



# SLOVENSKI STANDARD

## SIST EN 1069-2:2017

01-oktober-2017

Nadomešča:  
SIST EN 1069-2:2010

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**Vodni tobogani - 2. del: Navodila**

Water slides - Part 2: Instructions

Wasserrutschen - Teil 2: Hinweise

Toboggans aquatiques - Partie 2: Instructions

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**ICS:**

97.220.40

Oprema za športe na  
prostem in vodne športe

Outdoor and water sports  
equipment

**SIST EN 1069-2:2017**

**en,fr,de**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 1069-2**

August 2017

ICS 97.220.40

Supersedes EN 1069-2:2010

English Version

**Water slides - Part 2: Instructions**

Toboggans aquatiques - Partie 2: Instructions

Wasserrutschen - Teil 2: Hinweise

This European Standard was approved by CEN on 14 May 2017.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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

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

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## European foreword

This document (EN 1069-2:2017) 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 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of an identical text or by endorsement, at the latest by February 2018, and conflicting national standards shall be withdrawn at the latest by February 2018.

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 1069-2:2010.

EN 1069, *Water slides*, consists of:

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

In relation to EN 1069-2:2010 the following main amendments have been made:

- a) the document has been editorially revised;
- b) a risk in 4.2 “Guidelines to the operational risk assessment” has been added;
- c) in 8.1.1 “Routine visual inspection” one additional requirement was included;
- d) in 8.2.2 “Inspection procedure” the relevant components for the test have been changed;
- e) the requirements for 8.2.3 “Periodical practical sliding test” have been changed;
- f) Figure A.5 “Minimum/Maximum height of the user” has been divided in a) minimum height, b) maximum height, c) maximum age and d) minimum age;
- g) in B.2.3 “Limits of the water slide – Use limits” a requirement to the basic information has been changed.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

**EN 1069-2:2017 (E)****Introduction**

The provision of water slide installations is increasing, also are the concerns over the number of injuries resulting from the use of water slides, many of which are of a serious nature.

Many of the injuries have resulted from foreseeable circumstances and, given proper knowledge and control, could have been prevented.

A standard or a code of practice for instructions and the operation of water slides is seen as the most appropriate way to achieve an improvement in safety.

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## 1 Scope

This European Standard is applicable to water slides as defined in EN 1069-1:2017, 3.3.

This European Standard establishes the instructions for use, operation and maintenance as well as the documentation and commissioning of water slides.

## 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 1069-1:2017, *Water slides — Part 1: Safety requirements and test methods*

EN 15288-1, *Swimming pools — Part 1: Safety requirements for design*

EN 15288-2:2008, *Swimming pools - Part 2: Safety requirements for operation*

EN ISO 3834 (all parts), *Quality requirements for fusion welding of metallic materials (ISO 3834)*

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

EN ISO 15607, *Specification and qualification of welding procedures for metallic materials - General rules (ISO 15607)*

ISO 3864-1, *Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs and safety markings*

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ISO 3864-3, *Graphical symbols — Safety colours and safety signs — Part 3: Design principles for graphical symbols for use in safety signs*

ISO 7001, *Graphical symbols — Public information symbols*

ISO 7010, *Graphical symbols — Safety colours and safety signs — Registered safety signs*

ISO 20712-1, *Water safety signs and beach safety flags — Part 1: Specifications for water safety signs used in workplaces and public areas*

ISO 20712-3:2014, *Water safety signs and beach safety flags — Part 3: Guidance for use*

ISO 22727, *Graphical symbols — Creation and design of public information symbols — Requirements*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1069-1:2017 and the following apply.

### 3.1

#### **operator**

company, organization, authority or person with overall control and responsibility for the water slide facility

**EN 1069-2:2017 (E)****3.2****platform**

area providing access to the start section

**3.3****raft**

type of ride enhancement device for one or more users

**4 Operation****4.1 General**

EN 15288-2 applies and EN 15288-1 shall be considered if appropriate. The following subclauses give specific advice related to water slides.

