SLOVENSKI STANDARD
SIST EN 13155:2021

01-april-2021

Nadomešča:
SIST EN 13155:2004+A2:2009

Dvigala (žerjavi) - Varnost - Snemljiva dvigalna sredstva

Crane - Safety - Non-fixed load lifting attachments

Krane - Sicherheit - Lose Lastaufnahmemittel

Appareils de levage à charge suspendue - Sécurité - Accessoires de levage amovibles

Ta slovenski standard je istoveten z: **EN 13155:2020**

ICS:

53.020.30	Pribor za dvigalno opremo	Accessories for lifting equipment

SIST EN 13155:2021 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13155

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English Version

Crane - Safety - Non-fixed load lifting attachments

Appareils de levage à charge suspendue - Sécurité - Accessoires de levage amovibles

Krane - Sicherheit - Lose Lastaufnahmemittel

This European Standard was approved by CEN on 17 January 2020.

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This European Standard exists 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.

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

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Contents

Page

European foreword

This document (EN 13155:2020) 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of an identical text or by endorsement, at the latest by June 2021, and conflicting national standards shall be withdrawn at the latest by June 2021.

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 will supersede EN 13155:2003+A2:2009.

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 this document.

The main modifications between EN 13155:2003+A2:2009 and EN 13155:2020 concern:

— general requirement to introduce the reference to EN 13001-1 and –2 for the calculation;

— vacuum lifters;

— lifting magnet;

— the addition to the scope of lifting insert systems for lifting prefabricated concrete products;

— reduction of load changes from 20 000 to 16 000 in all clauses.

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, Turkey and the United Kingdom.

Introduction

This document has been prepared to be a harmonized standard to provide one means for non-fixed load lifting attachments used on cranes to conform with the essential health and safety requirements of the Machinery Directive, as amended.

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

The machinery concerned and the extent to which hazards are covered are indicated in the scope of this standard.

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 non-fixed load lifting attachments which have been designed and built according to the provisions of this type C standard.

1 Scope

This document specifies safety requirements for the following non-fixed load lifting attachments for cranes, hoists and manually controlled load manipulating devices:

a) plate clamps;

b) vacuum lifters:

   1) self-priming;

   2) non-self-priming (pump, venturi, turbine);

c) lifting magnets:

   1) electric lifting magnets (battery fed and mains-fed);

   2) permanent lifting magnets;

   3) electro-permanent lifting magnets;

d) lifting beams;

e) C-hooks;

f) lifting forks;

g) clamps;

h) lifting insert systems for use in normal weight concrete,

as defined in Clause 3.

This document does not give requirements for:

— non-fixed load lifting attachments in direct contact with foodstuffs or pharmaceuticals requiring a high level of cleanliness for hygiene reasons;

— hazards resulting from handling specific hazardous materials (e.g. explosives, hot molten masses, radiating materials);

— hazards caused by operation in an explosive atmosphere;

— hazards caused by noise;

— hazards relating to the lifting of persons;

— electrical hazards;

— hazards due to hydraulic and pneumatic components.

For high risk applications not covered by this standard, EN 13001-2:2014, 4.3.2 gives guidance to deal with them.

This document covers the proof of static strength, the elastic stability and the proof of fatigue strength.

This document does not generally applies to attachments intended to lift above people. Some attachments are suitable for that purpose if equipped with additional safety features. In such cases the additional safety features are specified in the specific requirements.

This document does not cover slings, ladles, expanding mandrels, buckets, grabs, or grab buckets. This document does not cover power operated container handling spreaders, which are in the scope of EN 15056.

This document is not applicable to non-fixed load attachments 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 206:2013+A1:2016, *Concrete — Specification, performance, production and conformity*

EN 349:1993+A1:2008, *Safety of machinery — Minimum gaps to avoid crushing of parts of the human body*

EN 818-4:1996+A1:2008, *Short link chain for lifting purposes — Safety — Part 4: Chain slings — Grade 8*

EN 818-5:1999+A1:2008, *Short link chain for lifting purposes — Safety — Part 5: Chain slings — Grade 4*

EN 842:1996+A1:2008, *Safety of machinery — Visual danger signals — General requirements, design and testing*

EN 981:1996+A1:2008, *Safety of machinery — System of auditory and visual danger and information signals*

EN 1492-1:2000+A1:2008, *Textile slings — Safety — Part 1: Flat woven webbing slings made of man-made fibres for general purpose use*

EN 1492-2:2000+A1:2008, *Textile slings — Safety — Part 2: Roundslings made of man-made fibres for general purpose use*

EN 1492-4:2004+A1:2008, *Textile slings — Safety — Part 4: Lifting slings for general service made from natural and man-made fibre ropes*

EN 1677-1:2000+A1:2008, *Components for slings — Safety — Part 1: Forged steel components, Grade 8*

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

EN 1677-3:2001+A1:2008, *Components for slings — Safety — Part 3: Forged steel self-locking hooks — Grade 8*

EN 1677-4:2000+A1:2008, *Components for slings — Safety — Part 4: Links, Grade 8*

EN 1677-5:2001+A1:2008, *Components for slings — Safety — Part 5: Forged steel lifting hooks with latch — Grade 4*

EN 1677-6:2001+A1:2008, *Components for slings — Safety — Part 6: Links - Grade 4*

EN 10029:2010, *Hot-rolled steel plates 3 mm thick or above — Tolerances on dimensions and shape*

EN 10034:1993, *Structural steel I and H sections — Tolerances on shape and dimensions*

EN 12385-4:2002+A1:2008, *Steel wire ropes — Safety — Part 4: Stranded ropes for general lifting applications*

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

EN 13001-2:2014, *Cranes 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 13369:2018, *Common rules for precast concrete products*

EN 13414-1:2003+A2:2008, *Steel wire rope slings — Safety — Part 1: Slings for general lifting service*

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

EN ISO 5817:2014, *Welding — Fusion-welded joints in steel, nickel, titanium and their alloys (beam welding excluded) — Quality levels for imperfections (ISO 5817:2014)*

EN ISO 7731:2008, *Ergonomics — Danger signals for public and work areas — Auditory danger signals (ISO 7731:2003)*

EN ISO 9606-1:2017, *Qualification testing of welders — Fusion welding — Part 1: Steels (ISO 9606-1:2012 including Cor 1:2012 and Cor 2:2013)*

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)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given 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
adhesion force
force required to remove the load from a vacuum lifter

3.2
C-hook
equipment in the form of a ‘C’ used for lifting hollow loads

(see Figure 1)

EXAMPLE Examples of hollow loads are coils and pipes.

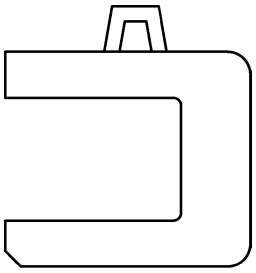

Figure 1 — Example of a C-hook

3.3
working coefficient
arithmetic ratio between the maximum load which a load lifting attachment is able to hold and the working load limit marked

3.4
clamp
equipment used to handle loads by clamping on a specific part of the load

(see Figure 2)

Note 1 to entry: Clamps are also known as tongs. For a definition of plate clamps see 3.5.

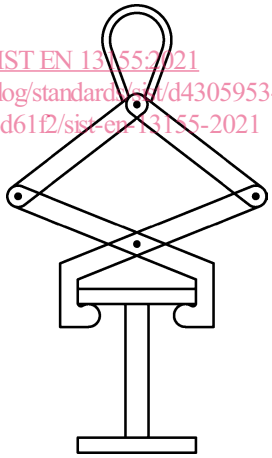

Figure 2 — Example of a clamp