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Interested committees:

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

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Submission of Comments

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	

English Version

Water slides - Part 1: Safety requirements and test methods

Toboggans aquatiques - Partie 1 : Exigences de sécurité et méthodes d'essai

Wasserrutschen - Teil 1: Sicherheitstechnische Anforderungen und Prüfverfahren

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 136.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Contents	Page
European foreword	5
Introduction	6
1 Scope.....	7
2 Normative references.....	7
3 Terms and definitions	8
4 Classification.....	11
4.1 Type 1.....	11
4.1.1 Type 1.1	11
4.1.2 Type 1.2	11
4.2 Type 2.....	11
4.2.1 Type 2.1	11
4.3 Type 3.....	11
4.4 Type 4.....	11
4.5 Type 5.....	12
4.6 Type 6.....	12
4.6.1 Type 6.1	12
4.6.2 Type 6.2	12
4.7 Type 7.....	12
4.8 Special elements.....	12
4.8.1 Bowl	12
4.8.2 Element that allows lateral oscillation	12
4.8.3 Uphill element.....	12
4.8.4 Wild river	12
5 Materials and construction	12
5.1 General.....	12
5.2 Selection of materials.....	13
5.3 Certificates	13
5.4 Manufacturer and installer	13
5.5 Durability.....	13
5.6 Electrical installations	13
6 Design.....	13
6.1 Design guidelines.....	13
6.2 Design analysis	14
6.2.1 General.....	14
6.2.2 Preliminary risk analysis.....	14
6.2.3 Construction documents	15
6.3 Static calculations.....	15
6.3.1 General.....	15
6.3.2 Actions in the slide area	16
6.3.3 Actions on access, platforms and railings.....	20
6.3.4 Combination of actions and verification	20
7 Safety requirements for water slides	20
7.1 General.....	20
7.2 Entrapment	21

7.3	Surfaces	21
7.3.1	General	21
7.3.2	Surface of the slide proper	21
7.4	Corners and edges	21
7.5	Access to water slides	21
7.5.1	General	21
7.5.2	Stairs.....	21
7.5.3	Stepladders	21
7.5.4	Platform	22
7.5.5	Protection against falling.....	22
7.5.6	Slip resistance	23
7.6	Start section	24
7.7	Slide proper	24
7.7.1	General	24
7.7.2	Sliding path	24
7.7.3	Maximum acceleration on a sliding person	24
7.8	Tubes and covered sections.....	25
7.9	Final part	25
7.10	Landing device/Landing area	25
7.10.1	General	25
7.10.2	Catch unit.....	25
7.10.3	Sofa unit	26
7.10.4	Surf landing area.....	26
7.10.5	Splashdown areas.....	26
7.11	Accessories.....	27
7.11.1	Covers	27
7.11.2	Ride enhancement devices.....	27
7.11.3	Other constituent parts	27
7.12	Water supply	29
7.12.1	General	29
7.12.2	Water flow rate.....	29
7.13	Interference between users.....	29
7.14	Interference between users and non-users	29
8	Additional safety requirements for Types 1 to 7 and special elements	30
8.1	Slide proper	30
8.1.1	General	30
8.1.2	Type 1.....	30
8.1.3	Type 2.....	30
8.1.4	Type 3.....	31
8.1.5	Type 4.....	31
8.1.6	Type 5.....	32
8.1.7	Type 6.....	33
8.1.8	Type 7.....	34
8.1.9	Requirements for special elements	34
8.2	Splashdown area.....	35
8.2.1	General and specific pools.....	35
8.2.2	Requirements for landing.....	36
8.3	Clearance zones.....	37
9	Check and test runs.....	38
9.1	General	38
9.2	Technical and physical checks.....	38
9.3	Practical test.....	38

9.3.1	General.....	38
9.3.2	Slide tester.....	39
9.3.3	Sliding conditions	39
9.3.4	Acceleration and speed measurements.....	39
9.4	Test report.....	39
10	Designation and marking.....	40
10.1	Designation	40
10.2	Marking	41
Annex A (normative) Splashdown areas		42
Annex B (normative) Use of stainless steels for water slides		48
B.1	General.....	48
B.2	Indoor swimming pools with disinfection with chlorine	48
B.2.1	General.....	48
B.2.2	Materials without regular cleaning.....	48
B.2.3	Materials with regular cleaning.....	48
B.2.4	Outdoor swimming pools with disinfection with chlorine	49
B.3	Coatings and paintings.....	49
Annex C (normative) Design loads, accesses and platforms		50
C.1	Vertical imposed loads.....	50
C.2	Horizontal imposed loads.....	50
C.3	Stiffness	51
C.4	Stairs.....	51
Annex D (informative) Acceleration and speed measurements		53
D.1	Test devices.....	53
D.1.1	General.....	53
D.1.2	Acceleration measuring device.....	53
D.1.3	Maximum speed measuring device	53
D.2	Description of the acceleration test method.....	53
Bibliography		54

