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Inland navigation vessels — Safety requirements for walkways and working places

National foreword

This British Standard is the UK implementation of EN 13281:2023. It supersedes BS EN 13281:2000, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee SME/32, Ships and marine technology steering committee.

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Inland navigation vessels - Safety requirements for walkways and working places

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Fahrzeuge der Binnenschifffahrt -
Sicherheitsanforderungen an Verkehrswege und
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European foreword

This document (EN 13281:2023) 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of an identical text or by endorsement, at the latest by September 2023, and conflicting national standards shall be withdrawn at the latest by September 2023.

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 13281:2009.

The main changes compared to the previous edition are listed below:

- a) editorial changes in definition 3.1, 3.2 and 3.4;
- b) essential requirement for traffic routes and side deck (4.2.1 and 4.2.2);
- c) reference to swinging derrick deleted (Clause 2, 4.2.2 and 4.8);
- d) emergency exits: dimension increased and access aids required (4.5.4);
- e) reference to outboard ladders (4.6);
- f) illuminance levels required (Clause 6);
- g) bulwarks and hatch coamings: minimum height increased and slip-on elevations regulated (7.1);
- h) basic requirement for handrails (7.2);
- i) Annex ZA has been deleted;
- j) editorial adjustments.

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.

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.

1 Scope

This document specifies the safety requirements for walkways and working places on inland navigation vessels in the areas used for work.

Walkways in the passenger area are governed by requirements which are outside the scope of this document.

Requirements related to the marking of safety and health protection are not covered by this document.

This document specifies safety requirements for walkways and working places within the meaning of European Parliament and Council Directive (EU) 2016/1629 of 14 September 2016 laying down technical requirements for inland waterway vessels.

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 526, *Inland navigation vessels - Gangway with a length not exceeding 8 m - Requirements, types*

EN 711, *Inland navigation vessels - Railings for decks and side decks - Requirements, designs and types*

EN 790, *Inland navigation vessels - Stairs with inclination angles of 45° to 60° - Requirements, types*

EN 1502, *Inland navigation vessels - Boarding stairs*

EN 1864, *Inland navigation vessels - Wheelhouse - Ergonomic and safety requirements*

EN 1914, *Inland navigation vessels - Work boats, ship's boats and lifeboats*

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

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

EN 17361, *Inland navigation vessels - Outboard ladders*

EN 29519, *Shipbuilding and marine structures - Rungs for dog-step ladders (ISO 9519)*

EN ISO 14122-2, *Safety of machinery - Permanent means of access to machinery - Part 2: Working platforms and walkways (ISO 14122-2)*

3 Terms and definitions

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

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

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1

walkway

area in which people walk

EXAMPLES Side decks, decks, entryways, aisles and passageways to working places.

3.2

working place

place where persons carry out their duties

[SOURCE: EN 528:2021+A1:2022, 3.8]

3.3

clear width of the walkway

distance between two perpendiculars through the points on components which project furthest into the walkway

3.4

side deck

walkway along the side of the vessel in the area of the cargo room between fore deck and aft deck

4 Safety requirements for walkways

4.1 General

Walkways shall be available in sufficient number and constructed and dimensioned in such a way that they can be walked along safely as specified herein.

4.2 Dimensions

4.2.1 General

Walkways shall be arranged in such a way that in the event of stumbling or falling one cannot fall outboard.

Walkways shall have a clear width of at least 0,60 m and a height of at least 2,00 m.

Passageway access shall be at least 1,90 m high, whereas door coamings up to a height of 0,40 m are not deducted from the clearance height.

4.2.2 Special requirements for side decks

In derogation from 4.2.1 the clear width of the side deck may:

- a) be reduced to 0,54 m for hatch coaming heights up to 0,90 m if there is a clearance between the outer edge of the ship's wall and the inner edge of the cargo hold of at least 0,65 m above;
- b) be reduced locally near to fittings which are required for the vessel operation:
 - to 0,50 m near to cocks for deck washing hoses, etc.;
 - to 0,40 m around bollards and cleats at deck level.

