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Cranes - Power driven winches and hoists - Part 2: Power driven hoists

Krane - Kraftgetriebene Winden und Hubwerke - Teil 2: Kraftgetriebene Hubwerke

Appareils de levage à charge suspendue - Treuils et palans motorisés - Partie 2 : Palans et treuils de levage motorisés

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ICS:

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

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prEN 14492-2

August 2026

ICS 53.020.20

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**Cranes - Power driven winches and hoists - Part 2: Power
driven hoists**

Appareils de levage à charge suspendue - Treuils et
palans motorisés - Partie 2 : Palans et treuils de levage
motorisés

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

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 147.

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prEN 14492-2:2026 (E)**European foreword**

This document (prEN 14492-2:2026) has been prepared by Technical Committee CEN/TC 147 “Cranes-Safety”, the secretariat of which is held by SFS.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 14492-2:2019.

prEN 14492-2:2026 includes the following significant technical changes with respect to EN 14492-2:2019:

- update of reference documents and cross-references;
- revision of grammar and linguistic consistency;
- revision of the List of significant hazards and its inclusion in Annex H;
- split of subclause 5.1 into subclauses 4.1, 4.2, 4.3 and 4.4 ;
- addition of new subclauses 4.5.6, 4.16.3.3 and 4.16.9 ;
- removal of Annex A ;
- re-numbering of clauses and Annexes;
- revision of Annexes E, N, ZA, ZB and Bibliography.

This is the second 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 [the present document].

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

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA and Annex ZB, which are an integral part of this document.

Introduction

This document has been prepared to be harmonized standard to provide one means for power driven hoists to conform to the essential health and safety requirements of the Regulation (EU) 2023/1230 (Machinery) and essential safety requirements of EU Directive 2014/34/EU (ATEX).

This document is a type C standard as stated in EN ISO 12100:2010.

This document is of relevance, in particular, for the following stakeholder groups representing the market players with regard to machinery safety:

- machine manufacturers (small, medium and large enterprises);
- health and safety bodies (regulators, accident prevention organizations, market surveillance, etc.).

Others can be affected by the level of machinery safety achieved with the means of the document by the above-mentioned stakeholder groups:

- machine users/employers (small, medium and large enterprises);
- machine users/employees (e.g. trade unions, organizations for people with specific needs);
- service providers, e.g. for maintenance (small, medium and large enterprises);
- consumers (in case of machinery intended for use by consumers).

The above-mentioned stakeholder groups have been given the possibility to participate at the drafting process of this document.

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

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

1 Scope

This document is applicable to the design, information for use, maintenance and testing of power driven hoists, compact or open construction, with or without trolleys for which the prime mover is an electric, hydraulic or pneumatic motor. They are designed for the lifting and lowering of loads that are suspended on hooks or other load lifting attachments. Hoists can be used either in cranes, in other machines, e.g. rail dependent storage and retrieval equipment, monorail conveyors or by itself.

This document is applicable to the following types of hoists and applications:

- rope hoists;
- chain hoists;
- belt hoists;
- NGL building hoists;
- winches used for lifting operation;
- hoists designed for holding stationary loads above persons;
- hoists designed for high risk applications.

This document does not apply to belt hoists with steel belts as hoisting media.

This document does not apply to builders' hoists for transportation of goods having a guided platform or having a guided load carrying device.

This document is not applicable to the following hazards:

- this document does not cover hazards related to the lifting of persons.

This document does not specify additional requirements for hazards related to the use of hoists in explosive atmospheres in underground mines.

This document does not address the hazards related to autonomous operation and use of self-evolving behaviour of the power driven hoists.

The significant hazards covered by this document are identified in Annex H.

This document is not applicable to power driven hoists manufactured before the date of its publication.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 81-50:2020, *Safety rules for the construction and installation of lifts — Examinations and tests — Part 50: Design rules, calculations, examinations and tests of lift components*

EN 818-1:1996+A1:2008, *Short link chain for lifting purposes — Safety — Part 1: General conditions of acceptance*

EN 818-7:2002+A1:2008, *Short link chain for lifting purposes — Safety — Part 7: Fine tolerance hoist chain, Grade T (Types T, DAT and DT)*

EN 1127-1:2019, *Explosive atmospheres — Explosion prevention and protection — Part 1: Basic concepts and methodology*

EN 12077-2:2024, *Cranes safety — Requirements for health and safety — Part 2: Limiting and indicating devices*

EN 13001-1:2015, *Cranes — General design — Part 1: General principles and requirements*

EN 13001-2:2021, *Crane safety — General design — Part 2: Load actions*

EN 13001-3-1:2025, *Cranes — General design — Part 3-1: Limit states and proof competence of steel structure*

