



SLOVENSKI STANDARD
SIST EN 12999:2020/oprA1:2023
01-maj-2023

Žerjavi - Nakladalni žerjavi - Dopolnilo A1

Cranes - Loader cranes

Krane - Ladekrane

Appareils de levage à charge suspendue - Grues de chargement

Ta slovenski standard je istoveten z: EN 12999:2020/prA1

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ICS:

53.020.20 Dvigala Cranes

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EUROPEAN STANDARD
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English Version

Cranes - Loader cranes

Appareils de levage à charge suspendue - Grues de
chargement

Krane - Ladekrane

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

This draft amendment A1, if approved, will modify the European Standard EN 12999:2020. If this draft becomes an amendment, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration.

This draft amendment was established by CEN 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



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 (EN 12999:2020/prA1:2023) has been prepared by Technical Committee CEN/TC 147 “Cranes-Safety”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

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

For relationship with EU Directive(s) / Regulation(s), see informative Annex ZA, which is an integral part of EN 12999:2020 and this document.

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https://standards.iteh.ai/catalog/standards/sist/bd938b41-0186-437b-9260-812c48e4533b/sist-en-12999-2020-opra1-2023](https://standards.iteh.ai/catalog/standards/sist/bd938b41-0186-437b-9260-812c48e4533b/sist-en-12999-2020-opra1-2023)

EN 12999:2020/prA1:2023 (E)**1 Modifications to “European foreword”**

Replace the text of the whole clause with the following:

“

This document (EN 12999:2020+A1:202X) has been prepared by Technical Committee CEN/TC 147 “Cranes - Safety”, the secretariat of which is held by DIN.

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 XXXX, and conflicting national standards shall be withdrawn at the latest by XXXX.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 12999:2020.

The major changes compared to EN 12999:2020 are the following:

- addressing the risk to be crushed by stabilizer legs with powered tilting devices (5.8.1, 5.6.1.3, C.2.5);
- clarification of cabin type (crane or vehicle) throughout the document;
- clarifying that timber handling cranes may only be operated from a high seat or a cabin (5.8.1);
- changing into a recommendation the requirement to make an additional stability test after having completed a stability test with the test pressure method (6.2.5.3);
- adding requirement of sufficient field of view when operating the crane from the vehicle cabin (5.8.1).

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

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

“

2 Modifications to Clause 2, “Normative references”

Replace the text of the whole clause with the following:

“

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.

NOTE In the event of conflicting statements between referenced documents and this document, the statements in this document apply.

EN 1677-2:2000+A1:2008, *Components for slings - Safety - Part 2: Forged steel lifting hooks with latch, Grade 8*

EN 12077-2:1998+A1:2008, *Cranes safety - Requirements for health and safety - Part 2: Limiting and indicating devices*

EN 14492-2:2019, *Cranes - Power driven winches and hoists - Part 2: Power driven hoists*

EN 12644-1:2001+A1:2008, *Cranes - Information for use and testing - Part 1: Instructions*

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 13001-3-1:2012+A2:2018, *Cranes - General Design - Part 3-1: Limit States and proof competence of steel structure*

EN 13001-3-2:2014, *Cranes - General design - Part 3-2: Limit states and proof of competence of wire ropes in reeving systems*

EN 13001-3-5:2016+A1:2021, *Cranes - General design - Part 3-5: Limit states and proof of competence of forged and cast hooks*

EN 13001-3-6:2018+A1:2021, *Cranes - General design - Part 3-6: Limit states and proof of competence of machinery - Hydraulic cylinders*

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

EN 13557:2003+A2:2008, *Cranes - Controls and control stations*

EN 13586:2020, *Cranes - Access*

EN 14033-2:2017, *Railway applications - Track - Railbound construction and maintenance machines - Part 2: Technical requirements for travelling and working*

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)*

EN 60204-32:2008, *Safety of machinery - Electrical equipment of machines - Part 32: Requirements for hoisting machines (IEC 60204-32:2008)*

EN 62745:2017, *Safety of machinery - Requirements for cableless control systems of machinery*

EN ISO 898-1:2013, *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 898-1:2013)*

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EN ISO 3744:2010, *Acoustics - Determination of sound power levels and sound energy levels of noise sources using sound pressure - Engineering methods for an essentially free field over a reflecting plane (ISO 3744:2010)*

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

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

EN ISO 5353:1998, *Earth-moving machinery, and tractors and machinery for agriculture and forestry - Seat index point (ISO 5353:1995)*

EN ISO 6892-1:2019, *Metallic materials - Tensile testing - Part 1: Method of test at room temperature (ISO 6892-1:2019)*

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 13849-1:2015, *Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design (ISO 13849-1:2015)*

EN ISO 13849-2:2012, *Safety of machinery - Safety-related parts of control systems - Part 2: Validation (ISO 13849-2:2012)*

