TÖÖSTUSVEOKID. OHUTUSNÕUDED JA TÕENDAMINE. OSA 1: LISANÕUDED ISELIIKUVATELE TÖÖSTUSVEOKITELE, VÄLJA ARVATUD JUHITA VEOKID, MUUTUVA TÖÖALAGA VEOKID NING KAUBAVEOKID

Industrial trucks - Safety requirements and verification - Part 1: Supplementary requirements for self-propelled industrial trucks, other than driverless trucks, variable-reach trucks and burden-carrier trucks

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 16307-1:2020 sisaldab Euroopa standardi EN 16307-1:2020 ingliskeelset teksti.	This Estonian standard EVS-EN 16307-1:2020 consists of the English text of the European standard EN 16307-1:2020.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 26.08.2020.	Date of Availability of the European standard is 26.08.2020.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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English Version

Industrial trucks - Safety requirements and verification - Part 1: Supplementary requirements for self-propelled industrial trucks, other than driverless trucks, variable-reach trucks and burden-carrier trucks

Chariots de manutention - Exigence de sécurité et vérifications - Partie 1 : Exigences supplémentaires pour les chariots autres que les chariots sans conducteur, les chariots à portée variable et les chariots porteurs de charge

Sicherheit von Flurförderzeugen - Sicherheitsanforderungen und Verifizierung - Teil 1: Zusätzliche Anforderungen für motorkraftbetriebene Flurförderzeuge mit Ausnahme von fahrerlosen Flurförderzeugen, Staplern mit veränderlicher Reichweite und Lasten- und Personentransportfahrzeugen

This European Standard was approved by CEN on 12 July 2020.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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

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

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European foreword

This document (EN 16307-1:2020) has been prepared by Technical Committee CEN/TC 150 “Industrial trucks - 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 February 2021, and conflicting national standards shall be withdrawn at the latest by February 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 supersedes EN 16307-1:2013+A1:2015.

The main changes with respect to the first edition are as follows:

a) requirements in respect to visibility (see 4.12) have been changed;

b) requirements for the operator restraint system (see 4.16) have been added.

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.

This document is based on ISO/TS 3691-7, *Industrial trucks — Safety requirements and verification — Part 7: Regional requirements for countries within the European Community* and is limited to self-propelled industrial trucks.

EN 16307 consists of the following parts, under the general title *Industrial trucks — Safety requirements and verification*:

— *Part 1: Supplementary requirements for self-propelled industrial trucks, other than driverless trucks, variable-reach trucks and burden-carrier trucks*

— *Part 2: Supplementary requirements for self-propelled variable-reach trucks*

— *Part 3: Supplementary requirements for trucks with elevating operator position and trucks specifically designed to travel with elevated loads (additional requirements to EN 16307-1)*

— *Part 5: Supplementary requirements for pedestrian-propelled trucks*

— *Part 6: Supplementary requirements for burden and personnel carriers*

This document is intended to be used with EN ISO 3691-1, *Industrial trucks — Safety requirements and verification — Part 1: Self-propelled industrial trucks, other than driverless trucks, variable-reach trucks and burden-carrier trucks.*

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 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).

The above-mentioned stakeholder groups have been given the possibility to participate at the drafting process of this document.

The machines concerned and the extent to which hazards, hazardous situations or 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.

The EN 16307 series of standards covers safety requirements and their verification for industrial trucks as defined in ISO 5053-1 that are not covered exhaustively by the EN ISO 3691 series.

1 Scope

This document gives requirements for the types of industrial trucks specified in the scope of EN ISO 3691-1:2015[1)].

This document is intended to be used in conjunction with EN ISO 3691-1:2015. These requirements are supplementary to those stated in EN ISO 3691-1:2015.

This document deals with the following significant hazards, hazardous situations or hazardous events relevant, when it is used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer:

— electrical requirements;

— noise emissions;

— vibration;

— visibility;

— electromagnetic radiation.

