



SLOVENSKI STANDARD

SIST EN 13451-5:2014

01-oktober-2014

Nadomešča:
SIST EN 13451-5:2002

Oprema za plavalne bazene - 5. del: Dodatne posebne varnostne zahteve in preskusne metode za plavalne in ločene proge

Swimming pool equipment - Part 5: Additional specific safety requirements and test methods for lane lines and dividing line

Schwimmbadgeräte - Teil 5: Zusätzliche besondere sicherheitstechnische Anforderungen und Prüfverfahren für Schwimmbahnleinen und Trennseilanlagen
(standards.iteh.ai)

Équipement de piscine - Partie 5: Exigences de sécurité et méthodes d'essai complémentaires spécifiques aux lignes de nage et lignes d'eau de séparation des espaces
c8fd5fd24e/sist-en-13451-5-2014

Ta slovenski standard je istoveten z: EN 13451-5:2014

ICS:

97.220.10 Športni objekti Sports facilities

SIST EN 13451-5:2014 en,fr,de

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 13451-5:2014

<https://standards.iteh.ai/catalog/standards/sist/95662847-fe87-4870-b737-c8fd5fd24e/sist-en-13451-5-2014>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 13451-5

August 2014

ICS 97.220.10

Supersedes EN 13451-5:2001

English Version

Swimming pool equipment - Part 5: Additional specific safety requirements and test methods for lane lines and dividing line

Équipement de piscine - Partie 5: Exigences de sécurité et méthodes d'essai complémentaires spécifiques aux lignes de nage et lignes d'eau de séparation des espaces

Schwimmbadgeräte - Teil 5: Zusätzliche besondere sicherheitstechnische Anforderungen und Prüfverfahren für Schwimmbahnlinien und Trennseilanlagen

This European Standard was approved by CEN on 28 June 2014.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

[SIST EN 13451-5:2014](https://standards.iteh.ai/catalog/standards/sist/95662847-fe87-4870-b737-c8fd5fd24e/sist-en-13451-5-2014)

<https://standards.iteh.ai/catalog/standards/sist/95662847-fe87-4870-b737-c8fd5fd24e/sist-en-13451-5-2014>



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

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

Contents	Page
Foreword.....	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	4
4 Lane lines	4
4.1 Safety requirements	4
4.1.1 Design	4
4.1.2 Structural integrity	4
4.1.3 Tensioning device	4
4.1.4 Safety link	5
4.1.5 Entrapment	5
4.1.6 Crushing	5
4.1.7 Buoyancy	5
4.1.8 Safe operation	5
4.2 Test methods	5
5 Dividing lines	5
5.1 General	5
5.2 Forms	5
5.3 Safety requirements	6
5.3.1 General	6
5.3.2 Dividing rope	6
5.3.3 Dividing rope holders	6
5.3.4 Tensioning devices	6
5.4 Test method	6
5.4.1 General	6
5.4.2 Testing of dividing ropes	6
5.4.3 Testing of dividing rope holders	6
5.5 Marking	6
Bibliography	7

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 13451-5:2014

<https://standards.iteh.ai/catalog/standards/sist/95662847-1e87-4870-b737-c81ddd51d24e/sist-en-13451-5-2014>

Foreword

This document (EN 13451-5:2014) 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 2015 and conflicting national standards shall be withdrawn at the latest by February 2015.

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 13451-5:2001.

In relation to EN 13451-5:2001, the following main changes have been made:

- a) the title has been extended by adding dividing lines;
- b) the Scope has been extended by adding dividing lines;
- c) the Scope has been updated by referring to EN 15288-1 and EN 15288-2;
- d) Safety requirements and test methods for dividing lines have been added;
- e) Annex A has been deleted.

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

- *Part 1: General safety requirements and test methods;*
- *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;*
- *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.*

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

EN 13451-5:2014 (E)

1 Scope

This European Standard specifies safety requirements for lane lines and dividing line in addition to the general safety requirements of EN 13451-1:2011 and should be read in conjunction within it.

The requirements of this specific standard take priority over those in EN 13451-1:2011.

This part of EN 13451 is applicable to manufactured lane lines for use in competition and training and dividing line for use in classified swimming pools as specified in EN 15288-1 and EN 15288-2.