European foreword

This document (prEN 1069-1:2025) has been prepared by Technical Committee CEN/TC 136 “Sports, playground and other recreational facilities and equipment”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 1069-1:2017+A1:2019.

prEN 1069-1:2025 includes the following significant technical changes with respect to EN 1069-1:2017+A1:2019:

- a) change of scope: “to all water slides for public use installed at open water areas or in swimming pools” → “open water areas” has been added to open the scope to other water facilities;
- b) Clause 2 “Normative references” has been revised;
- c) Clause 3 “Terms and definitions”, has been revised;
- d) Clause 4, “Classification” has been revised:
deletion of Typ2 2.2 and Type 8, Type 9, Type 10, therefore a new 4.8 “Special elements” has been added;
- e) subclause 7.5.5, “Protection against falling” has been revised; now applicable to all Types;
- f) subclause 7.9.2 “Landing device/Landing area” moved to own subclause 7.10 and has been revised;
- g) “Splashdown areas” moved to subclause 7.10.5;
- h) Clause 8 “Additional safety requirements for Types 1 to 7 and special elements” has been revised:
table for dimensions and falling distance/water depth of Type 1 and Type 2, cross section of Type 6 has been added; Figure 14 has been revised; Figure 15 “Difference in height” has been deleted; new Figure 15 “Clearance dimensions” has been added;
- i) the document has been editorially revised.

EN 1069, *Water slides*, consists of the following parts:

- *Part 1: Safety requirements and test methods*
- *Part 2: Instructions*

Introduction

The market for water slides is extremely wide and specific and still developing. It is impossible to define an all-embracing safety specification, including dimensions and design requirements as required by a standard, without limiting the design possibilities and preventing innovative and new but safe products.

This European Standard is intended to establish safety requirements and design guidance rules to serve anyone involved with water slides, especially designers, manufacturers, operators and users, to ensure safe and more efficient products. Its basic approach is the consciousness that the sliding action usually implies for the users a higher risk level than using a pool. For certain aspects of design, manufacturing, installation, operation and use only specific guidelines, without any technical specification, are given, which should be taken into consideration and be fulfilled in order to ensure safety for operators and users.

1 Scope

This document is applicable to all water slides for public use installed at open water areas or in swimming pools.

This document specifies general safety requirements for water slides for public use installed at open water areas or in swimming pools and specific requirements for defined types of water slides. These specific safety requirements are also applicable to undefined types as far as possible.

These requirements concern safety and the technical rules for design, calculation and testing.

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.

prEN 1069-2:2025, *Water slides — Part 2: Instructions*

EN 1990, *Eurocode — Basis of structural and geotechnical design*

EN 1991-1-1, *Eurocode 1 — Actions on structures — Part 1-1: Specific weight of materials, self-weight of construction works and imposed loads for buildings*

EN 1991-1-3:2025, *Eurocode 1 — Actions on structures — Part 1-3: General actions — Snow loads*

EN 1991-1-4, *Eurocode 1: Actions on structures — Part 1-4: General actions — Wind actions*

EN 10088-1, *Stainless steels — Part 1: List of stainless steels*

EN 10088-2, *Stainless steels — Part 2: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes*

EN 10204:2004, *Metallic products — Types of inspection documents*

EN 13451-1:2020+A1:2024, *Swimming pool equipment — Part 1: General safety requirements and test methods for equipment installed in pools for public use*

EN 13451-2, *Swimming pool equipment — Part 2: Additional specific safety requirements and test methods for ladders, stepladders and handle bends*

EN 13451-3, *Swimming pool equipment — Part 3: Additional specific safety requirements and test methods for inlets and outlets and water/air based water leisure features installed in pools for public use*

EN 15288-1:2018+A1:2024, *Swimming pools for public use — Part 1: Safety requirements for design*

EN 15288-2, *Swimming pools for public use — Part 2: Safety requirements for operation*

EN 22768-1, *General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications (ISO 2768-1)*

EN ISO 9606-1, *Qualification testing of welders — Fusion welding — Part 1: Steels (ISO 9606-1)*

EN ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025)*

3 Terms and definitions

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

pool/swimming pool

facility, with one or more water areas, intended for swimming, leisure or other water-based physical activities

[SOURCE: EN 15288-1:2018+A1:2024, 3.1]

3.2

public use

use of an installation open to everyone or to a defined group of users, not designated solely for the owner's/proprietor's/operator's family and guests independently from paying an entrance fee

[SOURCE: EN 15288-1:2018+A1:2024, 3.5]

Note 1 to entry: Pools serving houses rented for private use are not of public use.

