SLOVENSKI STANDARD
oSIST prEN 13852-3:2018

01-november-2018

Dvigala (žerjavi) - Dvigala na plavajočih objektih - 3. del: Lahka dvigala na plavajočih objektih

Cranes - Offshore cranes - Part 3: Light offshore cranes

Krane - Offshore-Krane - Teil 3: Offshore-Krane mit kleiner Kapazität

Appareils de levage à charge suspendue - Grues off-shore - Partie 3 : Grues off-shore légères (potence off-shore)

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47.020.40	Dvigalna oprema in oprema za pretovor	Lifting and cargo handling equipment
53.020.20	Dvigala	Cranes

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Cranes - Offshore cranes - Part 3: Light offshore cranes

Krane - Offshore-Krane - Teil 3: Offshore-Krane mit kleiner Kapazität

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

If this draft becomes a European Standard, 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.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (prEN 13852-3:2018) has been prepared by Technical Committee CEN/TC 147 “Cranes - safety”, the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

Introduction

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

This European Standard has been prepared to provide one means for light offshore cranes to conform to the essential health and safety requirements of the Machinery Directive.

The machinery concerned and the extent to which hazards, hazardous situations and hazardous events are covered and indicated in the scope of this document (see Clause 1).

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

1 Scope

This document applies to light offshore cranes including their supporting pedestals and structures.

NOTE The supporting pedestal and structures such as columns and boom rests are covered by this standard to the extent where their main purpose is to support the crane.

This document is applicable to light offshore cranes, whose structures are made of steel.

The following characteristics distinguish light offshore cranes from other types of offshore cranes:

— maximum rated capacity 20 tonnes, maximum load moment 300 tm;

— limitation for off-board lifting operation H_s = 2,0 m and wind speed 15 m/s (3s gust);

— maximum number of working cycles class U_3 ($C \leq 1{,}25 \times 10^5$) according to EN 13001-1.

This document gives requirements for all significant hazards, hazardous situations and events relevant to light offshore cranes, when used as intended and under conditions foreseen by the risk assessment (see Clause 4).

This document is not applicable for:

a) transportation, assembly, disabling, scrapping or changing the configuration of the crane;

b) non-fixed load lifting attachments, i.e. any item between the hook and the load;

c) lifting operations in ambient temperatures below –20 °C;

d) lifting operations in ambient temperatures above 45 °C;

e) lifting operations involving more than one crane;

f) accidental loads due to collisions or earthquakes;

g) emergency personnel rescue operations (except training);

h) subsea lifting operations;

i) general purpose offshore cranes, floating cranes and motion compensated cranes.

This document is applicable for the lifting of personnel.

This document is applicable to light offshore cranes, which are manufactured after the date of approval by CEN of this document.

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 349, *Safety of machinery* — Minimum gaps to avoid crushing of parts of the human body

EN 614-1, *Safety of machinery — Ergonomic design principles — Part 1: Terminology and general principles*

EN 614-2, *Safety of machinery — Ergonomic design principles — Part 2: Interactions between the design of machinery and work tasks*

EN 795, *Personal fall protection equipment - Anchor devices*

EN 842, *Safety of machinery — Visual danger signals — General requirements, design and testing*

EN 894-1, *Safety of machinery – Ergonomics requirements for the design of displays and control actuators – Part 1: General principles for human interactions with displays and control actuators*

EN 894-2, *Safety of machinery – Ergonomic requirements for the design of displays and control actuators – Part 2: Displays*

EN 894-3, *Safety of machinery — Ergonomics requirements for the design of displays and control actuators — Part 3: Control actuators*

EN 1127-1:2011, *Explosive atmospheres - Explosion prevention and protection - Part 1: Basic concepts and methodology*

EN 10204, *Metallic products - Types of inspection documents*

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

EN 12385-1, *Steel wire ropes — Safety — Part 1: General requirements*

EN 12385-2, *Steel wire ropes — Safety — Part 2: Definitions, designation and classification*

EN 12385-3, *Steel wire ropes — Safety — Part 3: Information for use and maintenance*

EN 12385-4, *Steel wire ropes — Safety — Part 4: Stranded ropes for general lifting applications*

EN 12644-1, *Cranes — Information for use and testing — Part 1: Instructions*

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

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

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

EN 13001-3-1:2012+A2:2018, *Cranes — General design — Part 3-1: Limit states and proof of competence of steel structure*

EN 13001-3-2, *Cranes — General design — Part 3-2: Limit states and proof of competence of wire ropes in reeving systems*

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

FprEN 13001-3-4, *Cranes — General design — Part 3-4: Limit states and proof of competence of machinery*

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

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

EN 13557, *Cranes — Controls and control stations*

EN 13586, *Cranes — Access*

EN 14502-1, *Cranes — Equipment for the lifting of persons — Part 1: Suspended baskets*

EN 60079-0, *Explosive atmospheres — Part 0: Equipment — General requirements*

EN 60079-14, *Explosive atmospheres — Part 14: Electrical installations design, selection and erection*

EN 60204-32, *Safety of machinery — Electrical equipment of machines — Part 32: Requirements for hoisting machines*

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

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

EN ISO 898-1, *Mechanical properties of fasteners made of carbon steel and alloy steel — Part 1: Bolts, screws and studs with specified property classes — Coarse thread and fine pitch thread (ISO 898-1)*

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

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

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

EN ISO 7731, *Ergonomics — Danger signals for public and work areas — Auditory danger signals (ISO 7731)*

EN ISO 11201, *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)*

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

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

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

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

EN ISO 13857, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857)*

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

EN ISO 19353, *Safety of machinery — Fire prevention and fire protection (ISO 19353)*

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

EN 60529, *Degrees of protection provided by enclosures (IP Code) (IEC 60529)*

EN 61310-1, *Safety of machinery — Indication, marking and actuation — Part 1: Requirements for visual, acoustic and tactile signals*

EN 61310-2, *Safety of machinery — Indication, marking and actuation — Part 2: Requirements for marking*

EN 61310-3, *Safety of machinery — Indication, marking and actuation — Part 3: Requirements for the location and operation of actuators*

ISO 9927-1, *Cranes — Inspections — Part 1: General*

ISO 12478-1:1997, *Cranes — Maintenance manual — Part 1: General*

ISO 12480-1:1997, *Cranes — Safe use — Part 1: General*

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

ISO 20332, *Cranes — Proof of competence of steel structures*

3 Terms and definitions

For the purposes of this document, the following terms and definitions in EN ISO 12100 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
actual hook load
total static weight of the load including any equipment placed between the load and the hook

3.2
automatic overload protection system (AOPS)
system that automatically safeguards and protects the crane against overload during offboard lifts by allowing the hook to be pulled away from the crane, without causing significant damage to the crane

3.3
component
single part or assembly of parts of a crane, which is subjected to load effects (e.g. wire ropes, stationary or running, traverse beams, pendant bars, rope sheaves, axles, gears, couplings, brakes, hoists, hydraulic cylinders, shafts, shackles, swivels and pins)

3.4
primary component
component (usually in the main load path) which is essential for the mechanical and structural integrity of the crane, e.g. boom section, slewing bearing, hoist rope and hook