SLOVENSKI STANDARD
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Dvigala (žerjavi) - Zahteve za kontejnerska prijemala

Cranes - Requirements for container handling spreaders

Krane - Anforderungen an Spreader zum Umschlag von Containern

Appareils de levage à charge suspendue - Exigences pour les spreaders manutentionnant des conteneurs

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Cranes - Requirements for container handling spreaders

Appareils de levage à charge suspendue - Exigences pour les spreaders manutentionnant des conteneurs

Krane - Anforderungen an Spreader zum Umschlag von Containern

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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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.

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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 15056:2025) 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 15056:2006+A1:2009.

prEN 15056:2025 includes the following significant technical changes with respect to EN 15056:2006+A1:2009:

— updating of reference documents and cross-references;

— revision of grammar and linguistic consistency;

— revision of List of significant hazards and moved it to Annex A;

— revision of Annex ZA and addition of Bibliography;

— revision and update of Clause 2 and Clause 3;

— addition of new sublauses 4.1.2, 4.1.3, 4.2.3, 4.5.4, 4.5.5, 4.5.6 and 4.7;

— revision and update of sublauses 4.1.1, 4.2.1, 4.3, 4.4, 4.5.1, 4.5.2, 4.6, 5.1, 5.2, 6.1, 6.2.1, 6.2.7 and 6.2.10;

— revision and update of Table A.1;

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, which is integral part of this document.

For relationship with other European standards for cranes, see Annex C.

Introduction

This document is a harmonized standard to provide one means for container handling spreaders for cranes to conform with the essential health and safety requirements of the Machinery Regulation, as mentioned in Annex ZA.

This standard 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 special 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 hazardous 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 requirements 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 specifies safety requirements for spreaders used with cranes designed for the purpose of handling freight containers, e.g. those based on ISO 668:2020. The connection between the spreader and the container is by the use of twistlocks that engage into the container's upper corner castings.

This document deals with all significant hazards, hazardous situations or hazardous events relevant to container handling spreaders, when it is used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer.

The spreader is interfaced to the crane's control and safety system.

This document does not cover the following types of spreaders:

— hand operated spreaders (without external power supply);

— bottom lift grapple spreaders used for swap bodies and road trailers.

This document does not deal with the lifting of persons.

This document is not applicable to container handling spreaders 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 363:2018, *Personal fall protection equipment — Personal fall protection systems*

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

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

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 of competence of steel structure*

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

EN 13586:2020, *Cranes — Access*

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

prEN 50742:—,[1] *Safety of machinery — Protection against corruption*

[1] Under preparation on CLC/TC 44X/WG 2. Stage 10.99 realized on 2023-12-13.

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

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 61000-6-7:2015, *Electromagnetic compatibility (EMC) — Part 6-7: Generic standards — Immunity requirements for equipment intended to perform functions in a safety-related system (functional safety) in industrial locations (IEC 61000-6-7:2014)*

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

EN 62745:2017,[2] *Safety of machinery — Requirements for cableless control systems of machinery (IEC 62745:2017)*

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

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

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

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

3 Terms, definitions and terminology

3.1 Terms and definitions

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

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

— ISO Online browsing platform: available at https://www.iso.org/obp/

— IEC Electropedia: available at https://www.electropedia.org/

3.1.1
mid frame
middle section of a container handling spreader

[2] As impacted by EN 62745:2017/A11:2020.

3.1.2
telescopic beam
extending frame of a container handling spreader which slides in and out of the mid frame

3.1.3
end beam
outer end beam of a container handling spreader extending frame

3.1.4
telescopic motion
adjusting the length of the container handling spreader to different container sizes

3.1.5
tare weight
spreader's own weight in operation

3.1.6
twistlock
rotating locking device for connecting a container handling spreader to a container corner casting (Figure 3)

3.1.7
mechanical blockading
action of mechanically blocking the twistlock in order to prevent unsafe rotation

3.1.8
single lift operation
lifting one container with one spreader

3.1.9
twin lift operation
lifting two containers with one spreader

3.1.10
expandable twin lift
twin lift operation with the ability to expand or retract two containers from each other

3.1.11
flipper (gather guide)
guidance device to align the spreader to a container which can be moved between the down "in-use" position and up "not in use" positions manually or by remote control

3.1.12
lock(ed)
twistlocks in corner castings in position which ensure safe lifting of the container

3.1.13
unlock(ed)
twistlocks in corner castings in position which ensure safe removal from the container

3.1.14
land(ed)
spreader landed correctly with all twistlocks in the corner castings

3.1.15
landing pin(s)
mechanical device(s) with electrical indication on correct landing of the spreader on the container

3.1.16
headblock
part of the crane to which the spreader(s) is(are) attached

3.1.17
headblock connection
connection between the spreader and the headblock

3.1.18
twin unit
additional twistlock housings and mechanism fitted to a container handling spreader that enables it to perform twin lift operations

3.1.19
freight container
article of transport equipment:

a) of a permanent character and accordingly strong enough to be suitable for repeated use;

b) designed to facilitate the carriage of goods by one or more modes of transport, without intermediate reloading;

c) fitted with devices permitting its ready handling, particularly its transfer from one mode of transport to another;

d) designed so as to be easy to fill and empty;

e) having an internal volume of 1 m^3 (35,3ft3) or more

Note 1 to entry: The term "freight container" does not include vehicles or conventional packing.

[SOURCE: ISO 668:2020 and ISO 668:2020/Amd1:2022, 3.1]

3.2 Terminology

The terms that are used in this standard for the main parts of a spreader are indicated in Figure 1. The fine positioning movements are shown in Figure 2.

NOTE In the Figure 1 the headblock design is for reference only and varies based on application.