SLOVENSKI STANDARD
SIST EN 1502:2023

01-april-2023

Plovila za celinske vode - Stopnice za vkrcanje

Inland navigation vessels - Boarding stairs

Fahrzeuge der Binnenschifffahrt - Außenbordtreppen

Bateaux de navigation intérieure - Escaliers de bordaille

Ta slovenski standard je istoveten z: **EN 1502:2023**

ICS:

47.020.10	Ladijski trupi in njihovi konstrukcijski elementi	Hulls and their structure elements
47.060	Jezerska in rečna plovila	Inland navigation vessels

SIST EN 1502:2023 **en,fr,de**

EUROPEAN STANDARD

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Inland navigation vessels - Boarding stairs

Bateaux de navigation intérieure - Escaliers de bordaille

Fahrzeuge der Binnenschifffahrt - Außenbordtreppen

This European Standard was approved by CEN on 2 January 2023.

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

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European foreword

This document (EN 1502:2023) 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of an identical text or by endorsement, at the latest by August 2023, and conflicting national standards shall be withdrawn at the latest by August 2023.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 1502:2020.

The main changes compared to EN 1502:2020 are listed below:

a) 5.1 has been replaced by “Watertightness”;

b) 5.4 has been deleted.

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 is applicable to boarding stairs for inland navigation vessels. Boarding stairs are used on inland navigation vessels for a safe transition into ship's boats, safe disembarking to the shore or a safe crossing over onto vessels with lower decks.

This document specifies safety requirements on the design, dimensions and strength and test methods for boarding stairs.

Boarding stairs are designed for vessels having a boarding height greater than 1,5 m above the light water-line. They can be used up to a height of around 3,0 m above the light water-line.

Boarding stairs are not intended for use by passengers.

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 22768-1, *General tolerances - Part 1: Tolerances for linear and angular dimensions without individual tolerance indications (ISO 2768-1)*

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/ui

3.1
boarding stair
movable device with steps to be attached to the vessel's side for comfortable boarding and disembarking

3.2
string
<inland navigation> lateral limitation of a boarding stair supporting the steps

3.3
step
<inland navigation> tread of the boarding stair

3.4
inclination angle
<inland navigation> angle between the pitch line connecting the front edge of the steps and the horizontal line

3.5
handrail
<inland navigation> component parallel to the string (3.2) serving as handhold and as fall protection

3.6
spacer
<inland navigation> component which holds the boarding stair in its operating position at the specified angle to the vessel's side

4 Safety requirements

4.1 Dimensions

General tolerances: ISO 2768 – c (see EN 22768-1).

Dimensions are given in Figure 1, and Table 1.

Edges shall be rounded to min. R 1,5 mm.

Data which have not been specified shall be selected as appropriate.

4.2 Parts

4.2.1 General

Boarding stairs are not expected to conform to the designs illustrated here; however, the dimensions and specifications given shall be followed. Maximum permissible masses are given in Table 1.

4.2.2 Handrails and strut

4.2.2.1 Stringers and handholds should be made from tubular section tube with Ø 35 mm ± 5 mm. If alternative profiles are chosen, it shall be ensured, that they are easy to grasp.

4.2.2.2 The handrails shall be fitted on both sides. The handrail on the left-hand side, as one ascends, shall only be extended to the top of the string.

4.2.2.3 The handrails shall run parallel to the string up to the third step from the bottom and attached to the string between the second and third step from the bottom.

4.2.2.4 It shall be possible to grip the handrail on the right-hand side horizontally at its upper end.

4.2.2.5 The strut shall be placed on the upper end of the right string and shall connect both parts of the handrail with the string on the right-hand side.

4.2.2.6 The upper end of the handrails shall lead back downwards so that it forms, at the right-hand side together with the strut, a hook for attaching the boarding stairs to the vessel's side; see Figure 1.

4.2.3 Spacer

4.2.3.1 The spacer shall be large enough to ensure an inclination angel of $(75^{\ 0}_{-10})°$.

4.2.3.2 Where the spacer comes into contact with the vessel's side, it shall be designed so that the contact surface is not less than 500 mm wide or the contact points are at least 500 mm apart.

4.2.3.3 The spacer shall be attached to the two strings. If it is of the folding type, it shall lock automatically when it is placed in its operating position.

