According to the nature and the intended use of the products dealt with in this document the technical requirements are focused on space per person, floating stability matters and residual buoyancy in case of an emergency.

Some of the products provide dual or multiple use features.

NOTE Multiple use features product is considered as a product intended to be used for more than one purpose (e.g: trampoline for jumping or resting).

Comprehensive consumer information requirements complete the requirement profile of the document and include basic purchase information on whether a product provides floating stability or needs to be balanced by the user, to create safe floating.

### Interior structure class A

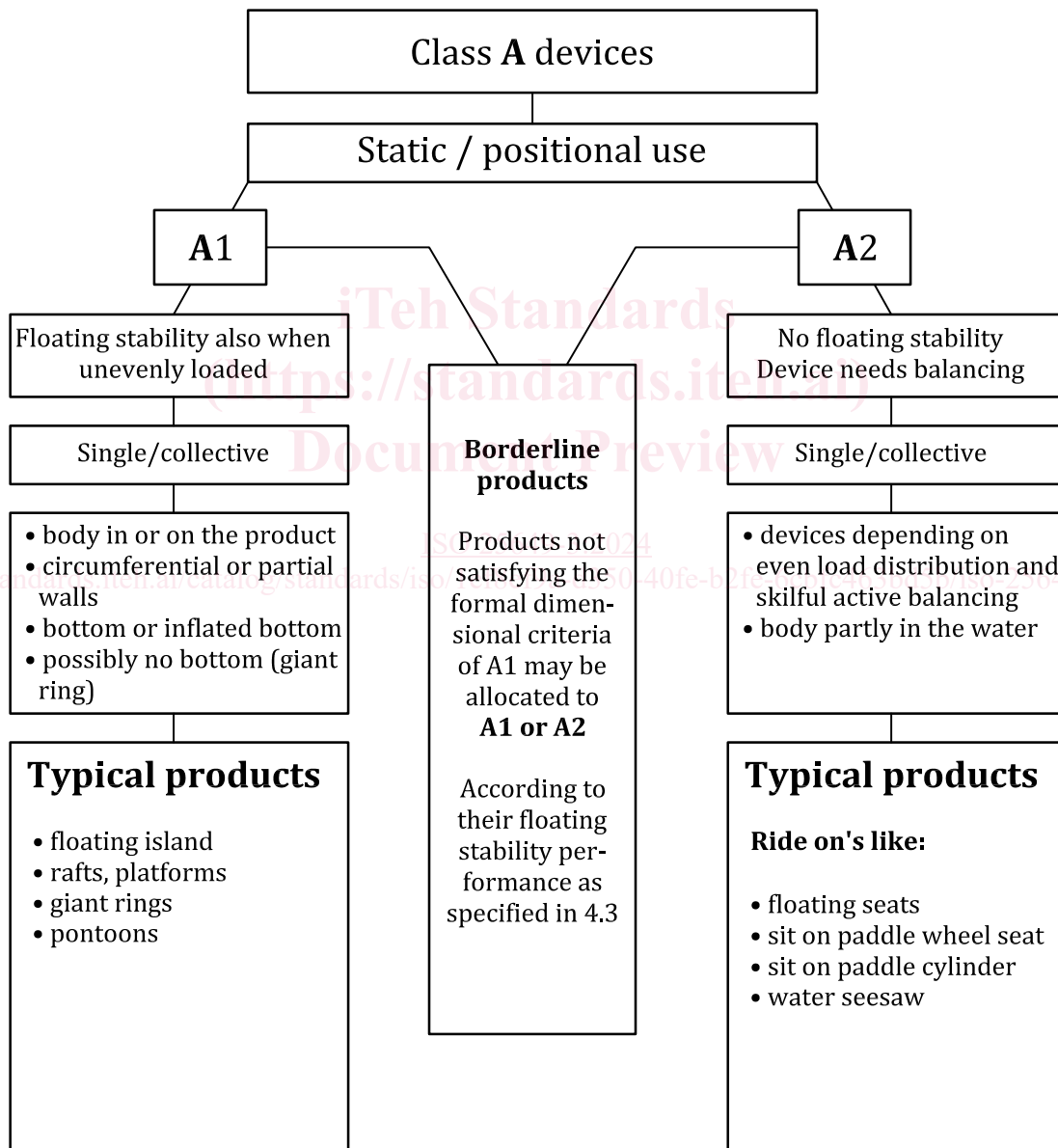


Figure 1 — Interior structure Class A devices

The risk assessment for this document is shown in [Table 1](#).

