



**SLOVENSKI STANDARD**  
**SIST EN 13711:2004**  
**01-september-2004**

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**Plovila za celinske vode – Vitli za ladje – Varnostne zahteve**

Inland navigation vessels - Winches for ship operation - Safety requirements

Fahrzeuge der Binnenschifffahrt - Winden für den Schiffsbetrieb -  
Sicherheitsanforderungen

Bateaux de navigation intérieure - Treuils pour le service navire - Prescriptions de  
sécurité

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Ta slovenski standard je istoveten z: **EN 13711:2002**

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**ICS:**

47.020.50	Palubna oprema ter naprave	Deck equipment and installations
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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 13711**

April 2002

ICS 47.020.50; 47.060

English version

## Inland navigation vessels - Winches for ship operation - Safety requirements

Bateaux de navigation intérieure - Treuils pour le service navire - Prescriptions de sécurité

Fahrzeuge der Binnenschifffahrt - Winden für den Schiffsbetrieb - Sicherheitsanforderungen

This European Standard was approved by CEN on 14 March 2002.

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, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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COMITÉ EUROPÉEN DE NORMALISATION  
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## Foreword

This document (EN 13711:2002) 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, by October 2002, and conflicting national standards have to be withdrawn by October 2002.

This standard contains bibliographical references.

The standard specifies requirements for winches for ship operation within the meaning of Council Directive 82/714/EEC of 4 October 1982 laying down technical requirements for inland waterway vessels

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 13711:2002 (E)****1 Scope**

This European Standard specifies safety requirements for winches for ship operation. These winches are windlasses, mooring winches, towing winches, mast and funnel winches, boat winches.

The standard is not applicable to:

- cargo winches as specified in ISO 3078;
- winches on recreational craft in accordance with "Directive 94/25/EC of the European Parliament and of the Council of 16 June 1994 on the approximation of laws, regulations and administrative provisions of the Member States relating to recreational craft";
- manually-operated coupling winches for push-tows as specified in ISO 6218;
- movable or fixed lifting devices (chain hoists etc.);
- rackwork and hydraulic equipment and similar devices (e.g. wheelhouse lift).

**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 13573, *Inland navigation vessels – Anchoring, coupling, towing and mooring devices*  
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EN ISO 11102-1, *Reciprocating internal combustion motors – Handle starting equipment – Part 1: Safety requirements and tests (ISO 11102-1:1997)*

**3 Terms and definitions**

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

**3.1****windlass**

a winch for dropping and hauling in anchors by means of a chain or rope

**3.2****mooring winch**

a winch for paying out and hauling in ropes or chains for hauling and mooring ships

**3.3****towing winch**

a winch for paying out, hauling in and holding ropes with which craft can be towed

**3.4****mast and funnel winch**

a winch with which masts or funnels can be folded or straightened

**3.5****boat winch; davit winch**

a winch with which boats can be lowered or hauled in

**3.6****winch with manual drive**

a winch which can be operated exclusively by muscle power

**3.7****winch with power drive**

a winch which can be operated exclusively by motor power

**3.8****winch with manual drive and power drive**

a winch which can be operated both by muscle power and motor power

**3.9****locking device**

a device designed to prevent the chain or the rope under load from running back unintentionally

**3.10****holding load**

maximum tension that can be maintained by a braking/locking system in the first layer

**3.11****drum load**

maximum tension measured at the rope exit when the winch is hoisting or hauling in at the nominal speed with the rope wound on the drum in a single layer

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**4 Safety requirements**

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**4.1 General specifications**

Winches shall be constructed so that their function is not adversely affected by vibration, the tilt of the vessel or the weather.

**4.2 Strength requirements**

**4.2.1** The drum load shall not exceed  $0,25 \times$  minimum breaking force of the design rope or chain.

**4.2.2** The holding load shall be between 0,8 and  $< 1,0$  of the minimum breaking force of the design rope or chain.

**4.2.3** All parts of the winches shall be designed and secured so that they withstand the minimum breaking force of the rope or breaking force of the chain with a safety factor of 1,3, relative to the yield point of the components.

**4.3 Installation**

Winches shall be installed as specified in EN 13573.

**4.4 Maintenance**

Winches shall be constructed so that they are accessible for maintenance work.

