



SLOVENSKI STANDARD SIST EN 14504:2004

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Inland navigation vessels - Floating landing stages - Requirements, tests

Fahrzeuge der Binnenschifffahrt - Schwimmende Anlegestellen - Anforderungen, Prüfungen

Bateaux de navigation intérieure - Embarcaderos flottants - Exigences, essais

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ICS:

47.060	R`:\`ā` Á^ } ā] [çāē	Inland navigation vessels
93.140	Õ ā} ā[ā} ā[[cāē] ā cā ā	Construction of waterways and ports

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EUROPEAN STANDARD

EN 14504

NORME EUROPÉENNE

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English version

Inland navigation vessels - Floating landing stages - Requirements, tests

Bateaux de navigation intérieure - Embarcadères flottants -
Exigences, essais

Fahrzeuge der Binnenschifffahrt - Schwimmende
Anlegestellen - Anforderungen, Prüfungen

This European Standard was approved by CEN on 2 January 2004.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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

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EN 14504:2004 (E)**Foreword**

This document EN 14504:2004 has been prepared by Technical Committee CEN/TC 15 "Inland navigation vessels", 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 September 2004, and conflicting national standards shall be withdrawn at the latest by September 2004.

The following have been used as the basis for the draft:

- CIPA Regulation 14;
- the "Merkblatt Schwimmende Landebrücken. BMVBW, 1994 (DE)".

Annex A is normative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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1 Scope

This European Standard specifies safety requirements for floating landing stages and their equipment.

It is not applicable to:

- bank structures such as quay walls, sheeting walls, piles and dolphins;
- floating landing stages for recreational craft;
- more severe requirements for floating landing stages used for the transshipment of dangerous goods;
- any landing stages required between vessel and floating landing stage.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 711, *Inland navigation vessels – Railings for decks – Requirements, types.*

EN 13281, *Inland navigation vessels – Safety requirements for walkways and working places.*

EN 13411-2, *Terminations for steel wire ropes - Safety - Part 2: Splicing of eyes for wire rope slings.*

EN 13411-5, *Terminations for steel wire ropes - Safety - Part 5: U-bolt wire rope grips.*

EN 13574, *Inland navigation vessels – Permanently installed climbing devices with a length not exceeding 5 m.*

EN 14144, *Lifebuoys – Requirements, tests.*

EN 14145, *Holders for lifebuoys.*

ISO 8793, *Steel wire ropes – Ferrule-secured eye terminations.*

ENV 1991-3, *Eurocode 1: Basis of design and actions on structures - Part 3: Traffic loads on bridges.*

ENV 1992-2, *Eurocode 2: Design of concrete structures - Part 2: Concrete bridges.*

ENV 1993, *Eurocode 3: Design of steel structures.*

ENV 1995-2, *Eurocode 5: Design of timber structures - Part 2: Bridges.*

EN 14504:2004 (E)**3 Definitions**

For the purposes of this standard, the following definitions apply:

- 3.1 floating landing stage**
installation used for the berthing and making fast of vessels and as a connection between vessel and shore
- 3.2 floating body**
buoyant body with surface that can be walked on and/or used as support for the connecting bridge
- 3.3 connecting bridge**
walkway between floating body and shore
- 3.4 anchorage**
device by which the floating landing stage is secured to its berth
- 3.5 shore boom**
spacer for the floating body

4 General requirements**4.1 Components**

The floating landing stage consists of floating body, connecting bridge and anchorage.

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4.2 Construction

The requirements applicable to the bridge construction shall be in accordance with ENV 1991-3, ENV 1992-2, or ENV 1995-2.

The manufacturer of floating landing stages shall have available suitable expert personnel, experience and relevant equipment.

4.3 Strength

The strength of the components and the anchorage of the floating landing stages shall be dimensioned as specified in annex A.

4.4 Stability of the floating bodies**4.4.1 Intact stability**

When loaded as specified in annex A, a freeboard of at least 30 cm and an angle of inclination not greater than 10° shall be maintained.

4.4.2 Damaged stability

The compartmentalization of the floating body shall be selected so that, even when one compartment is damaged, the watertight integrity and stability are maintained.