Table 1 — Introductory risk analysis

Class	Typical products	Place of usage	Function; range of usage; target / age group	Type of movement / propulsion	Position of user regarding equipment and elevation above water	Predictable misuse	Partial risk related to water environment	Final risk	1.1 Protection aims; 1.2 Related standard / regulation
A1	Floating inflatable islands; recreational raft; platform/pontoon, etc.	Sea shore, close to shore; lakes; smoothly running rivers; public or private ponds.	Relaxing, resting on the water; sunbathing; basis for bathing and swimming or playing; device providing high level of floating stability; single and collective use; all age groups, swimmers.	Static use within limited area; little action; movement by pushing through swimming strokes only; no mechanical means of propulsion.	On or in (side walls) the device, laying, sitting, no direct body fit; grab handles might exist, but resting does not depend on gripping or balancing; no dangerous height of fall.	Dangerous distance from the bank/ shore; use in currents and/or dangerous offshore winds; use by non-swimmers; fall over board; no diving platform.	Unnoticed drifting to open waters; falling asleep and consequently extreme sunburn, etc.; capsizing; skin irritation due to long duration of skin contact or dangerous substances in contact with skin; climbing back; hypothermia; cold shock.	DROWNING	Floating stability; minimum buoyancy; residual buoyancy; space, safety handles or lines; anchorage; warning notes, labelling, swimmers only, age restriction according to ISO 6185-1, ISO 6185-2 and ISO 6185-3
A2	Large buoyant structures.	Sea shore/ close to shore, lakes, public or private pools; ponds.	Action, playing in the water; balancing children; collective and single use; all age groups, swimmers.	Drifting; propulsion only by swimming strokes or third party.	On the device; loose fit via handles; no dangerous height.	Use by non-swimmers; use in current, canal, lack of supervision.	Drifting away in open waters due to wind and/or current; devices provokes use in deep; used by non-swimmers; falling into deep water.	DROWNING	Labelling, residual buoyancy, grab handles, supervision; warnings.
A1/A2	Air mattress for use in water; floatable pool loungers; floating seating structures; giant rings or tubes.	Sea shore close to the shore; lakes, public or private pools; ponds; sea.	Resting on the water; observation of underwater environment; play; mainly single use; floating stability depends on design; all age groups, swimmers.	Normally no mechanical means of propulsion but possible; drifting or propulsion by swimming strokes; seats might be equipped with pedals (wheel propulsion).	On or in the device; device is clung on; device is held; mainly a near horizontal posture sitting; no relevant elevation above water level.	Risks in A1 and risks in A2.	Risks in A1 and risks in A2.	No regulation and rule are known to provide technical substance	

# Floating leisure articles for use on and in the water —

## Part 3:

# Additional specific safety requirements and test methods for Class A devices

## 1 Scope

This document specifies additional specific safety requirements and test methods for Class A floating leisure articles for use on and in the water regardless whether the buoyancy is achieved by inflation or inherent buoyant material.

This document is applicable for Class A floating leisure articles as specified in ISO 25649-1:2024, Table 1.

NOTE 1 Typical products in Class A (see [Figures A.1](#) to [A.3](#)):

- “Floating Islands” in near round or square shaped forms decorated with palm tree, sun shade, etc. high superstructure;
- large floats/rafts in various shapes, from round to square;
- large floating tubes, giant tubes (inflatable or inherently buoyant);
- floating arm chairs, seats and sun beds;
- air mattresses for use on the water;
- recreational rafts/floating platforms/pontoons.

NOTE 2 Typical places for application:

- pools;
- protected areas of lakes, ponds;
- protected area sea shore (no offshore winds, no currents).

