



SLOVENSKI STANDARD
SIST EN 14329:2004

01-september-2004

Plovila za celinske vode – Ureditev privezov in natovarjališč

Inland navigation vessels - Installation of berths and loading areas

Fahrzeuge der Binnenschifffahrt - Einrichtung von Liege- und Umschlagplätzen

Bateaux de navigation intérieure - Arrangement de mouillages et d'installation de transbordement

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EUROPEAN STANDARD
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EN 14329

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Inland navigation vessels - Installation of berths and loading areas

Bateaux de navigation intérieure - Arrangement de mouillages et d'installation de transbordement

Fahrzeuge der Binnenschifffahrt - Einrichtung von Liege- und Umschlagplätzen

This European Standard was approved by CEN on 2 February 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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Foreword

This document EN 14329:2004 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of an identical text or by endorsement, at the latest by September 2004, and conflicting national standards shall be withdrawn at the latest by September 2004.

This European Standard is intended to be an aid for the construction of berths and loading areas for inland navigation vessels and to support intermodal transport in the transport chain.

The “loading area” interface described in the standard helps to introduce inland navigation vessels into logistics and freight and fleet management considerations.

It gives a summary of the necessary devices and their minimum requirements. In this way, it is intended improving the safety of the users both on the ship and the shore side.

Berths and loading areas may be parts of handling areas, berthing areas and harbours

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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EN 14329:2004 (E)**1 Scope**

This European Standard applies to the installation of berths and loading areas for inland navigation vessels.

It also applies to berths and loading areas for inland navigation vessels in seaports.

This standard does not apply to Ro-Ro systems, ferry terminals, floating equipment, bunker stations, landing stages used for passenger changeovers or for holding areas.

2 Normative references

This 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 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 526, *Inland navigation vessels — Gangways with a length not exceeding 8 m - Requirements, types.*

EN 13056, *Inland navigation vessels — Stairs with inclination angles of 30° to < 45° — Requirements, types.*

EN 13574:2001, *Inland navigation vessels — Permanently installed climbing devices with a length not exceeding 5 m.*

EN 14144, *Lifebuoys — Requirements, tests.*

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EN 14145, *Holders for lifebuoys.*

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3 Terms and definitions

For the purposes of this European Standard, the following definitions apply:

3.1**berth**

landing place

landing stage with mooring systems and shore connections

3.2**loading area**

berth for loading and unloading inland navigation vessels

3.3**holding area**

area used just for short-term waiting until the vessels continues its journey or is assigned a berth or loading area

3.4**climbing device**

stair and quay ladder

3.5**mooring system**

fixed device for making fast inland navigation vessels

3.6**shore connection**

fixed crossing point from the inland navigation vessels to the shore

3.7**dolphin**

permanent pile or bundle of piles with mooring system

3.8**landing**

walkable surface between two stairs or at their end points

3.9**berm**

narrow walkable surface running parallel to the bank separating the top slope or wall from a slope or wall lying beneath it, see Figures A.5 to A.7

4 Requirements**4.1 General requirements**

Berths and loading areas shall be constructed to ensure it is safe to enter, leave and lie at the berth. Coming alongside aligned, vertical dolphins and large-area guideways shall be safely facilitated. It shall not be possible for inland navigation vessels to get hooked up or caught up in them.

Direct crossing over to the shore shall be possible. If height differences have to be overcome, stairs shall be preferred to quay ladders.

Direct communication shall be possible between the installation operators and the ship's crew at the loading areas. Direct visual contact shall be aimed for.

Changing water levels and loading conditions of the inland navigation vessels shall be taken into account.

Bollard heads, holding devices at the harbour operating level and waterside stair edges shall be marked with contrasting colours.

4.2 Berths for extreme high water levels

4.2.1 Dolphins that are to be used for extreme high water levels also shall be designed to project above the water level to be expected.

4.2.2 Dolphins shall project at least up to the maximum water level to be expected.

NOTE The different national designations apply for the maximum water level to be expected.

4.3 Berths alongside slopes

4.3.1 Berms shall be at least 0,7 m wide and be constructed to project above the mean water level. They shall also be capable of being used safely in the vicinity of dolphins, guide stakes and recesses.

4.3.2 If, when water levels are relatively high, it is no longer possible to reach the stairs of slopes behind dolphins with gangways as specified in EN 526, fixed gangways with railings shall be installed at the height of the top of the slope.

EN 14329:2004 (E)**4.4 Mooring systems****4.4.1 Layout**

The horizontal centre-to-centre distance between the mooring systems should be 30 m and shall not exceed 40 m.

The mooring systems shall be installed at the same height on both sides of the climbing device so that their use cannot be hindered by ropes.

The horizontal distance between the climbing device and the mooring system shall not exceed 0,85 m.

The lowest mooring system shall be located not more than 1,5 m above the lowest water level to be expected.

The highest mooring system shall be attached

- a) to the quay wall or
- b) to the top of the dolphin or up to a maximum of 1,0 m below the top edge of the dolphin.