For ships with a length of less than 55 m or a beam less than 7,30 m with accommodation at the aft only or no accommodation, the clear width of the side deck may be reduced to 0,50 m.

4.3 Surface condition

Walkways shall:

- have a slip-resistant surface R10 in accordance with EN ISO 14122-2;
- be constructed in such a way that water cannot accumulate on them;
- be firm, fair and free from hollows;
- be free from tripping hazards.

On deck walkways, the maximum permissible rise shall be 1 : 10 and the maximum permissible hollow shall be 1 : 20.

4.4 Steps in walkways

4.4.1 General

Where there is a difference in height between continuing walkways of more than 0,50 m, stairs or climbing devices shall be fitted.

4.4.2 Stairs

4.4.2.1 Stairs shall be built into all the areas which are regularly accessed, such as accommodation, wheelhouse, engine rooms and working spaces.

4.4.2.2 Stairs shall be constructed in accordance with EN 13056. Stairs for machine rooms and working rooms may deviate from this for reasons of space, but they shall at least comply with EN 790. In addition, they shall have the same width as the passageways or the adjoining walkways to which they lead.

4.4.2.3 External stairs shall be built longitudinally along the vessel.

4.4.3 Climbing devices

4.4.3.1 Spaces which are not mentioned in 4.4.2.1, may be equipped with a climbing device, preferably ladder, instead of stairs.

4.4.3.2 Cargo holds shall have at least two climbing devices positioned fore and aft, these shall be designed and constructed in such a way that they are protected against mechanical damage, e.g. in recesses.

4.4.3.3 Climbing devices shall be designed conforming to EN 13574.

4.4.3.4 Dog-step ladders shall be designed conforming to EN 29519.

4.4.3.5 Climbing devices shall be identifiable from above.

4.5 Exits, emergency exits

4.5.1 There shall be fixed railings in accordance with EN 711 along the sides of the deck near to the exits of deck structures and stairs.

4.5.2 Exits shall not be located near to dangerous equipment, such as operating machinery, winches, towing apparatus and loading equipment.

4.5.3 Machine rooms, working spaces, living spaces and the wheelhouse shall have two exits, one of which may be constructed as an emergency exit. Machine rooms and workings spaces with less than 35 m² and a max distance of 5 m between any working place and the exit are exempt from the requirement of having two exits.

4.5.4 Emergency exits shall:

- be accessible on both sides;
- be marked on both sides;
- be capable of being opened in the direction of escape at all times without using tools or keys and with a force of not more than 160 N;
- be fitted with a device to keep them in position when in use;
- have a clear opening of at least 0,60 m², with the smallest dimension not less than 0,50 m for rectangular shapes.

NOTE Requirement in ES-TRIN for clear opening of emergency exit is 0,36 m².

If a climbing device is needed to reach the emergency exit, a fixed climbing device in accordance with 4.4.3 shall be provided as climbing aids for easy and quick use.

4.6 Boarding ladders and boarding stairs

Structural devices shall be provided at suitable points on board for the safe securing of boarding stairs in accordance with EN 1502 and outboard ladders in accordance with EN 17361.

4.7 Gangways

Structural devices shall be provided at suitable points on board for the safe positioning of gangways in accordance with EN 526.

4.8 Ship's boats

Equipment or devices shall be provided at suitable points on board for the safe mounting of ship's boats according to EN 1914 and their launching as intended even in the case of failure of power drive.

5 Safety requirements for working places

5.1 General requirements

Working places shall be positioned and equipped to provide clear space for working, as specified herein.

The requirements in 4.3 shall be met.

The equipment shall be set up to be used and maintained safely. Moving and hot parts shall be provided with protective devices.

5.2 Hatches and hatch covers

5.2.1 Hatch coamings shall be constructed at the hold side so that crane gear cannot snag on them.

5.2.2 Hatch covers shall be designed:

- to resist to structural flexing of the vessels;
- so that they can be secured against being lifted by wind;
- to avoid the risks presented by squeezing and shearing;
- to resist a loading of 1,5 kN/m², or they shall be marked that they cannot be walked on;
- to be marked if they may be loaded by stowed cargo according to load and load positioning;
- and to be hinged, sliding or power-operated if the moving parts have a mass of more than 40 kg.