## 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 25649-1:2024, *Floating leisure articles for use on and in the water — Part 1: Classification, materials, general requirements and test methods*

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

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 25649-1:2024 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>

— IEC Electropedia: available at <https://www.electropedia.org/>

**3.1  
residual buoyancy**

provision of remaining buoyancy in case of a defect of any buoyancy chamber

**3.2  
floating stability**

capability of a non-moving buoyant structure to withstand internal and external forces that tend to capsize it and to maintain a stable floating position

Note 1 to entry: Internal forces leading to capsizing can result from uneven load distribution, external forces leading to capsizing can result from wind or waves.

**3.3  
static use**

use that typically needs limited action from the user

Note 1 to entry: Product is mainly used for relaxing, sun bathing, lying, sitting, etc.

**3.4  
escape**

easy and complete separation between the user and the device in case of capsizing of the device or system without hindrance through a part or feature of the floating device

**3.5  
available area**

area on or inside a floating leisure article that can be used unrestrictedly for user accommodation when taking the intended posture(s)

**3.6  
inherent buoyant material**

non-crosslinked (closed-cell) foam or other materials enclosed in (a) sealed compartment(s) in the hull that have a specific weight lower than  $1 \text{ kg/dm}^3$

Note 1 to entry: Floating leisure articles made from inherent buoyant material are considered buoyant structures (hull) achieving all or part of its intended shape and buoyancy through soft foam, hard foam or sealed chambers filled with air, gas or granules.

## 4 Safety requirements and test methods

### 4.1 General

Construction of Class A devices shall be such that it corresponds, in terms of design, dimensions, safety, strength and durability, to its intended use.

If inflatable floating leisure articles provide buoyancy in several components, then requirements apply to all components. Floating leisure articles shall provide residual buoyancy if one air chamber fails. This residual buoyancy shall maintain the safety of the device even if its function is lost. The following safety requirements are therefore related to:

- design;
- sizing;
- materials;
- strength;
- performance;
- information.



In individual cases, due to the unpredictability of future products, a corresponding choice shall be made.

Design and appearance of floating leisure articles shall not change the intended primary function of these floating leisure articles nor introduce a toy play value.

## 4.2 Design, sizing, admissible number of users and maximum load capacity

### 4.2.1 General

Class B products shall be marked with the safety information markings, as specified in ISO 25649-2:2024, Clauses 4.1 and 4.2.1.

### 4.2.2 Sizing

#### 4.2.2.1 Requirements

If a specific size/body weight correlation between user and device is relevant, the marking shall be in accordance with the range of body weights. The size/body weights of the user shall be indicated on the product by completing the relevant boxes of the appropriate safety information symbol "User's body weight range" as specified in ISO 25649-2:2024, Figure 24.

#### 4.2.2.2 Test method

Check for correct marking and completion.

### 4.2.3 Class A1-products, space per person and admissible number of users

#### 4.2.3.1 Requirements

Class A1-products shall be labelled with regard to the intended posture – lying/sitting – of the user(s) and the maximum permissible number of users. The minimum space for a user in lying posture shall correspond to a flexible template (adult/child) the dimensions of which are specified in ISO 25649-1:2024, A.1.1. The minimum space for a sitting user shall correspond to the template (adult/child) as specified in ISO 25649-1:2024, A.1.2. In cases of combined use (sitting and lying), the template for a lying person shall be applied to determine the available area.