**4.2 Guidelines to the operational risk assessment**

An operational risk assessment shall be performed by the slide operator, based on the results of the design risk assessment, as a basis for the identification of the proper supervision, following the requirements of EN 15288-2. In addition, and referring to the fact that impact between the users proved to be a critical issue, also the following risks shall be taken into consideration:

- a) inappropriate spacing at the start between users;
- b) sliding position (e.g. sitting) can bring the user to an involuntary stop;
- c) significant differences in speed can cause collisions of users;
- d) significant differences in speed caused by:
  - 1) different sliding positions;
  - 2) different bathing costume respectively wearing hardly any bathing costume (e.g. G-string type);
  - 3) different fitness, size, weight and age of user;
  - 4) Stopping or changing water flow rate (malfunction of water supply);
- e) reasonably foreseeable risky behaviours by the users:
  - 1) higher risk of collision between users at a splashdown area in contrast to a catch unit;
- f) suitability for children;
- g) foreseeable users categories (e.g. adults, children, both) and number of users (e.g. chain sliding allowed);
- h) allowed use of ride enhancement devices (e.g. mattresses, rafts);
- i) Unauthorised access.

Examples of general and specific risk assessments are given in Annex B.



### 4.3 Risk reduction

The operator shall take measures to reduce possible risks to a minimum bearing in mind the risky behaviours of users by choosing an appropriate level of distance control and supervision and shall identify a risk reduction strategy from the following options:

- a) permanent full supervision by the staff at the start section and at the splashdown area/catch unit, staff is in communication with each other;
- b) adequate technical distance control, e.g. turnstiles at the entrance and/or exit area and/or a traffic light control at the entrance;
- c) a proper level of supervision/technical measures as a result of the risk assessment.

Additional safety equipment which may be used:

- d) For the user: The installation of a monitor at the start section that transmits the situation at the end of the slide and at the catch unit/splashdown area for the person who is starting to see whether the catch unit or the splashdown area of the pool is free.
- e) For the supervisory staff: The installation of a monitor at the staff terminal that transmits the situation at the start and the end of the slide and at the catch unit/splashdown area. The quality of technical distance control equipment depends on the risk assessment and should be carried out in accordance with EN ISO 13849-2.

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### 4.4 Basic elements for the identification of proper supervision

The operator, by performing the part of the risk assessment concerning proper supervision, shall take into account at least the following:

- a) kind of landing: [SIST EN 1069-2:2017  
https://standards.iteh.ai/catalog/standards/sist/7aa1842e-f86e-4525-aea5-98d501c12bbe/sist-en-1069-2-2017](https://standards.iteh.ai/catalog/standards/sist/7aa1842e-f86e-4525-aea5-98d501c12bbe/sist-en-1069-2-2017)
  - 1) catch unit;
  - 2) sofa unit;
  - 3) special pool and its water depth at landing;
  - 4) general purpose pool and its water depth at landing;
- b) speed at the final part;
- c) presence and kind of distance control:
  - 1) full technical distance control;
  - 2) traffic lights;
  - 3) other types;
- d) visibility for the user:
  - 1) slide fully visible from the start;
  - 2) catch unit visible from the start;
  - 3) pool visible from the start.

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The use of mandatory and prohibition signs and public information symbols should also be considered when determining the proper supervision to enforce them.

**4.5 Technical operation**

Written guidelines shall be produced concerning operational instructions by the operator paying particular attention to operational safety aspects (e.g. starting procedure, sliding speed of the users – see EN 1069-1:2017, 7.13).

These instructions shall comprise:

- detailed explanation of the controls and their function;
- recommended user access and egress procedures, exclusively allowed sliding positions and any limitations necessary to prevent static overload of the water slide;
- the prescribed limiting conditions stating any limitations for user, the limits of speed of operation, the sliding time and the maximum numbers of user to be carried;
- emergency evacuation procedures;
- any environmental limitations, e.g. conditions of wind, rain, snow during which the water slide shall not be operated;
- details of the maintenance service or repairs, qualification of the maintenance staff and specification about selection of proper spare parts.

**4.6 Emergency instructions**

Written guidelines for emergency situations shall be produced for competent staff by the operator in association with the statutory authorities.

**4.7 Incident logbook**

All incidents, including accidents, occurring with the use of a slide shall be recorded, monitored and analysed regularly to ensure that the necessary improvement of the design, operation or maintenance of the slide are made in order to prevent accidents as far as possible in future.

**5 Instructions for users****5.1 Planning and use of signage**

It is the responsibility of the manufacturer to define and notify/supply the proper signage at the time of commissioning. Based on the results of the risk assessment the operator shall identify and install any possible additional signage pertinent to the safe use and operation of the specific water slide. Where safety signs are required they shall be designed in accordance with ISO 3864-1 and ISO 3864-3, and safety signs from ISO 20712-1 and ISO 7010 used when applicable.