3.3

water slide

piece of equipment or installation with a sliding surface on which the user slides with water as a friction- and/or speed-reducing medium; the user slides freely or with the use of a ride enhancement device

Note 1 to entry: On some water slides the user can also be pushed e.g. by a water stream.

Note 2 to entry: For classification see Clause 4.

3.4

platform

area providing access to the start section

3.5

start section

area where the user enters the slide proper and takes the sliding position

3.6

slide proper

area intended for sliding

3.7

final part

part of the slide proper designed to prepare the user for landing

3.8

landing

conclusion of sliding action

Note 1 to entry: Types of conclusion can be fall, surf landing into water, being slowed down and stopped in a catch unit or sofa.

3.9

surf landing

kind of landing which implies the action of being guided from the end of the final part, independently from its design, to intentionally surf on the water surface of the pool as a design feature

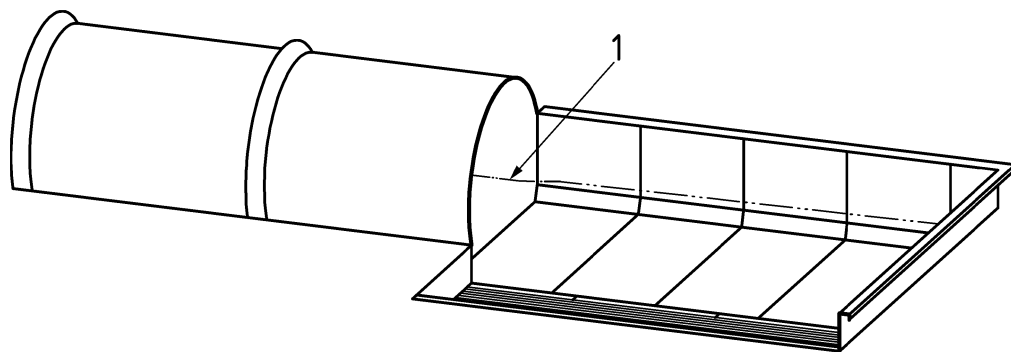
3.10

catch unit

integral part of a water slide, which brings the rider to a halt in his sliding position

Note 1 to entry: See Figure 1.

EXAMPLE



Key

1 water line

Figure 1 — Example of typical catch unit

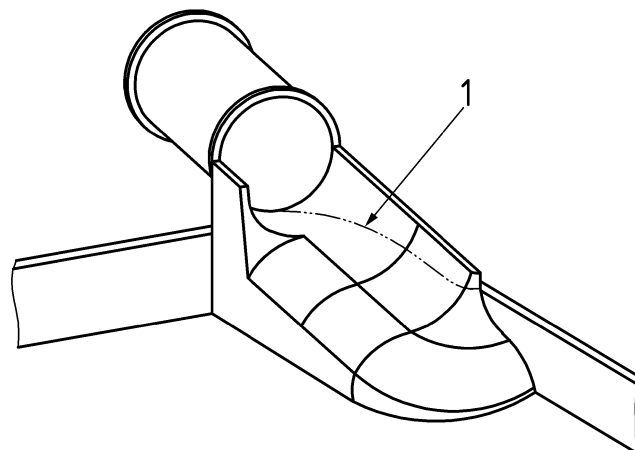
3.11

sofa unit

integral part of a water slide, which slows down the rider on the sliding surface and moves him additionally sideways out of the sliding path of the following users

Note 1 to entry: See Figure 2.

