

**Tööstuslike mootorkärude ohutus. Lisanõuded
kärude automaاتفunktsioonide kohta
KONSOLIDEERITUD TEKST**

Safety of industrial trucks - Additional requirements for
automated functions on trucks CONSOLIDATED TEXT

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 1526:1999+A1:2008 sisaldab Euroopa standardi EN 1526:1997+A1:2008 ingliskeelset teksti.</p> <p>Standard on kinnitatud Eesti Standardikeskuse 18.08.2008 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 23.07.2008.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 1526:1999+A1:2008 consists of the English text of the European standard EN 1526:1997+A1:2008.</p> <p>This standard is ratified with the order of Estonian Centre for Standardisation dated 18.08.2008 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.</p> <p>Date of Availability of the European standard text 23.07.2008.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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Võtmesõnad: automaatjuhtimine, juhtimisfunktsioonid, juhtseadmed, masinate ohutus, montaaž, määratlused, ohud, ohutusmeetmed, teave, tehnilised märkused, tööstuslikud kärud, utiliseerimine, õnnetuste vältimine

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English Version

**Safety of industrial trucks - Additional requirements for
automated functions on trucks**

Sécurité des chariots de manutention - Prescriptions
complémentaires pour les fonctions automatiques des
chariots

Sicherheit von Flurförderzeugen - Zusätzliche
Anforderungen für automatische Funktionen von
Flurförderzeugen

This European Standard was approved by CEN on 22 June 1997 and includes Amendment 1 approved by CEN on 15 June 2008.

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 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 Management Centre has the same status as the official versions.

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Foreword

This document (EN 1526:1997+A1:2008) 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 January 2009, and conflicting national standards shall be withdrawn at the latest by January 2009.

This document includes Amendment 1, approved by CEN on 2008-06-15.

This document supersedes EN 1526:1997.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** **A1**.

This European Standard is one of a series of standards for the safety of industrial trucks.

Safety of industrial trucks – Self-propelled trucks up to and including 10 000 kg capacity and industrial tractors with drawbar pull up to and including 20 000 N.

prEN 1726-1, Part 1: General requirements

prEN 1726-2, Part 2: Additional requirements for trucks with elevating operator position and trucks specifically designed to travel with elevated loads

prEN 1551, Safety of Industrial Trucks, self propelled trucks over 10 000 kg capacity

prEN 1459, Safety of Industrial Trucks, self propelled variable reach trucks
Safety of Industrial Trucks, pedestrian propelled trucks

prEN 1757-1, Part 1, Stacker trucks

prEN 1757-2, Part 2, Pallet trucks with a lift height up to 300 mm

prEN 1757-3, Part 3, Platform trucks

prEN 1757-4, Part 4, Scissor lift pallet trucks

prEN 1525, Safety of Industrial trucks, driverless trucks and their systems

prEN 1526, Safety of Industrial trucks, additional requirements for automated functions on trucks
Safety of Industrial trucks, electrical requirements for trucks

prEN 1175-1, Part 1, Battery-powered trucks

prEN 1175-2, Part 2, General requirements for internal combustion engine powered trucks

prEN 1175-3, Part 3, Specific requirements for the electric power transmission systems of internal combustion engine powered trucks

prEN 1755, Safety of industrial trucks, operation in potentially explosive atmospheres

prEN 12053, Safety of industrial trucks, test methods for measuring noise emissions

prEN/ISO 13564, Safety of industrial trucks, test method for measuring visibility from self-propelled trucks

This European Standard 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).

A1 For relationship with EU Directive(s), see informative Annexes ZA and ZB, which are integral parts of this document. **A1**

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

Introduction

This European Standard is a type C standard as stated in EN 292-1. This standard has been prepared to be a harmonised standard to provide one means of conforming to the essential safety requirements of the Machinery Directive and associated EFTA regulations.

The extent to which hazards are covered is indicated in the scope of this standard. In addition, automated functions of trucks should comply as appropriate with EN 292 for hazards which are not covered by this standard.

1 Scope

1.1 This European Standard deals with the controls and control systems for automated functions of industrial trucks with an operator (hereinafter referred to as "trucks").

1.2 The control system is generally part of the truck but can include components external to the truck, eg for the guidance means for automated steering.

1.3 This European Standard deals with the technical requirements to minimise the specific hazards listed in clause 4 which can arise during the commissioning, operation and maintenance of automated functions of trucks when carried out in accordance with the specifications given by the manufacturer or his authorised representative. In addition, trucks should comply as appropriate with EN 292 for hazards not covered by this standard or the applicable companion standards.

1.4 This European Standard is not applicable to safety equipment (e.g. devices for height limitation, speed limitation) used to override driver control.

1.5 This European Standard deals with the hazards related to the controls and control systems for the following automated functions:

- Steering (direct mechanical guidance is excluded);
- Travel;
- Lifting and lowering operations;
- Load manipulations, e.g. rotation, reach, slewing, tilting, clamping;
- Combination and/or sequence of the above movements.

This standard must be used in conjunction with one or more of the applicable companion standards listed in the Foreword.

1.6 This European standard does not establish the additional requirements for the following:

- a) Operation in severe conditions (e.g. extreme climates, freezer applications, strong magnetic fields);
- b) Operation in environments subject to special rules (e.g. potentially explosive atmospheres);

- c) Electromagnetic compatibility;
- d) Transportation of passengers;
- e) Handling of loads the nature of which could lead to dangerous situations (e.g. molten metals, acids/bases, radiating materials).

Limitations in the scopes of the applicable companion standards also apply to this standard.

2 Normative references

This European standard incorporates, by dated or undated reference, provisions from other publication. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to, or revisions of, any of these publications apply to this standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication applies.

EN 292-1:1991, *Safety of machinery, basic concepts, general principles for design – Part 1: Basic terminology, methodology.*

EN 292-2:1991, *Safety of machinery, basic concepts, general principles for design – Part 2: Technical principles and specifications.*

EN 954-1:1996, *Safety of machinery, safety related parts of control systems – Part 1: General principles of design.*

prEN 1175-1, *Safety of industrial trucks, electrical requirements for trucks – Part 1: Battery powered trucks.*

3 Definitions

For the purposes of this standard, the following definitions apply.

3.1

Automated function

a movement for transport or positioning of the truck and/or load initiated by the operator but not requiring continued action by the operator.

3.2

Automated lifting and lowering

An automated system which controls intended vertical movements and/or positioning of the load carrying device to a pre-selected height.

3.3

Automated load manipulation

An automated system which controls load movements (e.g. rotation, reach, slewing, tilting, luffing, telescoping, clamping).

3.4

Automated steering

An automated system which takes control of the steering and keeps the truck on a predetermined path. Direct mechanical guidance (e.g. rail) is excluded.

3.5

Automated steering acquisition

The system condition when automated steering has been selected but the operator is still positioning the truck to acquire the guidance means, i.e. the operator still has control of the manual truck steering system.