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

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

Fahrzeuge der Binnenschifffahrt - Treppen mit Steigungswinkeln von 30° bis < 45° - Anforderungen, Bauarten

Bateaux de navigation intérieure - Escaliers à angles d'inclinaison entre 30° et < 45° - Exigences, types

[SIST EN 13056:2002](https://standards.iteh.ai/catalog/standards/sist/6ff7f460-4c98-4209-9400-6a30680f21e6/sist-en-13056-2002)

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**Ta slovenski standard je istoveten z: EN 13056:2000**

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**ICS:**

47.020.10	Ladijski trupi in njihovi konstrukcijski elementi	Hulls and their structure elements
47.060	Razporeditev in oblikovanje notranjih stopnic	Inland navigation vessels

**SIST EN 13056:2002**

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EUROPEAN STANDARD  
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EN 13056

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Inland Navigation Vessels - Stairs with inclination angles of 30°  
to < 45° - Requirements, types

Bateaux de navigation intérieure – Escaliers à angles  
d'inclinaison entre 30° et < 45° – Exigences, types

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Steigungswinkeln von 30° bis < 45° – Anforderungen,  
Bauarten

This European Standard was approved by CEN on 14 January 2000.

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.

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COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Contents

	Page
Foreword .....	3
Introduction .....	4
1 Scope .....	4
2 Normative references .....	4
3 Terms and definitions .....	4
4 Requirements .....	5
5 Manufacturer's declaration.....	10
6 Designation .....	10
Annex A (informative) Relationship of the standard with EU Directives .....	11
Bibliography .....	12

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## Foreword

This European Standard 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 2000, and conflicting national standards shall be withdrawn at the latest by August 2000.

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

Relationship with EU Directives, see informative annex A.

It is intended to provide recommendations supplementary to ergonomic data for construction of stairs used on inland navigation vessels and where suitable to use stair dimensions that are common ashore.

Taking into account the habits of passengers ashore, these less steep stairs would be suitable especially in passenger areas so that the required space should be provided.

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## Introduction

This European Standard has been prepared to lay down a recommendation for stairs with good practicability.

## 1 Scope

This European Standard applies to stairs with inclination angles of  $30^\circ$  to  $< 45^\circ$ , having at least 2 steps, used on inland navigation vessels.

These stairs are fixed in the passenger area, the accommodation and working areas of inland navigation vessels.

NOTE Stairs with lower practicability used in restricted locations are covered by prEN 790:1999 for the working area.

## 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*

prEN 12437-2:1996, *Safety of machinery – Permanent means of access to machines and industrial plants – Part 2: Working platforms and gangways*

EN 22768-1:1993, *General tolerances – Part 1: Tolerances for linear and angular dimensions without individual tolerance indications (ISO 2768-1:1989)*

## 3 Terms and definitions

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

### 3.1

#### **stair**

walkway with steps solidly fixed between two planes

### 3.2

#### **inclination angle**

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

### 3.3

#### **stair breadth**

clear breadth of the stair measured between the strings

### 3.4

#### **headroom**

vertical distance between the pitch line connecting the front edges of the steps and the fixed components above them

### 3.5

#### **step**

tread of the stair

**3.6****space between steps**

vertical distance between the upper edges of successive steps

**3.7****depth of steps**

distance between the front and rear edges of the steps measured on the tread

**3.8****string**

lateral limitation of the stair supporting the steps

**3.9****railing**

construction of stanchions, hand rail and intermediate rails or network

**3.10****height of railing**

vertical distance between the pitch line connecting the front edges of the steps and the upper edge of the hand rail

**3.11****hand rail****3.11.1**

upper continuous part of a railing running in parallel to the string and serving as a handhold to persons using the stair and protecting them from falling outboard of the railing

**3.11.2**

round section which is fixed at a bulkhead adjacent to the stair, running in parallel to the stairway and serving as handhold

**3.12****stanchion**

part of the railing connecting hand rail and intermediate rail, if any, to the string

**3.13****walking line**

theoretical line which describes the usual path of a user

**4 Requirements****4.1 Design**

For stairs, the dimensions given in 4.2 to 6 shall be met; the design style does not have to correspond to figure 1.

**4.2 Dimensions**

Dimensions in millimetres

General tolerances: ISO 2768 – c conforming to EN 22768-1:1993

Stairs, railings, platforms as well as free spaces in front of and above the stairs shall conform to the specifications given in table 1.