EXAMPLE



Key

1 water line

Figure 2 — Example of typical sofa unit

3.12

splashdown area

specific pool or area which is part of a general purpose pool, in which the user lands from the end of the slide, and is brought to a halt in the water

3.13

water level

defined operating water surface in the landing area

3.15

tube

closed section, not necessarily circular in cross section, of a water slide, with a fully utilisable sliding surface

3.16

cover

device to enclose an open slide, not intended for sliding

3.17

riser

extension for the slide proper, intended for sliding

3.18

wave screen

device, placed within the clearance zone, to control spilling water

3.19

ride enhancement device

device to slide on or in, designed for a particular water slide

3.20

barrier

device to restrict users from falling over, under or through it

3.21**average inclination**

inclination x in percent (%) calculated with the formula

$$x = (h \times 100) / l$$

where

h is the height between start section and beginning of final part, in metres;

l is the developed length of the slide proper excluding the final part, in metres.

3.22**clearance zone**

controlled space around the user on the slide proper and on the final part, designed to prevent the impact of the users with obstacles

4 Classification**4.1 Type 1****4.1.1 Type 1.1**

Straight slides not exceeding 1 000 mm in height from start section to water level and with an average inclination ≤ 70 %.

NOTE This slide is typically designed for small children.

4.1.2 Type 1.2

Straight slide with an average inclination of ≤ 70 % and a height of $1\,000\text{ mm} < h \leq 3\,000\text{ mm}$ from start section to water level.

NOTE This slide is typically designed for children.

4.2 Type 2**4.2.1 Type 2.1**

Curved single-track slide with an average inclination of ≤ 70 % and a height of $\leq 3\,000\text{ mm}$ from start section to water level.

NOTE This slide is typically designed for children.

4.3 Type 3

Single-track slide, with an average inclination of maximum 13 %, excluding the final part. The maximum speed of the users shall be $\leq 8\text{ m/s}$.

NOTE The average speed of the users is usually $\leq 6\text{ m/s}$.

4.4 Type 4

Speed single-track slide with an average inclination between 13 % and 20 %, excluding the final part. The maximum speed of the users shall be $\leq 14\text{ m/s}$.

NOTE The average speed of the users is usually $\leq 10\text{ m/s}$.

4.5 Type 5

High-speed single-track slide with an average inclination of at least 20 %, excluding the final part. The maximum speed of the users may be > 14 m/s.

4.6 Type 6

4.6.1 Type 6.1

Multi-track slide with separate parallel tracks, with an average inclination of maximum 13 % excluding the final part, one beside the other over the full length. The maximum speed of the users shall be ≤ 8 m/s.

NOTE The average speed of the users is usually ≤ 6 m/s.

4.6.2 Type 6.2

Multi-track slide with separate parallel tracks, with an average inclination of between 13 % and 30 %, excluding the final part. The maximum speed of the users shall be ≤ 14 m/s.

NOTE The average speed of the users is usually ≤ 10 m/s.

4.7 Type 7

Wide straight slide with an average inclination of 35 %. The maximum speed of the users shall be ≤ 8 m/s.

4.8 Special elements

4.8.1 Bowl

Special element within a slide where the user exits from a slide of another type into a circular bowl and descends in a spiral path, before either free falling through a hole at the bottom into the splashdown area or entering an additional slide.

4.8.2 Element that allows lateral oscillation

A special element where the user exits from a slide of another type into a U-shaped part allowing free transversal oscillating sliding in direction to the end of the element.

EXAMPLE A cone or a halfpipe.

4.8.3 Uphill element

A special element where the user slides upwards, sometimes with the help of jets or a specific device.

4.8.4 Wild river

A combination of slide elements with various cross sections where the user slides, floats or swims in a volume of water. The slide can divide in multiple tracks of other types which can congregate to a single track.

5 Materials and construction

5.1 General

Any material may be used for the construction of water slides, supports and ride enhancement devices, provided that it fulfils the requirements of this standard.

5.2 Selection of materials

All materials and finishes used shall be:

- a) suitable for the selected use, the respective surroundings and conditions;
- b) able to withstand conditions of high humidity with occasional saturation and/or corrosiveness;
- c) not encouraging the growth of bacteria.

The use of stressed stainless steel which could be subjected to stress corrosion shall be avoided, unless it can be inspected and regularly cleaned. Where stainless steel is used, the grade used shall be in accordance with Annex B.

The materials shall not contain substances which are assigned the following Risk-phrase at concentrations exceeding 0,1 % (see Regulation (EU) No. 1272/2008):

— N317 can cause an allergic skin reaction.

NOTE Specific national regulations can apply.

5.3 Certificates

Certificates for safety critical building materials (e.g. load bearing materials) shall comply at least with EN 10204:2004, test report "Type 2.2".

NOTE Specific national regulations can apply.