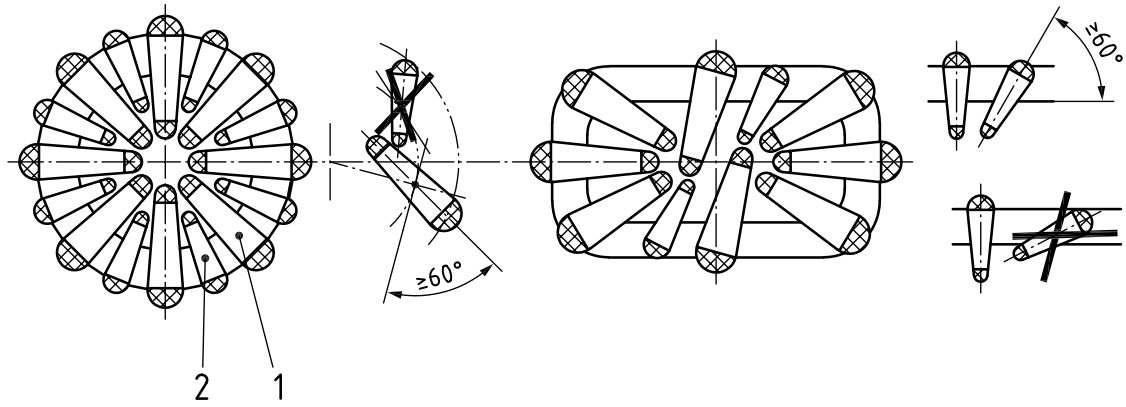
Templates may exceed the outer circumference of the device to a total amount of 30 %. This amount is divided in 15 % of template length for the head area and 15 % of template length for the leg area (see shaded area of templates in ISO 25649-1:2024, Annex A). The angle between centre line of the template and tangential of a possible back rest, board wall, etc. shall be greater than 60° (see [Figure 2](#)).

The total amount of users determined by the templates shall not contradict to the load capacity and floating stability of the device.

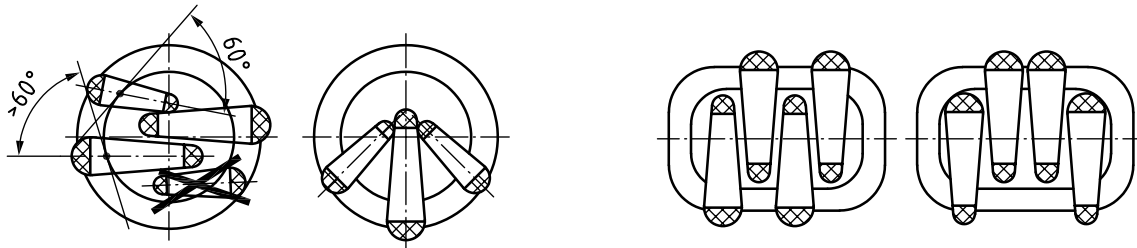
Space requirement using templates is not applicable for ride-on devices where distinct upright seats and/or seating positions are imposed by the device.

#### 4.2.3.2 Test method

Testing shall be done by applying the relevant templates as specified in ISO 25649-1:2024, A.1 and shown in [Figure 2](#). Templates shall be stretched out over the area available to the user without overlapping. Templates may be arranged to optimize the number of users and the mix of adults and children without exceeding the load capacity of the device. Blank areas of templates shall be completely inside the outer circumference. Check by visual inspection for appropriate labelling in accordance with safety information symbols "Number of users, adult/children" and/or "Maximum load capacity" as specified in ISO 25649-2:2024, Figure 22 and Figure 27.



a) Class A1, "Big raft": 3,8 m in diameter / 4,8 m × 2,8 m



b) Class A1, "Small raft": 2,5 m in diameter / 3 m × 2 m

**Key**

- 1 template space per person, adult
- 2 template space per person, child

**Figure 2 — Available space per person, determination of number of users**

**4.2.4 Class A2-products, space per person and admissible number of users**

<https://standards.iteh.ai/catalog/standards/iso/1ef8ef9a-d350-40fe-b2fe-6cbfc463bd5b/iso-25649-3-2024>

**4.2.4.1 Requirements**

Class A2 products shall provide distinct seat(s) or sitting areas or recognizable space where the user is to be positioned in the intended posture. Seats, etc. of ride-on devices shall be equipped with at least one grab handle for each permissible user.

If the device implies sitting in line of more than one user, the sitting space for each user shall be at least a length of:

- Child = 30 cm if the legs hang down;
- Child = 60 cm if the thighs follow the seat surface;
- Adult = 35 cm if the legs hang down;
- Adult = 70 cm if the thighs follow the seat surface.

**4.2.4.2 Test method**

Testing shall be by visual inspection and measurement.