The vertical distance between mooring systems may be 1,5 m and shall not exceed 1,8 m.

4.4.2 Holding force

The holding force of a mooring system shall be

- a) at least 100 kN in waterways for inland navigation vessels up to a maximum $L = 85$ m and $B = 9,5$ m;
- b) at least 200 kN in waterways for larger inland navigation vessels up to a maximum $L = 110$ m and $B = 11,5$ m;
- c) .at least 300 kN in waterways for larger inland navigation vessels.

The holding force of a mooring system in a harbour without a current shall be at least 100 kN.

4.5 Fenders

If fenders are fitted, they shall be arranged so that they do not impair the safety of inland navigation vessels in the event of changing water levels and loading conditions.

4.6 Stairs and quay ladders**4.6.1 General**

Berths and loading areas shall have stairs or quay ladders no more than 30 m apart.

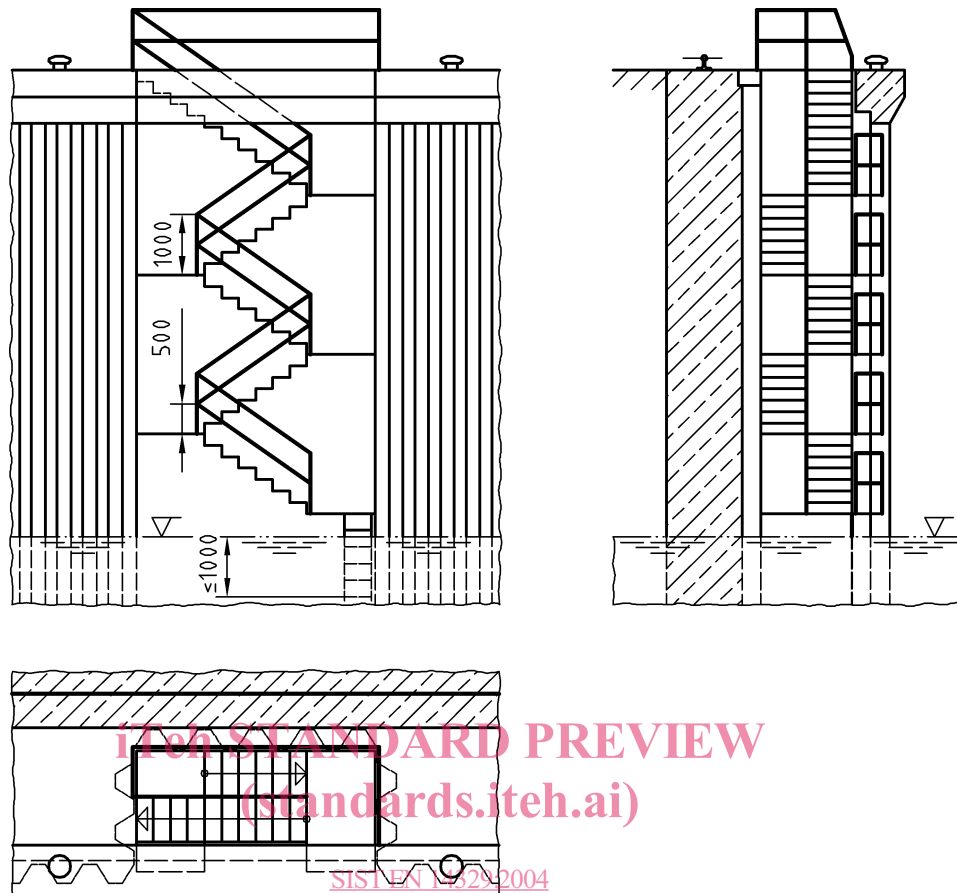
Berths where there is a difference of more than 2,0 m between the mean water levels of the harbour operating level and the surface of the water shall have stairs that shall be no more than 60 m apart.

The bottom end of the stairs or quay ladders shall project down to 1,0 m below the lowest water level to be expected, see Figure 1 and Figure 2.

The top end of the stairs or quay ladders shall have a safety area at least 0,5 m deep and at least 2,0 m high.

NOTE The safety area ensures the stairs or quay ladders are safe to use even if there are crane runways in the area..

Dimensions in millimetres



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Figure 1 — Staggered stair with landing in a wall recess

4.6.2 Stairs in vertical walls

The stairs shall be installed parallel to the quay wall.

The stair dimensions including the dimensions of the landings shall be in accordance with EN 13056; as a deviation from this, the clear width shall be at least 0,9 m.

In the case of stairs extending more than 3,0 m in height, landings shall be included at least every 2,0 m.

A stair without landings or where there is no change in direction at the landings (see Figure 2) shall have a handrail on the wall-side painted in a contrasting colour and its top edge shall be 1,0 m above the front edge of the step.

A stair which changes direction at the landings (see Figure 1) shall have a railing at the middle level of the stair.

The landings shall be designed so that a gangway as specified in EN 526 can be attached.

Stair cut-outs shall be safely fenced off in areas where there is a risk of falling.