Table 1 – Stair dimensions and their explanation

Symbol	Explanation	Dimensions, Reference
$\alpha$	Inclination angle of the stair	30° to < 45°, see 4.3
$a$	Riser	see 4.4.2, 4.4.3
$b$	Depth of steps	see 4.4.1
$b_1$	Depth of tread = (depth of steps $b$ – undercut $u$ )	see figure 3
$c$	Vertical distance between the upper edge of the lowest step and the floor	see 4.4.3
$f_1$	Stair breadth between the strings	see 4.5
$f_2$	Clear width between railings or hand rails	see 4.5
$g$	Distance between hand rail and fixed components	60 min.
$h$	Height of railing	see 4.7
$j$	Distance between stanchions, measured at the hand rail	1 500 max.
$k$	Headroom	see 4.8
$n$	Number of steps	
$r$	Radius at the beginning of the railing	100 min.
$u$	Horizontal distance between the after edge of a step and the front edge of the step above (undercut)	see 4.4.5 and figure 3
$x_1$	Distance between the step surface and the fore lower edge of the step above	see 4.4.6
$x_2$	Clear space between the step end and the step above	see 4.4.7



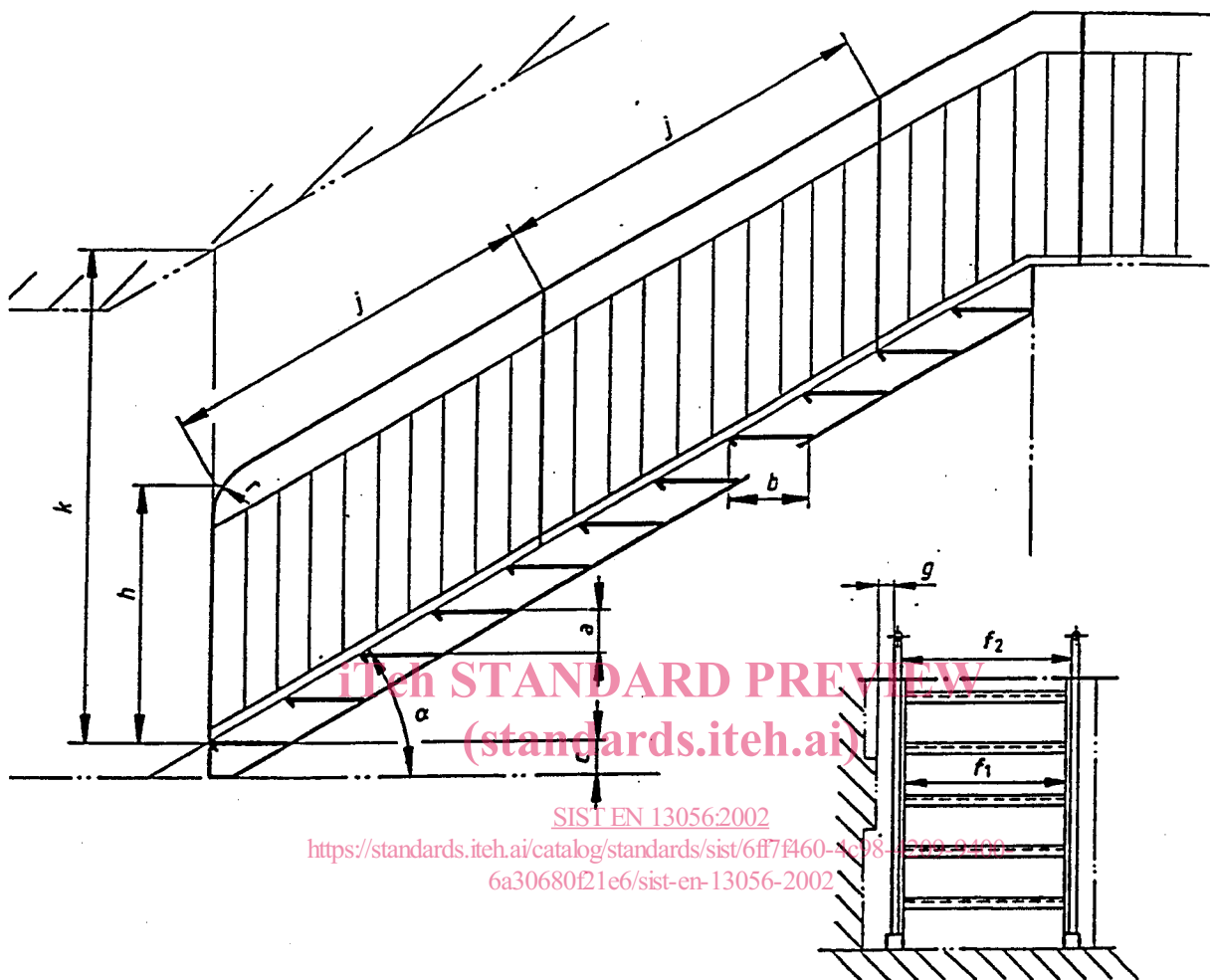


Figure 1- Stair with an inclination angle of 30°

### 4.3 Step spacing, inclination angle

NOTE Stairs inclined at 30° have been proven to be very practical. They should be selected in preference to stairs with an inclination angle of more than 30°.

It is not recommended to use stairs steeper than 33° for the passenger area.

There is a special relationship between inclination angle  $\alpha$ , depth of tread  $b_1$  and space between steps  $a$ , as given in the formula, see figure 2.