In addition to any relevant graphical symbols from ISO 20712-1, ISO 7010 and ISO 7001, a list of safety signs and information signs related to use of water slides is presented in Annex A. Relevant graphical symbols shall be assembled on multiple signs, see ISO 20712-3. Public information symbols shall be designed in accordance with ISO 22727 and public information symbols from ISO 7001 used when applicable.

A written supplementary text, in the language(s) of the country where the slide is installed shall be added possibly with translation into other language(s). The minimum supplementary text is shown below each graphical symbol (see figures in Annex A). The minimum text height of upper case letters shall be 15 mm.

New graphical symbols additional to those given in this standard shall be designed in accordance with ISO 3864-1 and ISO 3864-3 for safety signs, and ISO 22727 for public information symbols. The graphical symbols should be tested for comprehension according to ISO 9186-1. If the comprehension score does not meet the criteria for acceptance set for ISO 7010 or ISO 7001 as relevant, the graphical symbol shall be accompanied by supplementary text.

## 5.2 Signage at the entrance of a slide

The graphical symbols required to be included in the signage system shall include all those determined as a result of the risk assessment.

From slide Type 1.2 onwards minimum signage shall be clearly displayed at the entrance of the means of access and on the platform, complying with the template given in Figure 1.

In addition, where more than one slide starts from the same platform, specific information for each slide shall be displayed before entering its start section.

The following minimum required safety signs and public information symbols shall be displayed on the multiple sign:

- a) the severity of the ride, by using the designated information sign and using the following colour code:
  - 1) blue for easy (Types 2, 3, 6.1 where relevant);
  - 2) red for medium (Types 4, 6.2, 7, 8, 9 and 10 where relevant);
  - 3) black for severe (Types 5 and 10 where relevant);
- b) minimum height of the user and additionally for Types 1 and 2 maximum height of the user;
- c) height of fall landing, if > 200 mm;
- d) water depth in the splashdown area;
- e) instructions to clear quickly the landing area after the ride;
- f) the only mandatory sliding position or, if more than one position is allowed, the relevant information signs;
- g) the mandatory use of ride enhancement devices (e.g. single or multiple rafts, mattresses).

It is the responsibility of the manufacturer to define the above mentioned information and requirements to display them at the time of commissioning.

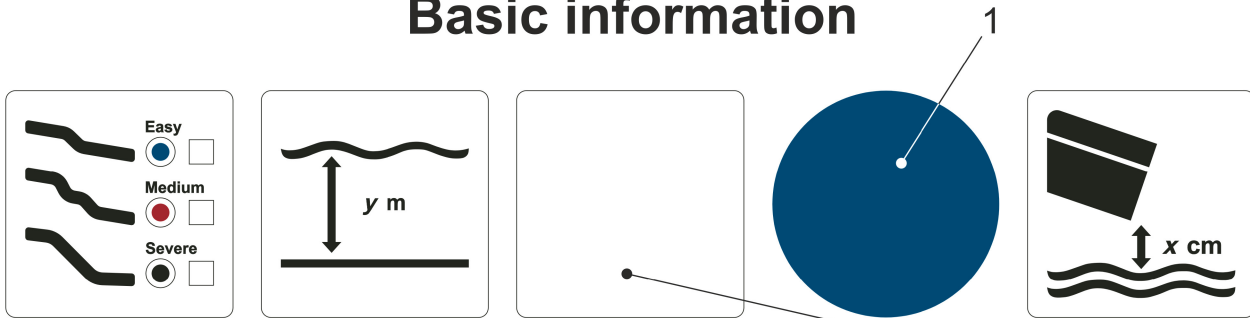
If a special feature has been incorporated in the design, e.g. the possibility of becoming involuntary airborne, special water/light/sound effects, then the user shall be warned at least prior to use the slide.

Conforming to the result of the operational risk assessment (see EN 15288-2) the operator may add, under his responsibility, more information/warnings/prohibitions/mandatory signs or alter those given by the manufacturer, except a), paying attention to the possibility to reach all users categories in the specific environment.

