

SLOVENSKI STANDARD

oSIST prEN 1502:2019

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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: prEN 1502

<https://standards.iteh.ai/catalog/standards/sist/d80299f5-87cc-403b-be2e-95c60f943421/sist-en-1502-2020>

ICS:

47.020.10	Ladijski trupi in njihovi konstrukcijski elementi	Hulls and their structure elements
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English Version

Inland navigation vessels - Boarding stairs

Bateaux de navigation intérieure - Escaliers de
bordaille

Fahrzeuge der Binnenschifffahrt - Außenbordtreppen

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

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European foreword

This document (prEN 1502:2019) has been prepared by Technical Committee CEN/TC 15 “Inland navigation vessels”, the secretariat of which is held by DIN.

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1 Scope

This document applies 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.

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.

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

3 Terms and definitions

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

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

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

3.1

boarding stair

movable device with steps to be attached to the shipside for comfortable boarding and disembarking

3.2

string

lateral limitation of a boarding stair supporting the steps

3.3

step

tread of the boarding stair

3.4

inclination angle

angle between the pitch line connecting the front edge of the steps and the horizontal line

3.5

handrail

component parallel to the string (3.2) serving as handhold and as fall protection

3.6

spacer

component which holds the boarding stair at the specified angle to the shipside

4 Safety requirements

4.1 Dimensions

General tolerances: ISO 2768-1.

Dimensions are given in Figure 1, and Table 1.

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

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. Dimensions and masses are given in Table 1.

4.2.2 Strings

Strings shall be made from tubular section, square tube, dimensions: 100 mm x 40 mm.

4.2.3 Steps

Steps shall be made from tubular section, square tube, dimensions: 80 mm x 40 mm.

4.2.4 Handrail

4.2.4.1 The handrail shall be made from tubular section, round or oval tube with approximate Ø 40 mm.

4.2.4.2 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.

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

4.2.4.4 It shall be possible to grip the handrail horizontally at its upper end.

4.2.4.5 The upper end of the handrails shall lead back so that it forms, at the right hand side together with the beam, a hook for attaching the outboard stairs to the vessel's side, see Figure 1.

4.2.5 Spacer

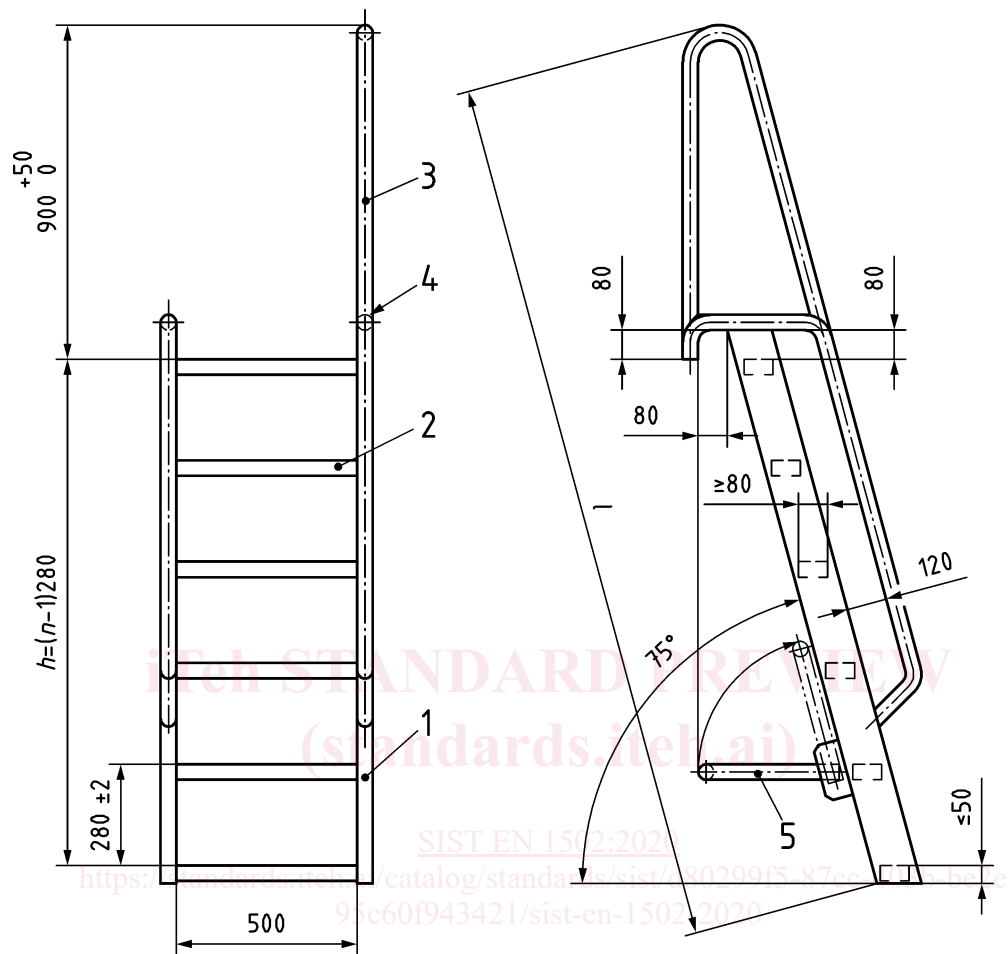
4.2.5.1 The spacer shall be large enough to ensure an inclination angle of maximum 75°.