5.4 Manufacturer and installer

The manufacturer and the installer shall ensure that persons engaged in the construction and the installation of the water slide are competent to carry out the work, and that welders are suitably qualified and accepted according to EN ISO 9606-1. Any assembling, modification, adjustment or alteration of parts shall only be done by persons with appropriate experience and skills.

5.5 Durability

The designer shall specify the method of protection or frequency of inspection. All components shall be protected to minimize degradation caused by corrosion or rot by an approved method. The quality of protection shall depend on the use of the components. Where hollow section structural steel is used, internal corrosion shall be considered.

5.6 Electrical installations

The relevant national and European regulations for electrical installations in and at buildings (e.g. swimming pool, swimming pool surround) apply.

NOTE See HD 60364-7-702.

6 Design

6.1 Design guidelines

The design of a water slide, as a standard model or a one-off installation conforming to the client's specifications, shall consider:

- EN 15288-1, especially the preliminary risk assessment, and EN 15288-2;
- the intended user group, e.g. children, adults, users with special requirements;

- ambient conditions, e.g. indoor, outdoor.

In the design document's possible/allowed user groups, their characteristics and limits shall be indicated.

NOTE Various risks can be involved in using a water slide, e.g. ejection from the slide, impacts, falls, burns, or entrapment. For guidance to a risk assessment, see EN 15288-2 and EN 1069-2.

6.2 Design analysis

6.2.1 General

Water slides shall be treated as structures, Type 1 and Type 2 water slides only when applicable. Attention is drawn to the statutory requirements e.g. with regard to means of access and means of support.

6.2.2 Preliminary risk analysis

A preliminary risk analysis shall be performed by the designer at the design stage for every water slide, with the purpose of identifying possible hazards and hazardous situations that could occur by its use, paying attention to the fact that the riding of water slides can be a vigorous physical activity and the risks associated are greater than those usually encountered in a swimming pool. The preliminary risk analysis shall consider different user groups (e.g. adults, children, people with reduced ability). The risk analysis shall ensure the conformity of the design to this standard.

Some typical issues to be considered are:

- type of water slide;
- intended users;
- implementation of the slide into a new swimming pool complex;
- integration of the slide into an existing facility;
- distance control (e.g. interference between users);
- access control (e.g. interference between users and non-users);
- hazards related to the slide proper including those coming from possible vandalism especially parts freely accessible;
- hazards related to the landing;
- risky behaviours of the users;
- surroundings;
- traffic to and from the slide;
- influence of the use of the water slide on the regular operation of the whole facility.

The risks shall be assessed against the safety of user groups, especially of those with special needs.

This assessment is even more important for water slides not yet classified in this standard and shall also consider the specific safety requirements given in Clause 8, to comply with them as far as possible.

The results of the preliminary risk assessment shall be made available to the slide tester who will perform the practical test, see 9.3.

NOTE Specific national regulation can apply.

6.2.3 Construction documents

The construction documents shall be provided to the customer. They shall contain all documents required for the assessment of the stability and operational safety of the water slide. The requirements for documentation given in prEN 1069-2:2025, Clause 6 shall be observed.

The construction documents for Type 3 to Type 7 and special elements shall include as a minimum:

- type of water slide;
- declaration of conformity to this European Standard for the construction;
- full design and fabrication drawings;
- statement about intended use;
- construction method statement;
- comprehensive stress and stability analysis as required by the Eurocodes;
- description of special features of the water slide;
- description and dimensions of any clearance zones;
- specification of all materials;
- specification of electrical installation;
- any restrictions related to the users.

NOTE Type 1 and Type 2 water slides can require a simplified documentation.

6.3 Static calculations

6.3.1 General

The structural analysis of the complete slide including the supports shall be performed using the safety concept according to Eurocode EN 1990 and associated parts using the partial factor method according to Table 1, Table 2 and Table 3 and the combination factors according to Table 4.

Table 1 — Partial factors for Ultimate Limit combinations

Permanent actions		Variable actions	
unfavourable	favourable	Leading variable action	Accompanying action
$\gamma_{G,i} = 1,35$	$\gamma_{G,i} = 1,00$	$\gamma_{Q,1} = 1,50$	$\gamma_{Q,i} = 1,50$

Table 2 — Partial factors for serviceability combinations

Permanent actions		Variable actions	
unfavourable	favourable	Leading variable action	Accompanying action
$\gamma_{G,i} = 1,00$	$\gamma_{G,i} = 1,00$	$\gamma_{Q,1} = 1,00$	$\gamma_{Q,i} = 1,00$