

SLOVENSKI STANDARD

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Nadomešča:
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Plovila za celinske vode - Ograje na palubah - Zahteve, vrste

Inland navigation vessels - Railings for decks and side decks - Requirements, types

Fahrzeuge der Binnenschifffahrt - Geländer für Decks und Gangborde - Anforderungen, Bauarten

Bateaux de navigation intérieure - Garde-corps pour ponts et plats-bords - Exigences, types

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 711

June 2016

ICS 47.020.10

Supersedes EN 711:1995

English Version

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

Bateaux de navigation intérieure - Garde-corps pour ponts et plats-bords - Exigences, types et modèles

Fahrzeuge der Binnenschifffahrt - Geländer für Decks und Gangborde - Anforderungen, Bauarten und Typen

This European Standard was approved by CEN on 25 March 2016.

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COMITÉ EUROPÉEN DE NORMALISATION
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EN 711:2016 (E)**European Foreword**

This document (EN 711:2016) was prepared by the 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of an identical text or by endorsement, at the latest by December 2016, and conflicting national standards shall be withdrawn at the latest by December 2016.

Attention is drawn to the possibility that that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 711:1995.

The following changes have been made in comparison with EN 711:1995:

- a) Title was modified;
- b) A new definition of "spring balanced unit" was added (3.7);
- c) The position of the toe rail was defined (4.1);
- d) Prohibition on climbing aids for railings on passenger ships (4.1);
- e) The Figures were improved and removed from the table (4.2);
- f) Railing height in working areas was redefined (4.2);
- g) Additional railing heights in passenger areas were added (4.2);
- h) Cables are required, i.e. no plastic ropes are permitted (4.1);
- i) The requirement relating to the tensioning of hand rails and intermediate rails were added (4.4);
- j) Spring balanced units were added (4.4.6);
- k) The minimum diameter for hand rails was added (4.4.7);
- l) The design of the mooring equipment was described (4.4.7);
- m) Function in the event of breakage in the material was added (5.1);
- n) Table 4 added in Annex A (5.2);
- o) Test requirements were defined (Clause 6);
- p) Designation updated (Clause 7);
- q) Sample designs for mooring equipment for transitioning to the bulwark and for increased bulwark height added as Annex B;
- r) Editorial changes made.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard is applicable to railings for decks and in gangways on inland navigation vessels. It lays down design, dimensions, strength and test conditions which have to be observed for safety reasons. The railings provide protection for persons against falling overboard and from one deck to another.

2 Normative references

The following documents which are cited at the appropriate places in this document are required for the application of this document. For dated references, only the editions referred to apply. For undated references the latest edition of the document (including all modifications) referred to applies.

EN 10025-2, *Hot rolled products of structural steels — Part 2: Technical terms of delivery for non-alloyed structural steels*

EN 10220, *Plain end steel tubes, welded and seamless — General tables for dimensions and masses per unit length*

EN ISO 1461, *Metallic coatings — Hot dipped galvanised coatings on fabricated ferrous products — Requirements and tests (ISO 1461)*

ISO 1835, *Short link chain for lifting purposes — Grade M (4), non-calibrated, for chain slings etc.*

ISO 2232, *Round drawn wire for general purpose non-alloy steel wire ropes and for large diameter steel wire ropes — Specifications*

ISO 2408, *Steel wire ropes for general purposes — Minimum requirements*

ISO 2768 (all parts), *General tolerances*

3 Definitions

For the purposes of this standard, the following definitions apply.

3.1 railing

<Inland navigation vessels> A construction of stanchions and hand rails as well as

- An intermediate rail and toe rail or
- A panel

3.2 stanchion

The vertical part of the railing, onto which the hand rails and intermediate rails or the network are mounted

3.3 hand rail

The uppermost continuous part of the railing, which serves as a handhold against falling overboard and/or for holding on

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3.4

intermediate rail

A continuous part fixed between the hand rail and deck which is intended to reduce the risk of persons sliding out under the hand rail

3.5

panelling

The component which fills in - entirely or to a large extent - the space between the hand rail and deck, and which is intended to reduce the risk of persons sliding out under the hand rail

EXAMPLE plates, canvas sheet, bars or the like.

3.6

toe rail

A profile fitted to the deck to prevent persons from slipping under the railing

3.7

spring balanced unit

Steel spring that forms the lower part of the stanchion

4 Safety requirements

4.1 Design

4.1.1 General

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The railing design depends on the location as shown in Table 1.

Railings may also be built in order to increase the height of a low bulwark (see Figure B.3).

Designation for each type of design:

- CF (stands for Commercial Fixed) fixed railing in the working area;
- CT (stands for Commercial Tilttable) tilttable railing in the working area;
- CD (stands for Commercial Detachable) removable railing in the working area;
- PF (stands for Passenger Filling) railing in passenger area with a closed network;
- PG (stands for Passenger Grid) railing in the passenger area with vertical bars;
- PZ (stands for Passenger Zonal) railing in the passenger area with horizontal bars and a closed network.

An overview of usual railing types is shown in Table 1.

Table 1 — Overview of the usual railing types

| Use in | Application | Symbol | Semi-finished material | | Construction notes | Figure |
|----------------|--|-----------------|-----------------------------------|--|--|--------|
| | | | Hand rail | Intermediate rail or network | | |
| Work area | General in working area | CF ^a | Metal section | Metal section | Stanchions solidly connected to the deck | 1 |
| | On gangway where a solid rail is an obstacle to cargo handling | CT | Wire rope chain/round steel chain | Wire rope chain/round steel chain | – | 2 |
| | To prevent people falling outside of the gangway | CD | Wire rope chain/round steel chain | Wire rope chain/round steel chain | Depending on position, connectors fixed to the coaming or to the deck with soft toe brackets | 3 |
| Passenger area | General in passenger area | PF | Metal section ^b | Netting, plates ^c | Stanchions solidly connected to the deck | 4 |
| | | PG | | Metal section | | 5 |
| | | PZ | | Netting, plates ^c , metal section | | 6 |

^a The railing is considered to be fixed even if segments thereof can be tilted or removed for special working conditions.

^b If necessary, with mounted wood or plastic profile. [SIST EN 711:2016](https://standards.iteh.ai/catalog/standards/sist/1bdb1199-1d78-4ee7-8d1e-aac79075c79d/sist-en-711-2016)

^c e.g. glass, wood or plastic. <https://standards.iteh.ai/catalog/standards/sist/1bdb1199-1d78-4ee7-8d1e-aac79075c79d/sist-en-711-2016>

4.1.2 Railings in work areas

4.1.2.1 Type A

Railings in working areas should comprise stanchions, a hand rail, an intermediate rail and a toe rail (see Figures 1 to 3). The toe rail should be fitted level with the railing or directly onto the stanchion or at a maximum outward distance g of 100 mm (see Figure 7).

4.1.2.2 Type B

This differs from Type A in that the toe rail is replaced by an additional intermediate rail at a height of $a/2$. Type B is only permitted in working areas on construction vessels.

4.1.2.3 Type C

This differs from Type A in that the toe rail is replaced by a coaming at an appropriate distance (see Figure 3).

4.1.3 Railings in passenger areas

Railings in passenger areas

- should comprise stanchions, a hand rail and networks (see Figures 4 to 6);
- should be designed in such a way that they cannot be used as climbing aids.

If the panelling consists of