EN 13001-3-3:2014, *Cranes — General design — Part 3-3: Limit states and proof of competence of wheel/rail contacts*

EN 13001-3-5:2025, *Cranes — General design — Part 3-5: Limit states and proof of competence of forged and cast hooks*

EN 13135:2013+A1:2018, *Cranes — Safety — Design — Requirements for equipment*

EN 13557:2024, *Cranes — Control devices and control stations*

EN 13586:2020, *Cranes — Access*

EN IEC 60034-5:2020,¹ *Rotating electrical machines — Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code) — Classification (IEC 60034-5:2020)*

EN IEC 60079-0:2018,² *Explosive atmospheres — Part 0: Equipment — General requirements (IEC 60079-0:2017)*

EN IEC 60079-14:2024, *Explosive atmospheres — Part 14: Electrical installation design, selection and installation of equipment, including initial inspection (IEC 60079-14:2024)*

EN IEC 60204-32:2025, *Safety of machinery — Electrical equipment of machines — Part 32: Requirements for hoisting machines (IEC 60204-32:2023)*

EN 60529:1991,³ *Degrees of protection provided by enclosures (IP Code) (IEC 60529)1*

EN 60947-5-5:1997,⁴ *Low-voltage switchgear and controlgear — Part 5-5: Control circuit devices and switching elements — Electrical emergency stop device with mechanical latching function*

EN IEC 61000-6-2:2019, *Electromagnetic compatibility (EMC) — Part 6-2: Generic standards — Immunity standard for industrial environments (IEC 61000-6-2:2016)*

EN IEC 61000-6-4:2019, *Electromagnetic compatibility (EMC) — Part 6-4: Generic standards — Emission standard for industrial environments (IEC 61000-6-4:2018)*

¹ As impacted by EN IEC 60034-5:2020/AC:2024-01

² As impacted by EN IEC 60079-0:2018/A11:2024

³ As impacted by EN 60529:1991/A1:2000, EN 60529:1991/A2:2013, EN 60529:1991/A2:2013/AC:2019-02, EN 60529:1991/AC:2016-12, EN 60529:1991/corrigendum May 1993

⁴ As impacted by EN 60947-5-5:1997/A1:2005, EN 60947-5-5:1997/A11:2013, EN 60947-5-5:1997/A2:2017

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EN IEC 61800-3:2018, *Adjustable speed electrical power drive systems — Part 3: EMC requirements and specific test methods (IEC 61800-3:2017)*

EN 62745:2017,⁵ *Safety of machinery — Requirements for cableless control systems of machinery (IEC 62745:2017)*

EN ISO 3744:2026, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering methods for an essentially free field over a reflecting plane (ISO 3744:2025, including corrected version 2026-01)*

EN ISO 4413:2010, *Hydraulic fluid power — General rules and safety requirements for systems and their components (ISO 4413:2010)*

EN ISO 4414:2010, *Pneumatic fluid power — General rules and safety requirements for systems and their components (ISO 4414:2010)*

EN ISO 4871:2009, *Acoustics — Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)*

EN ISO 11201:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions in an essentially free field over a reflecting plane with negligible environmental corrections (ISO 11201:2010)*

EN ISO 11688-1:2009, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 1: Planning (ISO/TR 11688-1:1995)*

EN ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction (ISO 12100:2010)*

EN ISO 13732-1:2008, *Ergonomics of the thermal environment — Methods for the assessment of human responses to contact with surfaces — Part 1: Hot surfaces (ISO 13732-1:2006)*

EN ISO 13849-1:2023, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2023)*

EN ISO 13850:2015, *Safety of machinery — Emergency stop function — Principles for design (ISO 13850:2015)*

EN ISO 14120:2015, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards (ISO 14120:2015)*

EN ISO 20607:2019, *Safety of machinery — Instruction handbook — General drafting principles (ISO 20607:2019)*

EN ISO 80079-36:2016,⁶ *Explosive atmospheres — Part 36: Non-electrical equipment for explosive atmospheres — Basic method and requirements (ISO 80079-36:2016)*

ISO 606:2015, *Short-pitch transmission precision roller and bush chains, attachments and associated chain sprockets*

⁵ As impacted by EN 62745:2017/A11:2020

⁶ As impacted by EN ISO 80079-36:2016/AC:2019

ISO 3864-1:2011, *Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs and safety markings*

ISO 3864-2:2016, *Graphical symbols — Safety colours and safety signs — Part 2: Design principles for product safety labels*

ISO 3864-3:2024, *Graphical symbols — Safety colours and safety signs — Part 3: Design principles for graphical symbols for use in safety signs*

