

**Kraanad. Elektrilised vintsid ja tõstemehhanismid.  
Osa 1: Elektrilised tõstemehhanismid  
KONSOLIDEERITUD TEKST**

Cranes - Power driven winches and hoists - Part 1: Power driven winches CONSOLIDATED TEXT

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 14492-1:2006+A1:2009 sisaldab Euroopa standardi EN 14492-1:2006+A1:2009 ingliskeelset teksti.</p> <p>Standard on kinnitatud Eesti Standardikeskuse 31.12.2009 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 21.10.2009.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 14492-1:2006+A1:2009 consists of the English text of the European standard EN 14492-1:2006+A1:2009.</p> <p>This standard is ratified with the order of Estonian Centre for Standardisation dated 31.12.2009 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.</p> <p>Date of Availability of the European standard text 21.10.2009.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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English Version

## Cranes - Power driven winches and hoists - Part 1: Power driven winches

Appareils de levage à charge suspendue - Treuils et palans motorisés - Partie 1: Treuils motorisés

Krane - Kraftgetriebene Winden und Hubwerke - Teil 1: Kraftgetriebene Winden

This European Standard was approved by CEN on 19 August 2006 and includes Amendment 1 approved by CEN on 6 August 2009.

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## Foreword

This document (EN 14492-1:2006+A1:2009) has been prepared by Technical Committee CEN/TC 147 "Cranes — Safety", the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by April 2010, and conflicting national standards shall be withdrawn at the latest by April 2010.

Attention is drawn to the possibility 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 includes Amendment 1, approved by CEN on 2009-08-06.

This document supersedes EN 14492-1:2006.

The start and finish of text introduced or altered by amendment is indicated in the text by tags  $\boxed{A_1}$   $\boxed{A_1}$ .

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

$\boxed{A_1}$  For relationship with EU Directive(s), see informative Annexes ZA, ZB and ZC which are integral parts of this document.  $\boxed{A_1}$

For the relationship with other European Standards for cranes, see informative Annex G.

This is the first part of the standard "Cranes — Power driven winches and hoists". The parts of the standard are:

- Part 1: Power driven winches
- Part 2: Power driven hoists

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

## Introduction

**A1** This European standard is a harmonized standard to provide one means for power driven winches to conform to the essential health and safety requirements of the Machinery Directive 98/37/EC and the Machinery Directive 2006/42/EC. **A1**

The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this European Standard.

This European Standard is a type C standard as stated in EN 12100-1.

When provisions of this type C standard are different from those stated in type A or B standards, the provisions of this type C standard take precedence over the provision of the other standards, for machines that have been designed and built in accordance with the provisions of this type C standard.

## 1 Scope

This European Standard is applicable to the design, information for use, maintenance and testing of power driven winches for which the prime mover is an electric motor, hydraulic motor, internal combustion motor or pneumatic motor. They are designed for the lifting and lowering of loads which are suspended on hooks or other load handling devices or for the lifting and lowering of loads on inclined planes or the exclusive pulling of loads on planes which are normally horizontal.

NOTE Within the period of utilization, the place of use of a winch may be variable.

As a rule, a winch is used without any additional transport movement.

This European Standard is applicable to the following types of winch:

- a) rope winches;
- b) chain winches;
- c) belt winches, except steel belts used as hoisting media;
- d) traction winches.

These types of winches a) to d) also include the following specific applications:

- vehicle recovery winches;
- winches on boat trailers;
- forestry winches;
- winches for stationary offshore applications;
- winches for drilling applications;
- winches to be used exclusively for the pulling of loads.

NOTE Examples are shown in Annex A.

This European Standard does not apply to:

- power-driven hoists in accordance with EN 14492-2;
- winches for seagoing vessels and mobile offshore units;
- winches for the lifting of persons;
- NGL building hoists in accordance with EN 14492-2;
- winches for the handling of hot molten masses (risk covered by EN 14492-2).

The significant hazards covered by this European Standard are identified in Clause 4.

This European Standard does not specify additional requirements for hazards related to the use of winches in explosive atmospheres in underground works.

This document applies to winches manufactured after approval by CEN with a transitional period of 2 years.

## 2 Normative references

The following referenced documents are indispensable for the application 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.

