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Swimming pool equipment - Part 1: General safety requirements and test methods for equipment installed in pools for public use

Schwimmbadgeräte - Teil 1: Allgemeine sicherheitstechnische Anforderungen und Prüfverfahren für in öffentlichen Schwimmbädern installierte Schwimmbadgeräte

Équipement de piscine - Partie 1 : Exigences générales de sécurité et méthodes d'essai pour les équipements installés dans des piscines à usage public

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This European Standard was approved by CEN on 1 September 2020 and includes Amendment 1 approved by CEN on 14 July 2024.

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European foreword

This document (EN 13451-1:2020+A1:2024) 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of an identical text or by endorsement, at the latest by February 2025, and conflicting national standards shall be withdrawn at the latest by February 2025.

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 A1 EN 13451-1:2020 A1.

This document includes Amendment 1 approved by CEN on 14 July 2024.

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

Compared to EN 13451-1:2011+A1:2016, the following changes have been made:

a) definition “swimming pool equipment” revised;

b) term “public use” added;

c) requirements for structural integrity specified;

d) material selection, in particular steel, aligned with EUROCODE and former Annex F deleted;

e) requirements for safety barriers revised;

f) requirements for protrusions and their test methods revised;

g) requirements for fittings specified;

A1 *deleted text* A1

h) editorial revision of the standard.

EN 13451, *Swimming pool equipment*, consists of the following parts:

— *Part 1: General safety requirements and test methods for equipment installed in pools for public use*;

— *Part 2: Additional specific safety requirements and test methods for ladders, stepladders and handle bends*;

— *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*;

— *Part 4: Additional specific safety requirements and test methods for starting platforms*;

— *Part 5: Additional specific safety requirements and test methods for lane lines and dividing line*;

— *Part 6: Additional specific safety requirements and test methods for turning boards*;

— *Part 7: Additional specific safety requirements and test methods for water polo goals*;

— *Part 10: Additional specific safety requirements and test methods for diving platforms, diving springboards and associated equipment*;

— *Part 11: Additional specific safety requirements and test methods for moveable pool floors and moveable bulkheads*.

〚A1〛 Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website. 〚/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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Introduction

This document could also be applicable to other equipment installed in pools for public use not specified in Parts 2 to 11, provided the safety requirements are fulfilled.

There can be additional requirements for purposes such as competition swimming and advice should be sought from the governing body of the sport in question.

1 Scope

This document specifies general safety requirements and test methods for equipment installed in swimming pools for public use as classified in EN 15288-1 and EN 15288-2.

Where specific standards exist, this general standard is not expected to be used alone.

Special care is expected to be taken in applying this general standard alone to equipment for which no product specific standard has yet been published.

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 1990, *Eurocode — Basis of structural design*

EN 1991-1-2, *Eurocode 1: Actions on structures — Part 1-2: General actions — Actions on structures exposed to fire*

EN 1991-1-3, *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 1991-1-5, *Eurocode 1: Actions on structures — Part 1-5: General actions — Thermal actions*

EN 1993-1-4, *Eurocode 3 — Design of steel structures — Part 1-4: General rules — Supplementary rules for stainless steels*

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

〚A1〛 EN 16165:2021, *Determination of slip resistance of pedestrian surfaces — Methods of evaluation* 〚A1〛

EN ISO 12100, *Safety of machinery — General principles for design — Risk assessment and risk reduction (ISO 12100)*

ISO 5725-2, *Accuracy (trueness and precision) of measurement methods and results — Part 2: Basic method for the determination of repeatability and reproducibility of a standard measurement method*

ISO 5725-5, *Accuracy (trueness and precision) of measurement methods and results — Part 5: Alternative methods for the determination of the precision of a standard measurement method*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 15288-1 and the following apply.

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

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

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

3.1
swimming pool equipment
item in and/or around a pool basin, accessible by users of the swimming pool, designated:

— to operate the pool basin and its functionally adjoining areas; and/or

— to use the pool basin and its functionally adjoining areas

Note 1 to entry: These items can be part of the swimming pool technology (e.g. water inlets or outlets), to assist the users (e.g. ladders), or for competitive and training use (e.g. starting platforms), or for leisure (e.g. fountains).

3.2
crushing hazard
place where parts of the equipment can move against each other, or against a fixed area so that persons, or parts of their body, can be crushed

[SOURCE: EN 1176-1:2017, 3.11]

3.3
shearing point
place where part of the equipment can move past a fixed or other moving part, or past a fixed area so that persons, or parts of their body, can be cut

[SOURCE: EN 1176-1:2017, 3.12]

3.4
grip
holding of the hand round the entire circumference of a support

Note 1 to entry: See Figure 1.

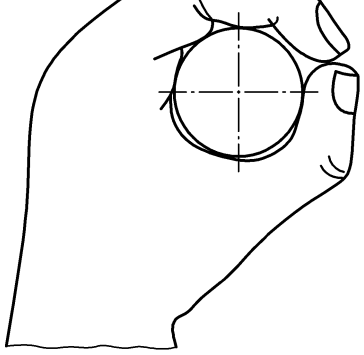

Figure 1 — Grip

[SOURCE: EN 1176-1:2017, 3.16]

3.5
grasp
holding of the hand round part of the circumference of a support

Note 1 to entry: See Figure 2.

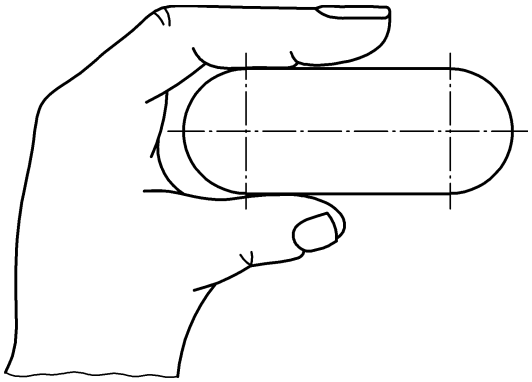

Figure 2 — Grasp

[SOURCE: EN 1176-1:2017, 3.17]

3.6
finger hold
holding which is found with hand, at least with the finger head by hooking in

3.7
entrapment
hazard presented by the situation in which a body, or part of a body, the hair or clothing can become trapped

Note 1 to entry: Entrapment hazard can arise from situations where the body, its parts, etc. get trapped, but also from situations where the body of the user has no complete freedom to emerge from the water, e.g. when swimming underneath a stepladder.

3.8
edge
line being formed by two surfaces of something solid which meet one another

3.9
corner
point being formed by two or more edges which meet one another

3.10
minimum space
smallest space required for the safe installation and use of the equipment

3.11
minimum zone for use
minimum space required for anyone who could come into contact with equipment