

<b>STN</b>	<b>Vodné kízačky Časť 1: Bezpečnostné požiadavky a skúšobné metódy</b>	<b>STN EN 1069-1+A1</b>
		94 0910

Water slides - Part 1: Safety requirements and test methods

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

Táto norma bola označená vo Vestníku ÚNMS SR č. 11/19

Obsahuje: EN 1069-1:2017+A1:2019

Oznámením tejto normy sa ruší  
STN EN 1069-1 (94 0910) z februára 2018

**129491**

EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 1069-1:2017+A1**

June 2019

ICS 97.220.40

Supersedes EN 1069-1:2017

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 European Standard was approved by CEN on 14 May 2017 and includes Amendment 1 approved by CEN on 29 April 2019.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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.

CEN members are the national standards bodies of 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 United Kingdom.



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

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

## Contents

	Page
<b>European foreword.....</b>	<b>5</b>
<b>Introduction .....</b>	<b>6</b>
<b>1 Scope.....</b>	<b>7</b>
<b>2 Normative references.....</b>	<b>7</b>
<b>3 Terms and definitions .....</b>	<b>8</b>
<b>4 Classification.....</b>	<b>11</b>
<b>4.1 Type 1.....</b>	<b>11</b>
<b>4.1.1 Type 1.1 .....</b>	<b>11</b>
<b>4.1.2 Type 1.2 .....</b>	<b>11</b>
<b>4.2 Type 2 .....</b>	<b>11</b>
<b>4.2.1 Type 2.1 .....</b>	<b>11</b>
<b>4.2.2 Type 2.2 .....</b>	<b>11</b>
<b>4.3 Type 3 .....</b>	<b>11</b>
<b>4.4 Type 4 .....</b>	<b>12</b>
<b>4.5 Type 5 .....</b>	<b>12</b>
<b>4.6 Type 6 .....</b>	<b>12</b>
<b>4.6.1 Type 6.1 .....</b>	<b>12</b>
<b>4.6.2 Type 6.2 .....</b>	<b>12</b>
<b>4.7 Type 7 .....</b>	<b>12</b>
<b>4.8 Type 8 .....</b>	<b>12</b>
<b>4.9 Type 9 .....</b>	<b>12</b>
<b>4.10 Type 10 .....</b>	<b>12</b>
<b>5 Materials and construction.....</b>	<b>13</b>
<b>5.1 General.....</b>	<b>13</b>
<b>5.2 Selection of materials .....</b>	<b>13</b>
<b>5.3 Certificates.....</b>	<b>13</b>
<b>5.4 Manufacturer and installer.....</b>	<b>13</b>
<b>5.5 Durability.....</b>	<b>13</b>
<b>5.6 Electrical installations.....</b>	<b>13</b>
<b>6 Design .....</b>	<b>14</b>
<b>6.1 Design guidelines .....</b>	<b>14</b>
<b>6.2 Design analysis.....</b>	<b>14</b>
<b>6.2.1 General.....</b>	<b>14</b>
<b>6.2.2 Preliminary risk analysis .....</b>	<b>14</b>
<b>6.2.3 Construction documents.....</b>	<b>15</b>
<b>6.3 Static calculations .....</b>	<b>15</b>
<b>6.3.1 General.....</b>	<b>15</b>
<b>6.3.2 Actions in the slide area.....</b>	<b>16</b>
<b>6.3.3 Actions on Access, Platforms and Railings.....</b>	<b>20</b>
<b>6.3.4 Combination of actions and verification.....</b>	<b>20</b>
<b>7 Safety requirements for water slides.....</b>	<b>21</b>
<b>7.1 General.....</b>	<b>21</b>

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.....	22
7.5.3	Stepladders .....	22
7.5.4	Platform .....	22
7.5.5	Protection against falling.....	22
7.5.6	Slip resistance .....	24
7.6	Start section for Types 2 to 10 .....	24
7.7	Slide proper .....	25
7.7.1	General .....	25
7.7.2	Sliding path .....	25
7.7.3	Maximum acceleration on a sliding person .....	25
7.8	Tubes and covered sections.....	25
7.9	Final part.....	25
7.9.1	General .....	25
7.9.2	Landing device/Landing area.....	26
7.10	Splashdown areas.....	27
7.11	Accessories.....	27
7.11.1	Covers.....	27
7.11.2	Ride enhancement devices.....	27
7.11.3	Other constituent parts .....	28
7.12	Water supply .....	29
7.12.1	General .....	29
7.12.2	Water flow rate.....	30
7.13	Interference between users.....	30
7.14	Interference between users and non-users .....	30
8	Additional safety requirements for Types 1 to 10.....	31
8.1	Slide proper .....	31
8.1.1	Type 1.....	31
8.1.2	Type 2.....	31
8.1.3	Type 3.....	33
8.1.4	Type 4.....	33
8.1.5	Type 5.....	33
8.1.6	Type 6.....	34
8.1.7	Type 7.....	34
8.1.8	Type 8.....	35
8.1.9	Type 9.....	35
8.1.10	Type 10 .....	35
8.2	Splashdown area.....	35
8.2.1	Acceleration.....	35
8.2.2	General and specific pools .....	35
8.2.3	Requirements for landing.....	36
8.3	Clearance zones.....	38
9	Check and test runs.....	39
9.1	General .....	39
9.2	Technical and physical checks .....	39
9.3	Practical test.....	39

