DIN EN 1069-1:2019-11 (E)

Water slides - Part 1: Safety requirements and test methods (includes Amendment A1:2019)

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
4.2.2 Type 2.2 11
4.3 Type 3 11
4.4 Type 4 12
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 Type 8 12
4.9 Type 9 12
4.10 Type 10 12

5 Materials and construction 13
5.1 General 13
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 14
6.1 Design guidelines 14
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 21
7.1 General 21
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
9.3.1 General 39
9.3.2 Slide tester 39
9.3.3 Sliding conditions 39
9.3.4 Acceleration and speed measurements 40
9.4 Test report 40

10 Designation and marking 41
10.1 Designation 41
10.2 Marking 41

Annex A (normative) Splashdown areas 42

Annex B (normative) Use of stainless steels for water slides 49

B.1 General 49
B.2 Indoor swimming pools with disinfection with chlorine 49
B.2.1 General 49
B.2.2 Materials without regular cleaning 49
B.2.3 Materials with regular cleaning 50
B.2.3.1 General 50
B.2.3.2 Cleaning concept 50
B.2.3.3 Execution of the regular cleaning 50
B.2.3.4 Regular inspection 50
B.2.4 Outdoor swimming pools with disinfection with chlorine 50
B.3 Coatings and paintings 51

Annex C (normative) Design loads, accesses and platforms 52

C.1 Vertical imposed loads 52
C.2 Horizontal imposed loads 52
C.3 Stiffness 53
C.4 Stairs 53

Annex D (informative) Acceleration and speed measurements 55

D.1 Test devices 55
D.1.1 General 55
D.1.2 Acceleration measuring device 55
D.1.3 Maximum speed measuring device 55
D.2 Description of the acceleration test method 55

Bibliography 56