4.2.5.2 Where the spacer comes into contact with the shipside, 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.

4.2.5.3 The spacer shall be attached to the two strings. If it is of the folding type, it shall automatically lock by bringing in its operating position.

4.3 Assembly

Dimensions in millimetres



Key

1	string	4	beam	h	riser height of boarding stair
2	step	5	spacer	l	total length of boarding stair
3	handrail				

Figure 1 — Boarding stair having 6 steps

Table 1 — Main dimensions and permissible maximum mass of boarding stairs

No. of steps <i>n</i>	<i>h</i> mm ≈	<i>I</i> mm ≈	Maximum permiss. mass kg
6	1 400	2 430	12,5
7	1 680	2 720	14,0
8	1 960	3 010	15,5
9	2 240	3 300	17,0
10	2 520	3 590	18,5

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 Welded construction

Any connections, except the spacers, shall be welded. The welds on the hollow sections shall be watertight.

5.2 Buoyancy

Boarding stairs shall be buoyant.

5.3 Safe tread

The surfaces of treads of the steps shall be non skid.

5.4 Edges

Boarding stairs shall not have burrs or other sharp points that can lead to injuries.

5.5 Mass

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

5.6 Materials

Boarding stairs may be made of aluminium or other appropriate materials, eg. FRP (fibre reinforced polymers).

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

Exposed surfaces shall be resistant adverse impact of weather, UV, HC or durably protected.

6 Testing

6.1 General

For boarding stairs produced in series, the test is performed as a type test. One boarding stair has to 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 visual inspection, measurements and/or practical function test.

6.2 Test of materials

Test of materials shall be made by submitting material certificates.

6.3 Strength tests

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 handrail shall be loaded for 60 s with a 0,5 kN test load, effective in any direction, successively at the upper end and at the midpoint between attachment points.

After removing the loads, there shall be no permanent deformation.

6.4 Buoyancy test

Buoyancy shall be demonstrated by submerging the boarding stair in freshwater.

If air is used to provide buoyancy there shall be no leakage of air from the sealed sections.

7 Designation

The designation of a boarding stair as specified in this standard, having 6 steps shall be:

Boarding stair EN 1502 — 6

8 Marking

Boarding stairs according to this standard shall be marked by means of a manufacturer's plate.

The manufacturer's plate shall be weather resistant and permanently and largely protected against damage attached to the inner side of a string. It shall contain at least the following information:

- a) Designation: "Boarding stair EN 1502";
- b) Load: "Permissible deadweight: 2 persons or 150 kg single load";
- c) Origin: Name, country and town of the manufacturer and/or supplier;
- d) Manufacturing data: year of manufacture.