



SLOVENSKI STANDARD
SIST EN 13573:2002
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Inland navigation vessels - Anchoring, coupling, towing, hauling and mooring systems

Inland navigation vessels - Anchoring, coupling, towing, hauling and mooring systems

Fahrzeuge der Binnenschifffahrt - Anker-, Kupplungs-, Schlepp-, Verhol- und Festmacheeinrichtungen

Bateaux de navigation intérieure - Installations d'ancrage, d'accouplement, de remorquage, de halage et d'amarrage

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ICS:

47.020.50	Palubna oprema ter naprave	Deck equipment and installations
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EUROPEAN STANDARD
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EN 13573

July 2001

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English version

Inland navigation vessels - Anchoring, coupling, towing, hauling and mooring systems

Bateaux de navigation intérieure - Installations d'ancrage,
d'accouplement, de remorquage, de halage et d'amarrage

Fahrzeuge der Binnenschifffahrt - Anker-, Kupplungs-,
Schlepp-, Verhol- und Festmacheeinrichtungen

This European Standard was approved by CEN on 3 May 2001.

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 Management Centre 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This European Standard has been prepared by CEN /TC 15, "Inland navigation vessels", the secretariat of which is held by DIN.

This European Standard has to be implemented at national level, either by publication of an identical text or by endorsement, at the latest by January 2002, and conflicting national standards have to be withdrawn at the latest by January 2002.

The standard is intended to assist with the selection of the type and design of anchoring, coupling, towing, hauling and mooring systems on board.

The standard specifies requirements for anchoring, coupling, towing, hauling and mooring systems within the meaning of Council Directive 82/714/EEC of 4 October 1982 laying down technical requirements for inland waterway vessels.

This Standard contains bibliographical references.

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

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EN 13573:2001 (E)**1 Scope**

This European Standard specifies the safety requirements for the arrangement, accessibility and marking of anchoring, coupling, towing, hauling and mooring systems on inland navigation vessels.

Depending on the type, the dimensions, the intended use of the vessels as well as the waters on which they are operated, inland navigation vessels are equipped with anchoring, coupling, towing, hauling and mooring systems.

This standard does not apply to recreational craft according to Directive 94/25/EEC.

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 696, *Fibre ropes for general service – Polyamide*

EN 697, *Fibre ropes for general service – Polyester*

EN 698, *Fibre ropes for general service – Manila and sisal*

EN 699 *Fibre ropes for general service – Polypropylene*

EN 1261, *Fibre ropes for general service – Hemp*

EN 12339:1997, *Inland navigation vessels – Rope tubs*

EN 13281:2000, *Inland navigation vessels – Safety requirements for walkways and working places*

EN 13574:2001, *Inland navigation vessels – Permanently installed climbing devices with a length not exceeding 5 m*

prEN 13711:1999, *Inland navigation vessels – Safety requirements for winches for ship operation ¹⁾*

ISO 1704:1990, *Shipbuilding - Stud link anchor chains*

ISO 2408:1985, *Steel wire ropes for general purposes – Characteristics*

ISO 6218, *Inland navigation vessels – Coupling devices for push tows – Safety requirements and main dimensions ¹⁾*

3 Terms and definitions

For the purposes of this European Standard, the following definitions apply.

3.1**anchoring system**

system used to drop and raise the anchor or to lie at anchor

¹⁾ Standard in preparation

3.2

coupling system

system which is used to connect vessels firmly to each other; it allows the arrangement of coupled vessels either as push tows or vessels connected at the sides

3.3

towing system

system which is used to pull inland navigation vessels

3.4

hauling and mooring system

system on the deck which is used as a securing or guide point for hauling and mooring ropes

3.5

readily accessible

unhampered access to systems arranged adjacent to walkways so that there are neither obstructions nor discontinuities on the walkways

3.6

safe operation

operation of elements which are constructed and arranged in such a way that

- their location and function are clearly recognizable;
- they are located within immediate reach of the operator being in an upright or stooped position;
- they can be operated without considerable forcing;
- there is no danger of injuries during operations, e.g. caused by sharp edges in adjacent areas, and no danger of faulty operation

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4 Safety requirements, dimensions, strength

4.1 Anchoring system

4.1.1 General

Anchoring systems shall consist of anchor, anchor swivel and anchor chain or anchor wire rope. If available, they may additionally consist of winches, chain stoppers, chain lockers and hawses.

4.1.2 Anchor chain or anchor wire rope

Materials and quality shall conform to the requirements for studless anchor chains ¹⁾ or stud link anchor chains according to ISO 1704 or equivalent.

NOTE The anchor chain may be studded or without studs. Calibrated chains should be used as anchor chains.