This document defines supplementary requirements to EN ISO 3691-1:2015:

— travel speed;

— brakes;

— travel and braking controls - additional operation from alongside pedestrian-controlled and stand-on trucks;

— lift chains;

— mast tilt and carriage isolation;

— operator's seat;

— operator restraint system;

— protection against crushing, shearing and trapping;

— information for use (instruction handbook and marking).

Annex A (informative) contains the list of significant hazards covered by this document.

1) This document is impacted by the corrigendum EN ISO 3691-1:2015/AC:2016 and the amendment EN ISO 3691-1:2015/A1:2020.

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 1175-1:1998+A1:2010, *Safety of industrial trucks — Electrical requirements — Part 1: General requirements for battery powered trucks*

EN 1175-2:1998+A1:2010, *Safety of industrial trucks — Electrical requirements — Part 2: General requirements of internal combustion engine powered trucks*

EN 1175-3:1998+A1:2010, *Safety of industrial trucks — Electrical requirements — Part 3: Specific requirements for the electric power transmission systems of internal combustion engine powered trucks*

EN 12053:2001+A1:2008, *Safety of industrial trucks — Test methods for measuring noise emissions*

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

EN 12895:2015+A1:2019, *Industrial trucks — Electromagnetic compatibility*

EN 13059:2002+A1:2008, *Safety of industrial trucks — Test methods for measuring vibration*

EN 13490:2001+A1:2008, *Mechanical vibration — Industrial trucks — Laboratory evaluation and specification of operator seat vibration*

EN 16203:2014, *Safety of Industrial Trucks — Dynamic tests for verification of lateral stability — Counterbalanced Trucks*

EN 16842-1:2018, *Powered industrial trucks — Visibility — Test methods and verification — Part 1: General requirements*

EN 16842-2:2018, *Powered industrial trucks — Visibility — Test methods and verification — Part 2: Sit-on counterbalance trucks and rough terrain masted trucks up to and including 10 000 kg capacity*

EN 16842-3:2018, *Powered industrial trucks — Visibility — Test methods and verification — Part 3: Reach trucks up to and including 10 000 kg capacity*

EN 16842-6:2018, *Powered industrial trucks — Visibility — Test methods and verification — Part 6: Sit-on counterbalance trucks and rough terrain masted trucks greater than 10000 kg capacity*

EN 16842-7:2018, *Powered industrial trucks — Visibility — Test methods and verification — Part 7: Variable-reach and masted container trucks handling freight containers of 6 m (20 ft) length and longer*

EN ISO 3691-1:2015[2)], *Industrial trucks — Safety requirements and verification — Part 1: Self-propelled industrial trucks, other than driverless trucks, variable-reach trucks and burden-carrier trucks (ISO 3691-1:2011)*

2) This document is impacted by the corrigendum EN ISO 3691-1:2015/AC:2016 and the amendment EN ISO 3691-1:2015/A1:2020.

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

ISO 5053-1:2020, *Industrial trucks — Vocabulary — Part 1: Types of industrial trucks*

ISO 6292:2020, *Powered industrial trucks and tractors — Brake performance and component strength*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100:2010, ISO 5053-1:2020 and EN ISO 3691-1:2015 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 https://www.iso.org/obp/ui

3.1
operator restraint system
device or system that is permanently installed to keep the operator within the protective structure of the truck

EXAMPLE Seat belt, cabin door.

[SOURCE: EN 17314:2020, 3.1, modified – Note 1 "The restraint system can be composed of several parts" replaced with "EXAMPLE: Seat belt, cabin door" and Note 2 deleted.]

4 Safety requirements and/or protective measures

4.1 General

Machinery shall comply with the safety requirements and/or protective measures of 4.2 to 4.16. In addition, the machine shall be designed according to the principles of EN ISO 12100:2010 for relevant but not significant hazards which are not dealt with by this document.

The following applies to the self-propelled industrial trucks, other than driverless trucks, variable-reach trucks and burden-carrier trucks, dealt with in EN ISO 3691-1:2015. These are additional to the requirements of EN ISO 3691-1:2015 and, in certain instances, replace them.

4.2 Electrical requirements

Electrical systems and equipment shall be in accordance with the relevant part(s) of EN 1175:1998+A1:2010.