**EN 1069-1:2017+A1:2019 (E)**

<b>9.3.1 General.....</b>	<b>39</b>
<b>9.3.2 Slide tester .....</b>	<b>39</b>
<b>9.3.3 Sliding conditions.....</b>	<b>39</b>
<b>9.3.4 Acceleration and speed measurements.....</b>	<b>40</b>
<b>9.4 Test report.....</b>	<b>40</b>
<b>10 Designation and marking.....</b>	<b>41</b>
<b>10.1 Designation.....</b>	<b>41</b>
<b>10.2 Marking.....</b>	<b>41</b>
<b>Annex A (normative) Splashdown areas.....</b>	<b>42</b>
<b>Annex B (normative) Use of stainless steels for water slides .....</b>	<b>49</b>
<b>B.1 General.....</b>	<b>49</b>
<b>B.2 Indoor swimming pools with disinfection with chlorine .....</b>	<b>49</b>
<b>B.2.1 General.....</b>	<b>49</b>
<b>B.2.2 Materials without regular cleaning.....</b>	<b>49</b>
<b>B.2.3 Materials with regular cleaning.....</b>	<b>50</b>
<b>B.2.3.1 General.....</b>	<b>50</b>
<b>B.2.3.2 Cleaning concept.....</b>	<b>50</b>
<b>B.2.3.3 Execution of the regular cleaning.....</b>	<b>50</b>
<b>B.2.3.4 Regular inspection.....</b>	<b>50</b>
<b>B.2.4 Outdoor swimming pools with disinfection with chlorine .....</b>	<b>50</b>
<b>B.3 Coatings and paintings .....</b>	<b>51</b>
<b>Annex C (normative) Design loads, accesses and platforms.....</b>	<b>52</b>
<b>C.1 Vertical imposed loads.....</b>	<b>52</b>
<b>C.2 Horizontal imposed loads .....</b>	<b>52</b>
<b>C.3 Stiffness.....</b>	<b>53</b>
<b>C.4 Stairs .....</b>	<b>53</b>
<b>Annex D (informative) Acceleration and speed measurements .....</b>	<b>55</b>
<b>D.1 Test devices.....</b>	<b>55</b>
<b>D.1.1 General.....</b>	<b>55</b>
<b>D.1.2 Acceleration measuring device .....</b>	<b>55</b>
<b>D.1.3 Maximum speed measuring device .....</b>	<b>55</b>
<b>D.2 Description of the acceleration test method .....</b>	<b>55</b>
<b>Bibliography.....</b>	<b>56</b>

## European foreword

This document (EN 1069-1:2017+A1:2019) 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 December 2019, and conflicting national standards shall be withdrawn at the latest by December 2019.

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 includes Amendment 1 approved by CEN on 2019-03-29.

This document supersedes **[A1]** EN 1069-1:2017 **[A1]**.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **[A1]** **[A1]**.

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

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

**[A1]** *deleted text* **[A1]**

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.

## 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 European Standard is applicable to all water slides installed in swimming pools of public use.

This Standard specifies general safety requirements for water slides in swimming pools of public use 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

**[A1]** 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. **[A1]**

EN 1069-2:2017, *Water slides — Part 2: Instructions*

EN 1990, *Eurocode - Basis of structural design*

EN 1991-1-1, *Eurocode 1: Actions on structures - Part 1-1: General actions - Densities, self-weight, imposed loads for buildings*

EN 1991-1-3:2003, *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 13451-1:2011+A1:2016, *Swimming pool equipment - Part 1: General safety requirements and test methods*

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*

EN 15288-1:2008+A1:2010, *Swimming pools - Part 1: Safety requirements for design*

EN 15288-2, *Swimming pools - 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 1069-1:2017+A1:2019 (E)**

EN ISO 13857:2008, *Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857:2008)*

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

koniec náhľadu – text d'alej pokračuje v platenej verzii STN