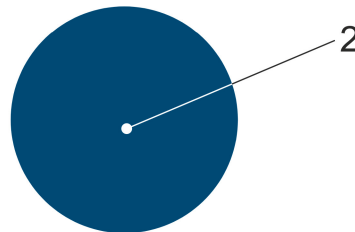
Figure 1 gives the template about how to combine the information that needs to be displayed, using the defined graphical symbols.

## Water slide

### Basic information



### Mandatory sliding position



#### Key

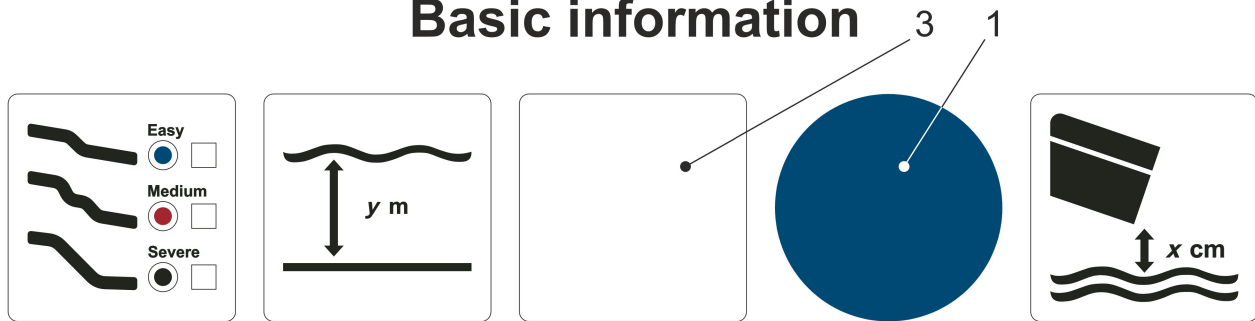
- 1 either Figure A.13 or Figure A.14 shall be inserted
- 2 one relevant figure of the mandatory sliding position shall be inserted (according to Figures A.17 to A.25) or any other new invented figure for a different sliding position
- 3 either Figure A.5a) and A.5b) and/or Figure A.5c) and A.5d)

**Figure 1 — Template of minimum signage to be displayed at the entrance of a slide with mandatory sliding position**

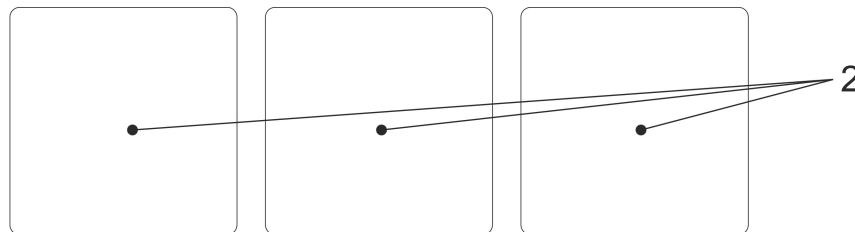
If more than one sliding position may be allowed at one water slide, change the heading into “Allowed sliding positions” and insert those signs which describe the positions in form of an information sign according to ISO 7001 (see Figure A.6 to Figure A.11). More than one mandatory action sign in this case is not allowed.

## Water slide

### Basic information



### Allowed sliding position



#### Key

- 1 either Figure A.13 or Figure A.14 shall be inserted
- 2 figure of two or more allowed sliding positions shall be inserted (according to Figures A.6 to A.11) or any other new invented figure for a different sliding position
- 3 either Figure A.5a) and A.5b) and/or Figure A.5c) and A.5d)

**Figure 2 — Template of minimum signage to be displayed at the entrance of a slide with allowed sliding positions**

It is advisable to show allowed and recommended behaviours instead of prohibited ones.

### 5.3 Additional user information

The instructions for use shall address possible additional hazards in accordance with the risk assessment, including e.g.:

- medical conditions of the users;
- jewellery and spectacles worn by the users;
- locker keys/bracelets worn by the users;
- voluntary stopping along the slide;
- possible misunderstanding of the displayed signs.

The information shall be given that young children up to the age of eight years should always be supervised by parents or responsible carers, see EN 15288-2:2008, 6.1.1.3.

For information to be effectively imparted to user's signs inside the changing areas or inside lockers may be used e.g. about removing jewellery and spectacles. Complex safety messages and vital information concerning the severity/difficulty of the water slide may also be given through video