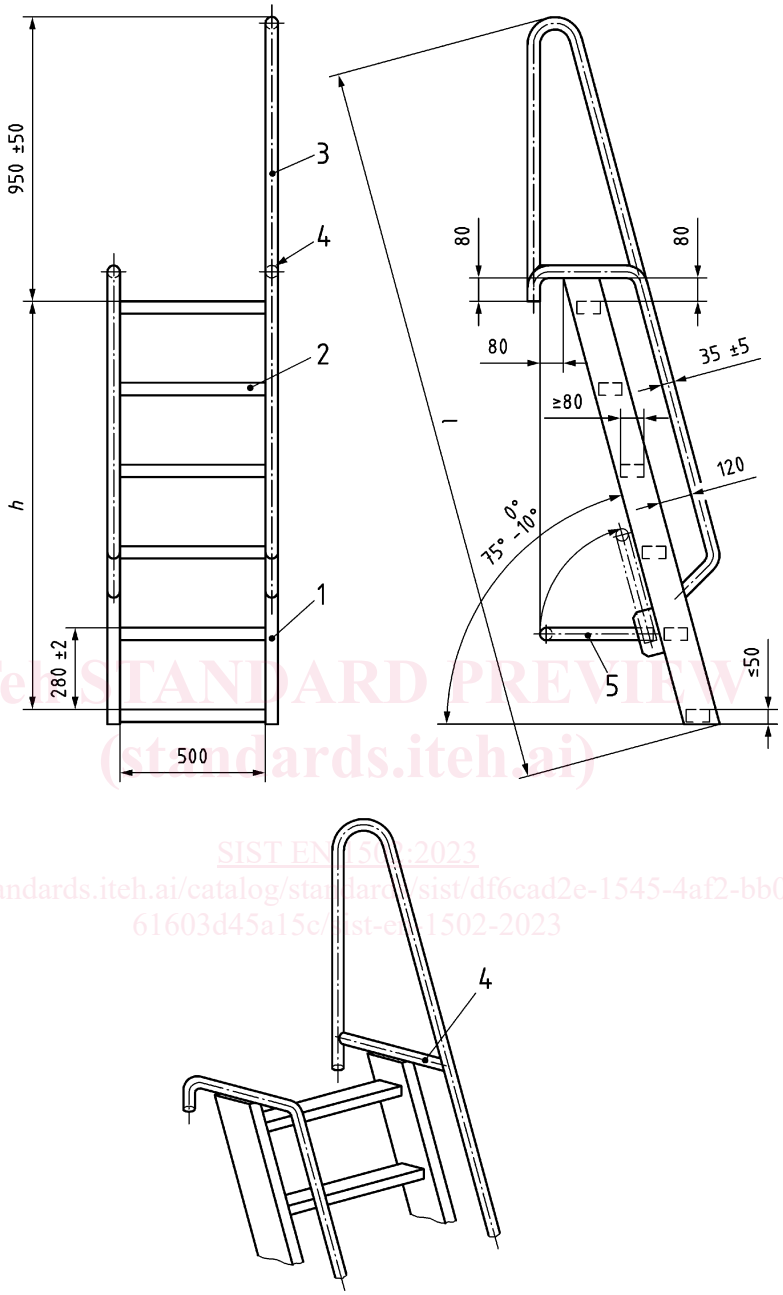
Table 1 — Dimensions and maximum permissible masses

No. of steps	*h* mm [a]	*l* mm [a]	Permissable mass kg max.
6	1 400	2 505	15,5
7	1 680	2 795	17,0
8	1 960	3 085	19,0
9	2 240	3 375	20,5
10	2 520	3 665	22,5

[a] Tolerances (see Figure 1) are not included.

4.3 Assembly

Dimensions in millimetres



Key

1 string
2 step
3 handrail
4 strut
5 spacer
h raiser hight of boarding stair
l total length of boarding stair

Figure 1 — Boarding stair having 6 steps

4.4 Strength

4.4.1 The steps shall be designed for a rated load of 1,5 kN.

4.4.2 The boarding stair shall be designed for two rated loads of 1,5 kN each, applied simultaneously to the top and bottom steps.

4.4.3 Each handrail shall be able to withstand a force of 0,3 kN applied in any direction.

5 Construction

5.1 Watertightness

Hollow sections and their connections shall be watertight.

5.2 Buoyancy

Boarding stairs shall be buoyant.

5.3 Safe tread

The treads of the steps shall be non-skid and of water displacing sheet.

NOTE Information on non-skid and water-displacing sheet metal or profile can be found in EN ISO 14122-2:2016, Annex A.

5.4 Mass

The mass of a boarding stair shall not exceed the values given in Table 1.

5.5 Materials

Boarding stairs shall be resistant against impact of weather, sea water, UV-rays and oil/fuel or durably protected according to the specification of the manufacturer, e.g. aluminium or FRP (fibre reinforced polymers).

NOTE Examples of suitable semi-finished aluminium products are given in EN 485-1 or EN 754-1.

6 Testing

6.1 General

For boarding stairs produced in series, the test is performed as a type test. One boarding stair shall be selected at random out of a series of maximum of 20.

Requirements which are stated in this document without a special testing method shall be tested by measurement and/or visual inspection, and/or practical function test.

6.2 Strength test

The boarding stair under test shall be supported by the hooks and held by the spacer at its inclination angle. Before testing the boarding stair shall be fixed to prevent movement.

Each step shall be loaded in turn for 60 s with a 2,5 kN test load.

The top and bottom step shall be loaded simultaneously for 60 s with 2,5 kN test loads.

The handrails shall be loaded once for 60 s with a 0,5 kN test load, at the midpoint between attachment points. The test load shall be applied both perpendicular to the boarding staircase and in its plane.