It shall be possible to check the brake linings visually without removing the cover.

Lubrication points shall be identifiable and readily accessible. They shall be arranged so that if lubrication is carried out correctly, the effectiveness of the safety devices is not impaired by dripping lubricant.

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### 4.5 Locking devices

Winches shall have locking devices preventing the rope or chain from running back unintentionally under load during lifting or making fast. They shall operate automatically and be constructed so that they can only be rendered ineffective by the use of tools.

Ratchet wheels and pawls shall not be made of cast iron

NOTE The locking devices can be designed, e.g. as

- ratchet wheel and pawl;
- self-acting brake or
- check valve.

### 4.6 Brakes

Winches shall be equipped with a brake designed for a holding load as specified in 4.2.2.

If a power driven brake is released, a hand-operated emergency release device shall be provided.

Brakes shall operate without producing any harmful impact or inadmissible temperature rise.

### 4.7 Operating elements

Operating elements shall be locked against unintentional operation; power drives and couplings shall be marked in accordance with their function.

Operating elements shall be arranged so that no hazards can occur during operation from the running rope or running chain.

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For winches with a power drive

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- a red emergency stop device shall be provided;
- the drive operating elements shall return automatically to the zero position when released.

### 4.8 Rope reels

Wire ropes shall be attached to the rope reel with a securing device so that the holding load is securely taken up with 3 windings of the rope.

The direction or rotation of the rope reel shall be identifiable with the wire rope wound on.

The rope reel shall have flanges or other suitable devices to prevent lateral run-off of the rope. Flanges shall be high enough that they project a distance of at least 1½ times the rope diameter above the outermost layer with the useful length of the rope fully wound on.

For wire ropes, the reel diameter shall be at least 16 times the nominal diameter of the rope.

### 4.9 Safety devices

If reciprocating internal combustion engines are started by means of a handle, it shall meet the requirements of EN ISO 11102-1 or equivalent.

Drawing-in points at the gearwheels and shaft flanges shall be fitted with guards. These shall not be capable of being detached without the use of a tool.



#### 4.10 Handle kick back limiter

4.10.1 The handles shall have devices to prevent kick back.

Kick back limiters shall be permanently installed. They shall be designed and arranged so that they can only be rendered ineffective with the use of tools. Safe turning of the handle shall be ensured in each direction of rotation under load, whatever the gearing between the handle shaft and the load shaft. When releasing the handle, the kick back shall not exceed 150 mm and the handle shall not come off.

4.10.2 If there are two handles on a winch, they shall be designed so that operation of one of them does not impair the kick back protection on the other.

#### 4.11 Manual drive

4.11.1 The manual drive of the winches shall have gearing that limits the maximum force to be applied to the handle to 150 N.

4.11.2 The direction of rotation of the handle shall remain the same whatever the gearing.

4.11.3 Handles shall be secured against slipping off and unintentional pulling off.

4.11.4 Handles shall have rotatable grips that cannot be removed.

4.11.5 There shall be no crushing points between the grip and the other handle parts or between the handles and the fixed and moving parts of the winch.

#### 4.12 Handles on winches with manual drive and power drive

4.12.1 Device to prevent simultaneous running of the manual drive

Winches with manual drive and power drive shall be equipped so that the power drive cannot set the manual drive shaft in motion.

4.12.2 Handles

The requirements of 4.10 and 4.11 shall apply to handles of winches with manual drive and power drive.

### 5 Additional requirements for special winches

#### 5.1 Windlasses

5.1.1 Every cable lifter and every rope reel shall be capable of being uncoupled individually.

5.1.2 Couplings shall be designed so that they are capable of being uncoupled if the winch is fitted with a load-holding brake or handle kick back limiter. Couplings shall not be capable of being tightened or undone automatically. Screw-down nuts shall have sufficient lateral clearance for tightening or undoing the couplings.

5.1.3 Every cable lifter and every rope reel shall be equipped with its own brake as specified in 4.6.

#### 5.2 Mooring winches

5.2.1 Rope reels of mooring winches shall be capable of being uncoupled. This does not apply to winches with power drive capable of operating in both directions of rotation.

5.2.2 Every rope reel shall be equipped with its own brake as specified in 4.6.