EN 418:1992, *Safety of machinery — Emergency stop equipment, functional aspects — Principles for design*

EN 563:1994, *Safety of machinery — Temperatures of touchable surfaces — Ergonomics data to establish temperature limit values for hot surfaces*

EN 818-1:1996, *Short link chain for lifting purposes — Safety — Part 1: General conditions of acceptance*

EN 818-7:2002, *Short link chain for lifting purposes — Safety — Part 7: Fine tolerance hoist chain, Grade T (Types T, DAT and DT)*

**A<sub>1</sub>** *deleted text* **A<sub>1</sub>**

EN 982:1996, *Safety of machinery — Safety requirements for fluid power systems and their components — Hydraulics*

EN 983:1996, *Safety of machinery — Safety requirements for fluid power systems and their components — Pneumatics*

EN 1127-1:1997, *Explosive atmospheres — Explosion prevention and protection — Part 1: Basic concepts and methodology*

EN 12077-2:1998, *Cranes — Safety — Requirements for health and safety — Part 2: Limiting and indicating devices*

EN 12644-2:2000, *Cranes — Information for use and testing — Part 2: Marking*

EN 13001-2:2004, *Cranes — General design — Part 2: Load actions*

EN 13411-3:2004, *Terminations for steel wire ropes — Safety — Part 3: Ferrules and ferrule-securing*

EN 13411-4:2002, *Terminations for steel wire ropes — Safety — Part 4: Metal and resin socketing*

EN 13411-6:2004, *Terminations for steel wire ropes — Safety — Part 6: Asymmetric wedge socket*

EN 13411-7:2003, *Terminations for steel wire ropes — Safety — Part 7: Symmetric wedge socket*

- EN 13463-1:2001, *Non-electrical equipment for potentially explosive atmospheres — Part 1: Basic method and requirements*
- EN 13463-5:2003, *Non-electrical equipment intended for use in potentially explosive atmospheres — Part 5: Protection by constructional safety "c"*
- EN 13557:2003, *Cranes — Controls and control stations*
- EN 14492-2:2006, *Cranes — Power driven winches and hoists — Part 2: Power driven hoists*
- EN 60034-1:2004, *Rotating electrical machines — Part 1: Rating and performance (IEC 60034-1:2004)*
- EN 60079-0:2004, *Electrical apparatus for explosive gas atmospheres — Part 0: General requirements (IEC 60079-0:2004)*
- EN 60079-7:2003, *Electrical apparatus for explosive gas atmospheres — Part 7: Increased safety 'e' (IEC 60079-7:2001)*
- EN 60204-32:1998, *Safety of machinery — Electrical equipment of machines — Part 32: Requirements for hoisting machines (IEC 60204-32:1998)*
- EN 60529:1991, *Degrees of protection provided by enclosures (IP-code)*
- EN 61000-6-2:2005, *Electromagnetic compatibility (EMC) — Part 6-2: Generic standards — Immunity for industrial environments (IEC 61000-6-2:2005)*
- EN 61000-6-3:2001, *Electromagnetic compatibility (EMC) — Part 6-3: Generic standards; Emission standard for residential, commercial and light-industrial environments (IEC 61000-6-3:1996, modified)*
- EN 61000-6-4:2001, *Electromagnetic compatibility (EMC) — Part 6-4: Generic standards; Emission standard for industrial environments (IEC 61000-6-4:1997, modified)*
- EN ISO 3744:1995, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering method in an essential free field over a reflecting plane (ISO 3744:1994)*
- EN ISO 4871:1996, *Acoustics — Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)*
- EN ISO 11201:1995, *Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at a work station and at other specified positions — Engineering method in an essentially free field over a reflecting plane (ISO 11201:1995)*
- EN ISO 11688-1:1998, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 1: Planning (ISO/TR 11688-1:1995)*
- EN ISO 12100-1:2003, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology (ISO 12100-1:2003)*
- EN ISO 12100-2:2003, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles (ISO 12100-2:2003)*
- [A1]** EN ISO 13849-1, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849:2006)* **[A1]**
- ISO 606:2004, *Short-pitch transmission precision roller and bush chains, attachments and associated chain sprockets*
- ISO 4301-1:1986, *Cranes and lifting appliances — Classification — Part 1: General*
- ISO 4308-1:2003, *Cranes and lifting appliances — Selection of wire ropes — Part 1: General*

ISO 12482-1:1995, *Cranes — Condition monitoring — Part 1: General*

FEM 1.001:1998, *Rules for the design of hoisting appliances, booklets 1, 2, 3, 4, 5 and 8*

FEM 9.901:1991, *Rules for the design of series lifting equipment and cranes equipped with series lifting equipment*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100:2003 and the following apply.

#### 3.1

##### **anchorage**

complete device to anchor the hoisting media to a fixed point

#### 3.2

##### **belt drive**

system of belts, belt pulleys, belt drums and belt anchorages

#### 3.3

##### **chain drive**

system of fine tolerance steel link chains, roller chains, driven and non-driven chain wheels and chain anchorages

#### 3.4

##### **direct control**

main power circuit is directly controlled by the hand controlled actuator without additional means between the actuator and the main power circuit

#### 3.5

##### **fleet angle**

angle  $\beta$  or  $\beta - \alpha$  or  $\beta + \alpha$  (see Figure 1)