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Swimming pools for public use - Part 1: Safety requirements for design

Schwimmbäder - Teil 1: Sicherheitstechnische Anforderungen an Planung und Bau

Piscines à usage public - Partie 1 : Exigences de sécurité pour la conception

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English Version

Swimming pools for public use - Part 1: Safety requirements for design

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This European Standard was approved by CEN on 10 September 2018.

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

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European foreword

This document (EN 15288-1:2018) 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of an identical text or by endorsement, at the latest by June 2019, and conflicting national standards shall be withdrawn at the latest by June 2019.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 15288-1:2008+A1:2010.

In relation to EN 15288-1:2008+A1:2010 the following main amendments have been made:

a) introduction has been revised;

b) scope has been revised by excluding EN 16582 by noting, that National and/or local legislation and instructions may apply;

c) normative references have been updated;

d) definition "Indoor swimming pools" has been revised;

e) definition of private use has been deleted;

f) definition "ramp" has been added;

g) definition "therapeutic pool" has been revised;

h) definition "Finnish overflow" has been deleted;

i) definition "rest ledge" has been revised;

j) definition "bather" has been revised;

k) definition "bund" has been added;

l) definition "reverberation time" has been added;

m) definition "sound pressure level" has been added;

n) definition "freeboard" has been added;

o) classification Type 3 pools has been revised by excluding private use pools;

p) new clause "Occupancy" has been added;

q) water depth for the Depth indications where the pool floor profile changes abruptly has been changed;

r) new clause "safety of barefoot" area has been added by adding requirements for the finish of the wet area and the slip resistance;

s) requirements for steps and ramps have been revised;

t) requirements for lighting, illumination and glare prevention have been revised;

u) acoustic requirements have been revised;

v) recommendation for a certain number of means of access around the pool basin has been added;

w) additional requirements for wave pools have been added;

x) clause "Plant rooms and related equipment" has been revised;

y) new clause "Pool water distribution effectiveness" has been added to this standard and it has been revised;

z) Annex A "Dye test" has been moved from EN 15288-2 to EN 15288-1 and it has also been revised;

aa) wording aligned with EN 15288-2;

bb) Bibliography has been updated.

This standard series EN 15288 "*Swimming pools for public use*" consists of the following parts:

— *Part 1: Safety requirements for design*

— *Part 2: Safety requirements for operation*

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

Design is a key factor for a safe swimming pool. All of those involved in designing new pools or upgrading existing ones will need to give the highest priority to ensuring that they provide users and staff with a safe facility. Four steps need to be developed in order to achieve this:

a) the layout of the pool hall (if any) and the pool basin (including its dimensions, profile and any water features) should be designed to make the safe use and supervision of the pool achievable without complex or costly management arrangements;

b) the layout of the ancillary areas, including changing areas, clothes storage, shower and toilet areas, the plant room and chemical stores should be similarly designed for safe use;

c) the structural elements, materials, finishes and details, including the pool hall enclosure (if any), pool basin and equipment and the way they are assembled should be the most appropriate to achieving a safe-to-use physical environment;

d) relevant planning criteria for safe and functionally correct maintenance.

There are specific sources of information from which the technical design and planning standards recommended in the design of swimming pools can be obtained. Those involved in the process of specifying, designing and constructing pools should be familiar with these design and planning standards and should ensure that they are given careful consideration in all pool projects.

It is also important to draw the attention of those involved in the design process to the implications of their work for the pool operator. What might be thought of as a small change in the layout of the pool or in the finishes specified could have a significant impact on the ability of the pool to be used safely. If that change is ill-considered and creates a serious design flaw, the result might be an increase in accidents. More likely, it will be an increase in the cost of operating the pool (perhaps through the employment of additional staff) to compensate for the resulting problems.

One way of anticipating the management consequences of design decisions is to include a qualified/competent pool operational person on the design team. This person should give advice and guidance during the various development stages of the project.

This standard includes requirements, recommendations and notes. While compliance with requirements is mandatory to fulfil this standard, recommendations indicate best practices and notes give additional information and/or explanations.

1 Scope

This document specifies safety requirements relevant to certain aspects of the design and construction of classified pools according to Clause 4. It is intended for those concerned with the design, construction, planning and operation of classified swimming pools. It provides guidance about the risks associated by identifying the design characteristics required for a safe environment.

The requirements of this document are applicable to all new classified pools and, as appropriate, to specific refurbishments of classified existing pools.

This document has limited application to classified pools which consist of segregated areas of rivers, lakes or the sea but this document should be followed where relevant.

National and/or local legislation may apply.

This document is not applicable to domestic swimming pools according to EN 16582 (all parts). Further definitions of domestic swimming pools and/or use are given in EN 16582.

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.