Materials and quality of anchor wire ropes shall conform to ISO 2408 or be equivalent.

4.1.3 Anchor swivel

Between anchor and anchor chain or anchor wire rope, an anchor swivel shall be provided; the breaking force of which shall be at least 20 % higher than the minimum breaking force of the chain or anchor wire rope.

¹⁾ Standard in preparation

EN 13573:2001 (E)

4.1.4 Anchor winch

Winches shall be available for anchors with a mass greater than 50 kg. Anchor winches shall conform to EN 13711. For anchor masses exceeding 500 kg, winches with a motor drive shall be used.

Anchor winches may be set up in such a way that they can also be used as hauling winches.

4.1.5 Chain stopper

Chain stoppers shall be able to withstand the forces acting on them. The chain stopper shall be designed in such a way that it can be operated by one person without danger. This will be achieved e. g. by ensuring that the operator is positioned outside the area where the chain runs out.

4.1.6 Anchor hawses and anchor pockets

Design and construction of the anchor hawses and anchor pockets shall be such that the anchor is capable of being lowered or raised automatically and damage to other vessels due to raised anchors is prevented.

4.1.7 Chain lockers

The end of the chain shall be secured firmly on the ship. The securing device of the chain shall be appropriate to the breaking load of the anchor chain. For each chain a separate chain locker shall be provided.

The size and height of the chain locker shall be such that a direct and unhampered run of chain is ensured to the chain pipes even when the chain is fully stowed.

Non self-draining chain lockers shall be capable of being drained or have an opening to the peak.

Access to the chain locker and the standing area for relaying the chain shall conform to EN 13281.

4.2 Coupling system

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4.2.1 General

The coupling system consists of a pushing system (pushing platform, pushing shoulder, pushing horns) and mechanical (ropes, coupling devices, bollards, deflection sheaves) or hydraulic connecting devices.

The coupling system shall be designed so that the crew is not endangered under the most severe conditions referring to e.g. size of the push-tow, propulsion power, meteorological conditions, wave height etc.; possible dangers are wire ropes or hydraulic equipment breaking, squeezing and shearing points.

4.2.2 Requirements

The coupling system shall ensure that the coupled vessels remain in a fixed position in relation to each other.

The coupling system components shall not extend beyond the width of the push-tow.

The coupling system shall be organized in such a way that it is possible to couple loaded and discharged vessels to each other.

If wire ropes are used for coupling, there shall be at least two coupling devices or equivalent devices to tension the wire ropes.

Coupling systems shall be arranged in such a way that wire ropes are guided as close as possible to the deck and not over access hatchway covers.

4.2.3 Pushing system

Pushing vessels shall have a pushing system in the bow, pushed vessels in the stern.

4.2.4 Couplings

If rigid connecting elements are used, a single coupling may be provided, as long as this provides secure connection of the vessels.

For push tows consisting of a pushing and a pushed vessel, the coupling system may also allow for a controlled kinking. The necessary propulsion shall be able to take up the forces to be transmitted and to ensure the release from the kinked position. The kinking equipment shall be capable of being locked in the normal position to avoid unintended kinking.

4.2.5 Cross-overs

There shall be secure cross-overs between the coupled vessels. Cross-over aids shall conform to EN 13574.

4.2.6 Coupling devices

Coupling devices shall conform to ISO 6218 and shall be arranged in such a way that they can be operated safely by one person.

4.2.7 Deflection sheaves

Deflection sheaves shall be arranged in such a way to ensure controlled leading of the wire rope into the coupling devices. The minimum diameter of the sheaves for wire ropes shall be 5 times the diameter of the cable.

4.2.8 Wire ropes

Steel wire ropes with required minimum breaking force, conforming to ISO 2408 or equivalent with limited elongation and good ductility (flexible) shall be used for coupling.

Splices and steel wire rope ends shall be covered or wrapped.

4.3 Towing system

4.3.1 General

Towing systems shall consist of e.g. a towing hook or winch, towing beams with rope grabs or rubbing pieces and tow rope and stopper.

4.3.2 Requirements

Towing winches conforming to EN 13711 or towing hooks shall be provided as towing systems; these shall be located away from the propeller.

This does not apply to vessels which are helmed by rudder propellers or cycloidal propellers.

It shall be possible to release the hook safely from the wheelhouse. This is assumed to be the case if the releasing force at the hook is not more than 150 N and that in the wheelhouse not more than 250 N.

There shall be a rope grab on both sides of the stern towing beam.

4.3.3 Cable stopper

The strength of the cable stopper shall correspond to at least the breaking load of the towing cables. The cable stopper shall be designed and constructed in such a way that it can be operated safely by one person. It shall be possible to release the stopper when loaded.

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