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 12385-1, *Steel wire ropes — Safety — Part 1: General requirements*

EN 13451-1:2011, *Swimming pool equipment - Part 1: General safety requirements and test methods*

EN ISO 2307, *Fibre ropes - Determination of certain physical and mechanical properties (ISO 2307)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13451-1:2011 and the following apply.

3.1

lane line

linear floating device that divides the water surface into areas to mark swimming lanes

3.2

dividing line

device located on the water surface that divides the water surface into different areas

4 Lane lines

4.1 Safety requirements

4.1.1 Design

Lane lines shall extend over the full length of the swimming lane.

Where floats are fitted, they shall extend over the full length as an unbroken series without gaps.

NOTE Dimensional requirements for competitive use, stipulated by the governing body FINA (Fédération Internationale Natation Amateur), are given in [1] for information.

4.1.2 Structural integrity

The lane line, its fixings and the tensioning device shall withstand a tensile force of 15 kN.

4.1.3 Tensioning device

A device shall be fitted to tension the lane line after mounting in such a way that it maintains a straight position.

4.1.4 Safety link

A safety link designed to break at a force of $(7,5 \pm 1,2)$ kN shall be fitted on each lane line.

4.1.5 Entrapment

The dimension of any variable opening shall comply with the requirements in accordance with EN 13451-1:2011, 4.7.

4.1.6 Crushing

If floats are used, a device (e.g. a spring) shall be fitted to maintain their continuity without gaps.

Parallel front surfaces of two adjacent floats should be avoided.

4.1.7 Buoyancy

The lane lines shall have a positive buoyancy in such a way that at least one half to maximum two thirds of the height of the device float above the water surface.

4.1.8 Safe operation

The lane lines, the tensioning device and the fixings shall be designed in such a way that a self-loosening action is not possible.

4.2 Test methods

The requirements of 4.1 shall be verified by the most appropriate method: measurement, visual examination or practical tests.

5 Dividing lines

5.1 General

A lane line according to Clause 4 may be used as dividing line. In this case the requirements given in Clause 4 are applicable.

A dividing line assembly consists of a rope, two rope holders and a tensioning device.

5.2 Forms

The following forms exist:

- Form A: plastic rope;
- Form B: steel wire rope made of coated steel wire;
- Form C: steel wire rope made of coated steel wire provided with floats or floating markers (plastic balls, small flags, signs);
- Form D: semi-rigid hose.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 13451-5:2014

<https://standards.iteh.ai/catalog/standards/sist/95662847-fe87-4870-b737-c8fd5fd24e/sist-en-13451-5-2014>

EN 13451-5:2014 (E)

5.3 Safety requirements

5.3.1 General

When being used or assembled, all accessible edges of the dividing ropes shall be rounded to a radius of not less than 1 mm.

5.3.2 Dividing rope

Dividing lines shall have a thickness of at least 20 mm (excluding any floats). The breaking force shall be not less than 20 000 N.

The elongation of the dividing line shall not exceed 2,5 ‰.

Dividing lines shall be able to float or shall be provided with floats having a diameter of $d \geq 80$ mm.

Markers having the shape of plastic ball shall have a diameter of $d \geq 80$ mm.

Wire ropes shall be provided with a coating having a thickness of at least 1 mm.

The rope surface, the floats and the markers shall be in a colour that contrasts with the water.

5.3.3 Dividing rope holders

Both rope holders shall each withstand a stress parallel to the water surface of 20 000 N without undergoing permanent deformation.

The dividing rope holders shall not constitute a tripping hazard in the pool surround or at the pool edge.

5.3.4 Tensioning devices

Accessible openings of turnbuckles shall not exceed 8 mm.

5.4 Test method

5.4.1 General

Unless otherwise specified in 5.4.2 and 5.4.3, compliance with the requirements specified in 5.3 is verified, for example, by measurement and inspection.

5.4.2 Testing of dividing ropes

The breaking force and elongation of steel wire ropes (form B and form C) are tested in accordance with EN 12385-1 and that of form A and form D in accordance with EN ISO 2307.

5.4.3 Testing of dividing rope holders

The rope holder is installed or firmly clamped as befits the design of the casing, after which a quasi-static tensile load of 20 000 N is applied horizontally for 10 s in the direction of the dividing line. There shall be no visible deformation after the load is removed.

5.5 Marking

Dividing lines shall be clearly marked with the name or the sign of the manufacturer, supplier or importer.

At his own responsibility, the manufacturer may refer to EN 13451-5 to prove compliance of the dividing lines with this standard.