EN 1838, *Lighting applications — Emergency lighting*

EN 12193, *Light and lighting — Sports lighting*

EN 13451-1, *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 8: Additional specific safety requirements and test methods for leisure water features*

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

HD 60364-7-702, *Low-voltage electrical installations — Part 7-702: Requirements for special installations or locations — Swimming pools and fountains*

EN 60849, *Sound systems for emergency purposes (IEC 60849)*

3 Terms and definitions

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

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

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
pool/swimming pool
facility, with one or more water areas, intended for swimming, leisure or other water based physical activities

3.2
indoor swimming pool
one or more constructed water areas for bathing enclosed in a building, covered by a roof (fixed or moveable)

Note 1 to entry: A pool under a shelter is not considered an indoor swimming pool.

3.3
outdoor swimming pool
one or more constructed open-air water areas for bathing

3.4
ramp
inclined plane installed in addition to or instead of steps

3.5
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

3.6
therapeutic pool
one or more constructed water areas specifically designed to provide medical and physical care under control of a competent person

Note 1 to entry: Pools designed for fitness and related activities are not considered therapeutic pools.

3.7
pool basin
water tank where water-related activities can take place

3.8
pool surround
walkable area around a pool basin, associated with the use of the pool basin itself

EXAMPLE Circulation areas, areas of entry and exit, etc.

Note 1 to entry: The walkable pool surround can include overflow grids.

3.9
deck level pool basin
pool basin with the water level at a similar level as the pool surround

3.10
built-in step/ladder
step/ladder which is integral to the pool basin construction

3.11
rest ledge
submerged step for users to rest on in standing position

3.12
control point
designated space or room placed at pool basin deck level or higher, designed to allow control of the water leisure features and overview of water areas and pool surrounds

Note 1 to entry: Depending on the complexity, size, shape of pools and surrounding areas, there are more than one control points necessary.

3.13
bather
barefoot person in a bathing costume, or in comparable conditions

3.14
bund
containment devices or structures designed to control spillages, permanent, portable or built into equipment

EXAMPLES Drip trays, double-skinned tanks, etc.

3.15
reverberation time
RT
time, in seconds, that would be required for the sound pressure level to decrease by 60 dB after the sound source has stopped

3.16
sound pressure level
SPL
technical value and logarithmic measure (dB) to describe the loudness of sound

3.17
freeboard
vertical distance between the water surface and the pool deck level

3.18
first aid
medical, organizational and supportive measures for sick or injured persons with simple means including the emergency call

4 Classification

4.1 Swimming pool type 1

Pool where the water-related activities are the main business (e.g. communal pools, leisure pools, water parks) and whose use is “public” according to 3.5.

4.2 Swimming pool type 2

Pool which is an additional service to the main business (e.g. hotel pools, campsite pools, club pools, therapeutic pools, school pools) and whose use is “public” according to 3.5.

4.3 Swimming pool type 3

All pools of public use according to 3.5 except:

— pools type 1;

— pools type 2.

EXAMPLES Diving tower, military training pools, rescue training pools, scuba diving pools.

5 Safety related design factors and requirements

5.1 General

The requirements of Clause 5 refer to pools which are intended for public use within a classification defined in Clause 4.

The optional application of requirements to specific types is explained in the related paragraphs. The requirements apply as far as the selected items are present in the swimming pool.

As safe operation is influenced by safe design, the design shall take into account the facility's use, the activity, planned occupancy and its control. Where minimum requirements are given for different types, the designer shall consider the kind of activity foreseen. If it is more similar to those of another type, it should adhere to the strictest requirements.

As swimming and water-related activities carry an inherent risk (e.g. users have bare feet and wear only bathing costumes), the need for specific design requirements shall always be considered.

Facilities designed to meet specific needs or programmes (e.g. competitions, special activities, events) require special consideration.

Also at the design stage, the needs of the following shall be considered:

a) special users (e.g. with disabilities);

b) special installations (e.g. technologies to detect users in a potential risk of drowning, video supervision of pool surrounds and/or other areas).

All electrical installations shall be designed and installed in accordance with HD 60364-7-702.

It may be necessary to tighten the construction tolerances of the structure and finishes within the pool basin to meet the tolerances set out within this European Standard.

The requirements of standards for swimming pools for public use (e.g. EN 13451 (all parts), EN 1069, etc.) and standards for products "chemicals used for treatment of swimming pool water" (e.g. EN 15363) also apply.

5.2 Occupancy

The maximum occupancy rate at any one time shall be defined at the design stage taking into account:

a) the number of users in the water-related areas/activities, and

b) the number of users generated by other areas/activities.

In addition to considerations of physical safety, the relation between maximum design loading and the capacity of the pool water treatment plant shall be considered. To ensure this maximum design loading is not exceeded, a control mechanism should be provided, such as locker systems, bands, keys or turnstiles including admission control at the point of entry to the pool facility.