EN ISO 13854:2019, *Safety of machinery - Minimum gaps to avoid crushing of parts of the human body (ISO 13854:2017)*

EN ISO 13857:2019, *Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857:2019)*

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

“

3 Modifications to Clause 3, “Terms, definitions, illustration of parts and abbreviated terms”

Under 3.1.2, add item 3.1.2.18:

“

3.1.2.18

crane cabin

cabin attached to the crane, designed to operate the crane

“

Under 3.1.2, add item 3.1.2.19:

“

3.1.2.19

vehicle cabin

cabin being part of the vehicle, mainly designed to operate the vehicle

“

Under 3.1.2, add item 3.1.2.20:

“

3.1.2.20

leg tilting device

powered device that enables rotating the stabilizer leg to a raised position

“

4 Modifications to Clause 4, “List of significant hazards”

In Table 2, replace the rows as follow:

“

2.2	Approach to live parts under high voltage	7.2.3.1 d)
3.2	Damage to health by hot or cold working environment	5.8.1, 7.2.3.8, Annex I
4	Hazards generated by noise <ul style="list-style-type: none"> - Hearing loss. - Tinnitus, physiological disorders, stress. - Risks (accidents, reduced intelligibility of messages) due to interference with speech communication and perception of acoustic signals. 	5.10.4, 6.3, 7.2.3.9
5	Hazards generated by materials and substances (and their constituent elements) processed or used by the machinery	
6.4	Human error, human behaviour	5.6, 5.7.1, 5.7.2, 7.2.3, 7.2.4, Annex E

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6.5	Inadequate design, location or identification of manual controls	5.4.1.3, 5.4.3, 5.7, 5.8, Annex E
8.3	Safety signs, signals, symbols	5.4.1.3, 5.6.7, 5.7.2, 7.3.4, 7.3.5, Annex E
10	Loss of stability/overturning of machine	5.4.1, 5.6.1, 5.6.2, 5.6.3, 5.6.4, 5.6.5, 5.6.6, 5.10.3, 6.2.5
11.1.4	Unexpected/unintended movement of loads	5.5.5, 5.5.6, 5.5.7, 5.5.8

“

5 Modifications to Clause 5, “Safety requirements and/or protective/risk reduction measures”

5.2.3.3.1, replace the first sentence with the following:

“

Wind loads shall be calculated according to EN 13001-2:2021.

“

5.2.4.3, Table 5, replace the text of footnote a) with the following:

“

Only centrifugal forces that increase the load effects shall be included.

“

5.3.1, replace the 1st paragraph with the following:

“

The strength of the steel structure shall be assessed in accordance with EN 13001-1:2015, EN 13001-2:2021 and EN 13001-3-1:2012+A2:2018. The strength of hydraulic cylinders that are part of the load carrying structure of the crane shall be assessed in accordance with EN 13001-3-6:2018+A1:2021.

“

5.4.3.1, replace the 2nd paragraph with the following:

“

Means shall be provided to prevent uncontrolled movements of the crane and stabilizers installed on vehicles when travelling.

“

5.4.5, 1st paragraph, replace the first sentence with the following:

“

Load hooks which are incorporated into the loader crane shall fulfil the requirements of EN 13001-3-5:2016+A1:2021 or EN 1677-2:2000+A1:2008.

“

5.5.6.2, replace the 2nd paragraph with the following:

“

Cylinders for stabilizer legs shall be equipped as specified in 5.5.6.1.

“

5.6.1.1, replace the text of the 1st paragraph with the following:

“

Rated capacity limiters shall be provided on all cranes, except timber handling cranes, having a rated capacity of 1 000 kg or above, or a maximum net lifting moment of 40 000 Nm or above due to the load. The rated capacity shall be determined at all outreaches corresponding to the boom system being horizontal. The stability of the vehicle shall be included in the function of the rated capacity limiter.

“

5.6.1.1, change uppercase D to lowercase d following the colon in NOTE 1:

“

: deployment

“

5.6.1.3, Table 7, add a row at the end of the table with the following text:

“

Interlocking of retracting stabiliser extensions with powered tilting devices	b
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“

5.6.1.3, end of clause, replace with the following:

“

Method 1:

- Safety related functions shall be in accordance with EN ISO 13849-1:2015 and EN ISO 13849-2:2012. SRP/CS comprising complex electronic components shall be of at least category 2.

Method 2:

- Method 2 is valid for PL_r = c or lower.

The achieved PL or PFH_D of the whole safety function is not considered if each SRP/CS is in accordance with EN ISO 13849-1:2015 and EN ISO 13849-2:2012 and the following is satisfied:

- Safety Function with only mechanical, hydraulic, electromechanical or electrohydraulic components:
 - For the whole Safety Function: Category 1
 - For single components MTTFD minimum value: 150 years may be assumed