4.5 Anchorage

Floating landing stages shall be securely anchored in their positions to prevent them from being torn loose or being displaced by berthing vessels, currents, wind, waves, fluctuations in water level or the draught or wash of passing vessels:

- a) by the use of chains, ropes or suitably strong and long shore booms or the connecting bridge; the fastenings shall be secured against malicious undoing. Rope terminations shall be in the form of a splice as specified in EN 13411-2, an aluminium ferrule pressing as specified in ISO 8793 or wire rope grips as specified in EN 13411-5;
- b) to dolphins as described in 4.6.3.

4.6 Structural requirements

4.6.1 The floating landing stage shall be designed so that it can follow all changes in water level during operation.

4.6.2 Taking into account 4.4.2, the freeboard of the floating body shall be selected so that the height difference between the deck of the floating body and the deck of the berthing vessels is as small as possible

4.6.3 Floating bodies attached to dolphins shall be fixed so that they cannot tilt. The length of the dolphins shall be selected so that, at the maximum water level to be expected, the floating body is not flooded.

5 Equipment

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5.1 Railings, barrier

5.1.1 The walkways of floating landing stages shall be fitted with fixed railings as specified in EN 711 at points where it is possible to fall into the water or to lower-lying levels. Types PF, PG or PZ shall be selected for floating landing stages used for passenger traffic.

5.1.2 There should be a barrier at the shore-side access point to the connecting bridge.

NOTE The shore-side barrier should prevent persons being subjected to any hazards when the vessel is going alongside.

5.1.3 If the barrier as specified in 5.1.2 is not provided, the access point to the vessel shall have a lockable gate.

5.2 Life-saving equipment

The floating landing stage shall have at least one lifebuoy as specified in EN 14144 with a 25 m long floating line and holder as specified in EN 14145.

5.3 Device for mooring inland navigation vessels

There shall be at least two bollards on the water side of the floating landing stage. They shall each withstand a tensile force as specified in A.6. The tops of the bollards shall be of anti-slip design and be permanently marked with signal paint.

5.4 Lighting

No lights shall be attached to the floating landing stage that would mislead or hinder shipping through dazzling effects or reflections, could give rise to confusion with shipping signs or impair their effect.

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5.5 Electrical equipment

The degree of protection shall be at least IP 55.

The relevant CENELEC specifications apply.

5.6 Storage spaces

The relevant places for storing materials on the deck of the floating body of floating landing stages shall be marked.

Suitable devices shall be provided to secure the objects against falling over, slipping or rolling away.

6 Walkways

6.1 General

Walkways shall meet the requirements of EN 13281.

The landing stage constructed for public traffic shall be designed to be suitable for wheelchairs.

If there are accesses to the individual compartments of the floating body, they shall have fixed climbing devices as specified in EN 13574.

Edges of steps, hatch covers etc. that are unavoidable tripping hazards shall be marked with signal paint.

6.2 Connecting bridge

6.2.1 The connecting bridge shall have a minimum clear width of 0,9 m.

6.2.2 Connecting bridges supported on wheels on the shore-side shall be secured against displacement by vessel impact.

6.2.3 The floating landing stage shall be designed so that the gradient of the connecting bridge is as small as possible at mean water level.

7 Testing

7.1 Expert

The following tests shall be carried out by an expert for the particular application.

7.2 Strength

The strength requirements shall be verified under the conditions specified in annex A.

7.3 Stability

7.3.1 Intact stability

Intact stability shall be verified by calculation or by a loading test. Loads A.2 to A.4 shall be taken into account.

7.3.2 Damaged stability

The damaged stability shall be verified by calculations; in this case, one compartment of the floating landing stage shall be considered to be damaged. The permanent actions specified in A.2 shall be taken into account.

8 Manufacturer's certificate

The manufacturer shall certify that the floating landing stage meets the requirements of this standard.

9 Marking

9.1 Line of floatation

All four corners of the floating body shall be marked at the height of the waterline as described in 4.4.1 so that any leakage and critical floatation conditions can be recognized.

9.2 Manufacturer's mark

The following marking shall appear permanently and legibly on the floating landing stage:

- manufacturer;
- year of manufacture;
- EN 14504.

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10 Operating instructions

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The manufacturer shall supply operating instructions in the language of the user, stating at least:

- no hazardous or combustible materials shall be stored in the floating bodies;
- floating landing stages shall be checked regularly by the operator;
- the anchorages and the corrosion protection shall be tested by an independent expert at least every five years;
- a shore check shall be carried out at least every ten years by an independent expert in which the minimum wall thickness of the external skin of the floating body shall not be less than three millimetres.