



SLOVENSKI STANDARD
SIST EN 13135:2013/oprA1:2016
01-februar-2016

Žerjavi - Varnost - Konstruiranje - Zahteve za opremo

Cranes - Safety - Design - Requirements for equipment

Krane - Sicherheit - Konstruktion - Anforderungen an die Ausrüstungen

Appareils de levage à charge suspendue - Sécurité - Conception - Prescriptions relatives à l'équipement

(standards.iteh.ai)

Ta slovenski standard je istoveten z: EN 13135:2013/prA1

<https://standards.iteh.ai/catalog/standards/sist/54dec514-cca1-457d-8b56-6dfdc4dc9a37/sist-en-13135-2013-kfpra1-2016>

ICS:

53.020.20 Dvigala Cranes

SIST EN 13135:2013/oprA1:2016 en,fr,de

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 13135:2013/kFprA1:2016](https://standards.iteh.ai/catalog/standards/sist/54dec514-cca1-457d-8b56-6dfdc4dc9a37/sist-en-13135-2013-kfpra1-2016)

<https://standards.iteh.ai/catalog/standards/sist/54dec514-cca1-457d-8b56-6dfdc4dc9a37/sist-en-13135-2013-kfpra1-2016>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
EN 13135:2013
prA1

January 2016

ICS 53.020.20

English Version

Cranes - Safety - Design - Requirements for equipment

Appareils de levage à charge suspendue - Sécurité -
Conception - Prescriptions relatives à l'équipement

Krane - Sicherheit - Konstruktion - Anforderungen an
die Ausrüstungen

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 13135:2013. 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey 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: Avenue Marnix 17, B-1000 Brussels

Contents	Page
1 Modifications to Clause 2, Normative references.....	4
2 Modifications to Clause 5, Safety requirements and/or protective measures.....	4
3 Modifications to Annex A, Selection of a suitable set of crane standards for a given application.....	7

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 13135:2013/kFprA1:2016](https://standards.iteh.ai/catalog/standards/sist/54dec514-cca1-457d-8b56-6dfdc4dc9a37/sist-en-13135-2013-kfpra1-2016)
<https://standards.iteh.ai/catalog/standards/sist/54dec514-cca1-457d-8b56-6dfdc4dc9a37/sist-en-13135-2013-kfpra1-2016>

European foreword

This document (EN 13135:2013/prA1:2016) 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.

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).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of EN 13135:2013.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 13135:2013/kFprA1:2016](https://standards.iteh.ai/catalog/standards/sist/54dec514-cca1-457d-8b56-6dfdc4dc9a37/sist-en-13135-2013-kfpra1-2016)

<https://standards.iteh.ai/catalog/standards/sist/54dec514-cca1-457d-8b56-6dfdc4dc9a37/sist-en-13135-2013-kfpra1-2016>

EN 13135:2013/prA1:2016 (E)**1 Modifications to Clause 2, Normative references**

Delete references:

"CEN/TS 13001-3-2, *Cranes – General design – Part 3-2: Limit states and proof of competence of wire ropes in reeving systems*

CEN/TS 13001-3-5, *Cranes – General design – Part 3-5: Limit states and proof of competence of forged hooks*".

Add references:

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

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

2 Modifications to Clause 5, Safety requirements and/or protective measures

In 5.3.6.6.3, replace the 3rd paragraph with the following:

"Thimbles with circular (round) shape, rope eyes or rope grips shall not be used as rope anchorages."

iTeh STANDARD PREVIEW
(standards.iteh.ai)

In 5.5.4.3.2, replace the 2nd paragraph with the following:

<https://standards.iteh.ai/catalog/standards/sist/54dec514-cca1-457d-8b56-3a10c0e013/kFprA1:2016>

"The hydraulic motors shall be capable of developing a torque of 1,4 times the maximum torque required to move a load of the rated capacity of the motion concerned."

In 5.6.2, replace the 3rd paragraph with the following:

"Forged hooks shall be in accordance with EN 13001-3-5."

In 5.6.2, the last paragraph, second sentence, replace "CEN/TS 13001-3-5" with the following:

"EN 13001-3-5".

In 5.7.2, replace the entire subclause with the following:

"A Performance Level shall be evaluated individually for each safety related function of the control system in accordance with EN ISO 13849-1. It shall either

— conform to the required Performance Level as specified in the relevant product standard;

or

— conform to the required Performance Level as determined by risk analysis.