ISO 3864-4:2011, *Graphical symbols — Safety colours and safety signs — Part 4: Colorimetric and photometric properties of safety sign materials*

ISO 4306-1:2007, *Cranes — Vocabulary — Part 1: General*

ISO 4309:2017, *Cranes — Wire ropes — Care and maintenance, inspection and discard*

ISO 12482:2014, *Cranes — Monitoring for crane design working period*

ISO 16625:2025, *Cranes and hoists — Selection of wire ropes, drums and sheaves*

3 Terms, definitions, symbols and abbreviations

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100:2010 and ISO 4306-1:2007 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1.1

belt drive

system of belts as hoisting medium including related belt pulleys, belt drums and belt anchorages

Note 1 to entry: Belts in transmissions of drive forces are excluded.

3.1.2

chain drive

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

3.1.3

chain anchorage

arrangement comprising the parts which connect the loaded chain end termination to the major load bearing structure, e.g. pins, bolts, tension rods

3.1.4

belt anchorage

arrangement comprising the parts which connect the belt end termination to the major load bearing structure, e.g. pins, bolts, tension rods, the belt fastening on the drum are not included

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3.1.5

working coefficient for ropes, chains and belts

ratio between the minimum breaking force and the maximum static tensile force of the ropes, chains and belts under rated capacity m_{RC}

3.1.6

direct control

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

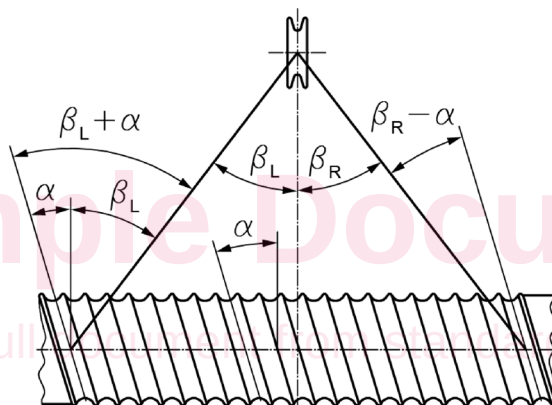
3.1.7

fleet angle

angle between the rope axis and the groove direction of a drum or sheave, at the point where rope enters the drum or sheave

Note 1 to entry: In the Figure 1 the fleet angles are β_L , β_R , $\beta_L + \alpha$ and $\beta_R - \alpha$.

Note 2 to entry: For an un-grooved drum, set the angle $\alpha = 0$.

**Key**

β_L , β_R fleet angles on the sheave

$\beta_L + \alpha$, $\beta_R - \alpha$ fleet angles on the drum

α angle of the grooves on the drum

Figure 1 — Fleet angle

3.1.8

hoist

machine for lifting and lowering loads, freely suspended or guided or supported on inclined planes, over predetermined distances, with or without trolleys

3.1.9

hoist load m_H

suspended load which includes all the masses of a load equal to the rated capacity of the hoist, the hoist medium and the fixed load lifting attachments, e.g. hooks, grabs, magnets, lifting beams, vacuum lifters

3.1.10

hoist medium

part of the hoist and is either rope, belt, steel link chain or roller chain

3.1.11**overpressure**

pressure exceeding the rated pressure

3.1.12**rated pressure**

maximum pressure in hydraulic or pneumatical systems at which the component is intended to operate for a number of repetitions sufficient to assure the specified service life

3.1.13**indirect control**

main power circuit is controlled by additional means between the hand-controlled actuator and the main power circuit

3.1.14**maximum speed**

maximum of all speeds in hoisting or lowering direction

Note 1 to entry: For inverter driven hoists, this speed can occur at the maximum frequency but with a load smaller than the rated capacity of the hoist.

3.1.15**NGL building hoist****Non Guided Load building hoist**

multi-layer rope drum hoist with a rated capacity of up to 500 kg characterised by frequent temporary installation on the construction site by the use of interchangeable supporting structures matching with the hoists frame

3.1.16**power source**

energy to drive the prime mover of a hoist, e.g. electrical, hydraulic, pneumatic

3.1.17**rated capacity**

m_{RC}

maximum load that the hoist is designed to lift

Note 1 to entry: In the case of hoists with multi-layer winding, this applies independent of the layer of the rope on the drum.

3.1.18**rated capacity limiter**

device that automatically prevents the hoist from handling loads in excess of its rated capacity, taking into account the dynamic effects during normal operational use

Note 1 to entry: This can be achieved by limiting the force flow (direct acting rated capacity limiter) or by switching off the energy supply to the lifting drive and stopping the lifting movement (indirect acting rated capacity limiter).

Note 2 to entry: Rated capacity limiter is also called a load limiter or lifting force limiter.