5.2.3 Rolling hatch covers and lift trucks shall be fitted with blocks which automatically prevent unintentional longitudinal movement of more than 0,40 m and lock in the end position.

5.2.4 It shall be possible to secure stacked parts of the hatch cover.

5.2.5 In the case of power-operated hatch covers, the operating elements shall be self-resetting. The power supply shall be cut off in a null position of the operating elements.

5.3 Working places on deck and inside the vessel

5.3.1 Working places inside the vessel shall conform to the relevant health and safety as well as ergonomics requirements. They shall be capable of being ventilated and temperature controlled.

Where possible, working places inside the vessels shall be lit by natural light.

5.3.2 Openings in decks and floor shall be fenced off or be capable of being secured against falling through.

5.3.3 Windows and skylights shall be constructed and arranged in such a way that they can be operated and cleaned.

5.4 Protection against noise and vibration

Working places shall be so located, constructed and installed that risks resulting from the emission of noise and vibration are reduced to the lowest possible level.

5.5 Wheelhouses and control positions

Wheelhouses and control positions, in particular:

- safety and ergonomic requirements; and
- visibility from the control position shall be designed in accordance with EN 1864.

5.6 Doors and covers

5.6.1 Doors and covers shall be capable of being opened and closed from both sides, this does not apply to covers which can be bolted.

5.6.2 Doors and covers shall be secured by:

- latches in the closed position;
- hold backs in the open position.

Hold backs are not necessary for covers capable of being completely turned down.

6 Lighting

Working places, living spaces and walkways shall be equipped with lighting. Lighting appliances on open decks shall be so installed as not to impede the recognition of signal lights.

The illuminance needs to be at least:

- on walkway 100 lx;
- in the working places 200 lx;
- in areas with increased lighting needs 500 lx.

An emergency lighting shall be provided which shall switch on automatically in the event of lighting failure and remain active for at least 30 min.

The illumination of the emergency lighting needs to be at least 1 lx.

7 Protection against falling

7.1 Railings, bulwarks and hatch coamings

7.1.1 Walkways and working places shall have:

- railings in accordance with EN 711; or
- bulwarks at least 0,90 m high

on the water sides.

By way of derogation from sentence 1:

- side decks on unmanned vehicles shall be fitted with handrails on the hatch coamings and footrails according to EN 711 on the outer edges of the decks;
- for workplaces on the outside of passenger ships, the requirements are not complied with where other safeguards are applicable.

7.1.2 When there are height differences of more than 1,0 m, walkways and working places shall have:

- railings in accordance with EN 711; or
- hatch coamings at least 0,90 m high.

By way of derogation from sentence 1 unmanned vehicles may have lower hatch coamings if this is necessary for their intended use.

7.1.3 If bulwarks or hatch coamings are not constructed to the height specified in 7.1.1 or 7.1.2, they shall be raised to this height by means of pipe or wire rope elevation. These elevations may be designed to be hinged or pluggable above 0,70 m, provided that the elevation can be easily set.

7.2 Handrails

Handrails at hatch coamings and super structures shall:

- be fitted at a height of between 0,80 m and 1,10 m;
- have an external diameter between 16 mm and 38 mm;
- be constructed in such a way that their fixing devices do not obstruct continuous guidance of the hand;
- be at least 60 mm away from structural components.

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Bibliography

- [1] EN 528:2021+A1:2022, *Rail dependent storage and retrieval equipment - Safety requirements for S/R machines*
- [2] Directive (EU) 2016/1629 of the European Parliament and of the Council of 14 September 2016 laying down technical requirements for inland waterway vessels, amending Directive 2009/100/EC and repealing Directive 2006/87/EC
- [3] Council Directive 92/58/EEC of 24 June 1992 on the minimum requirements for the provision of safety and/or health signs at work (with individual Directive within the meaning of Article 16 (1) of Directive 89/391/EEC)

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