In determining the required performance level, account should be taken also of other risk reduction measures than the control system, such as mechanical protecting devices (e.g. end stops, buffers, force limiters) and duplication of protective systems. Generally, for cranes, at least the following safety related functions shall be addressed:

- overload protection;
- limiting of relevant motions (e.g. hoisting, luffing, slewing, travelling);
- emergency stop;
- over speed control of variable speed hoisting drives, see EN 60204-32:2008, 9.4.4.

The control system is defined in Annex A of EN ISO 12100:2010 to end at the output of the power control elements. By this definition, e.g. mechanical brakes, load holding valves, gearboxes and other comparable elements are considered to belong to the operating part of the system and not to the safety related control system. In general, warning, indicating and monitoring systems need not be considered to be safety related control functions."

In 5.7.4, replace the 5th paragraph (after the second bullet list) with the following:

"Where friction grip type connection is used between the end stop and its supporting structure, the connection shall be designed with a specific resistance factor $\gamma_{ss} = 1,8$, see EN 13001-3-1."

(standards.iteh.ai)

In 5.9.2.3, replace the 1st paragraph, 2nd bullet, last sentence, with the following:

"The remaining steel wire rope shall fulfil as a minimum rope resistance factor $\gamma_{rb} = 2,5$ as defined in EN 13001-3-2."

In 5.9.3.1, replace the entire subclause with the following:

"Where several bridge cranes can be manoeuvred simultaneously in the same place, with risk of collision, an anti-collision system shall be provided.

Where a duplicated rope system is required, i.e. the rated capacity is greater than 40 t, supports shall be provided which prevent drop of the hoist drum in the case of a shaft or gear housing break. The backup brake shall function even with the drum resting on the support. The system shall indicate a drop of the hoist drum.

For hoisting mechanisms with rated capacity greater than 5 t, a load history recorder shall be provided.

Where the lifting operations need more than one hoisting mechanism working simultaneously, the control systems shall be interconnected, so that any interruption of the operation on one mechanism shall have a corresponding effect on the other.

Where debris deposits prevent visual inspections of the steel structure, the fatigue strength resistance factor $\gamma_{MF} = 1,25$ shall be used for fatigue design in accordance with EN 13001-3-1.

Bridge cranes handling hot molten metals shall be provided with derailment protection for crane and trolley.

EN 13135:2013/prA1:2016 (E)

The main girder of box construction without possibility of inside inspection shall be designed with a risk coefficient $\gamma_n = 1,1$ in accordance with EN 13001-2."

At the end of 5.9.3.2.1, add the following new paragraph:

"In general the auxiliary hoists with a rated capacity 40 t or less, which are intended to tilt foundry ladles, may be designed without provisions of high risk applications. Where a risk analysis shows that a failure in such hoist would cause dropping or spilling of hot molten metal out of the ladle, the load suspension system and the fixed load lifting attachment shall be designed with $\gamma_n = 1,5$ or as a single failure proof system."

In 5.9.3.2.2, replace the 2nd paragraph with the following:

"These requirements do not take into account the need for hoisting or lowering the load following a failure of a component. The manufacturer shall consider such requirements and he may need to upgrade the requirements of Table 8 based on risk assessment of local conditions."

In 5.9.3.2.2, Table 8, Item No. 2, replace the 2nd paragraph with the following:

"Hooks shall be designed in accordance with 5.9.3.2.5."

iTeh STANDARD PREVIEW

In 5.9.3.2.3, replace the entire subclause with the following:

(standards.iteh.ai)

"The hoisting mechanisms shall be designed at least to load spectrum factor k_Q and number of work cycles C fulfilling the condition $k_Q \times C \geq 32000$."

<https://standards.iteh.ai/catalog/standards/sist/54dec514-cca1-457d-8b56-4dc9a37/sist-en-13135-2013-kfpra1-2016>

<https://standards.iteh.ai/catalog/standards/sist/54dec514-cca1-457d-8b56-4dc9a37/sist-en-13135-2013-kfpra1-2016>

NOTE For k_Q and C , see EN 13001-1.

In 5.9.3.2.6, replace the 2nd paragraph with the following:

"Due to their lower ductility, which will induce lower resistance against impact following foreseeable misuse, gear housings made of grey cast iron in accordance with EN 1561 or aluminium alloys are not permissible in hoisting mechanisms carrying hot molten metal for rated capacity above 40 t."