

**Maanteehooldusmasinad. Ohutusnõuded**

Highway maintenance machines - Safety requirements

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## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

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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 19.02.2014.	Date of Availability of the European standard is 19.02.2014.
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English Version

**Highway maintenance machines - Safety requirements**

Machines de maintenance des routes - Exigences de  
sécurité

Maschinen für den Straßenbetriebsdienst -  
Sicherheitsanforderungen

This European Standard was approved by CEN on 6 December 2002 and includes Amendment 1 approved by CEN on 24 November 2008 and Amendment 2 approved by CEN on 24 November 2013.

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

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## Foreword

This document (EN 13524:2003+A2:2014) has been prepared by Technical Committee CEN/TC 151 "Construction equipment and building material machines – Safety", the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by August 2014, and conflicting national standards shall be withdrawn at the latest by August 2014.

This document includes Amendment 1, approved by CEN on 2008-11-24 and Amendment 2, approved by CEN on 2013-11-24.

This document supersedes A2 EN 13524:2003+A1:2009 A2.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 A1 and A2 A2.

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 EC Directive(s).

A1 For relationship with EU Directive(s), see informative A2 Annex ZA, which is an integral part A2 of this document. A1

The Annex A is informative and contains „Attachment plate of truck“. The Annex B is normative and contains “Stipulations on the design and testing of mowing and mulching machines”.

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, 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 the United Kingdom.

## 0 Introduction

This European Standard is a Type C-standard as stated in <sup>A1</sup> EN ISO 12100 <sup>A1</sup>.

<sup>A1</sup> 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 machines that have been designed and built according to the provisions of this type C standard.

The machinery concerned and the extent to which hazards, hazardous situations and events are indicated in the scope of this European Standard. <sup>A1</sup>

## 1 Scope

This European Standard applies to machines used for highway maintenance which are attached to or mounted on carrier vehicles and which are defined in clause 3. Directives and standards for the vehicular truck chassis aspect, termed 'carrier vehicle' in this standard, would be those relevant to that equipment, even where specific modifications have been made to adapt the machines for highway maintenance application. The use in public road traffic is governed by the national regulations.

This European Standard deals with all significant hazards identified through a risk assessment pertinent to highway maintenance machines, when they are used as intended and under the conditions foreseen by the manufacturer (see clause 4). This European Standard does not deal with significant hazards associated with <sup>A1</sup> *deleted text* <sup>A1</sup> EMC. This European Standard specifies the appropriate technical measures to eliminate or reduce risks arising from the significant hazards associated with machine operation, setting and adjustments, load discharge and routine maintenance.

This European Standard does not include requirements for the carrier vehicles (e.g. trucks, tractors, construction machines, industrial trucks) as well as their demountable bodywork. These are covered in directives related to the construction of vehicles. Demountable bodywork systems are specified in other standards.

This European Standard does not deal with:

- walker-operated and hand-held machines;
- machines for the maintenance of sports grounds;
- machines for agriculture, horticulture and forestry;
- winter-service machines;
- street-cleansing machines, except sweepers <sup>A2</sup> *deleted text* <sup>A2</sup>;
- earth-moving machinery;
- pit and sewer cleaning vehicles/-machines;
- lifting platforms;
- refuse-collecting vehicles;
- bridge-inspection equipment;
- loading cranes;
- wood-choppers (bush wood choppers).

A machine which is a combination of several parts with different uses should conform to all the standards referring to the corresponding parts of the machine.

This European Standard does not deal with the risks associated with the operation of machines in potentially explosive atmospheres.

This standard applies to machines manufactured after the date of approval of this standard through CEN.

## 2 Normative references

**[A1]** The following referenced documents are indispensable for the application 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. **[A1]**

**[A1]** *deleted text* **[A1]**

**[A2]** EN 953:1997+A1:2009 **[A2]**, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards*

**[A2]** *deleted text* **[A2]**

**[A1]** *deleted text* **[A1]**

**[A2]** EN ISO 2867:2011, *Earth-moving machinery — Access systems (ISO 2867:2011)* **[A2]**

**[A2]** EN ISO 4413:2010, *Hydraulic fluid power — General rules and safety requirements for systems and their components (ISO 4413:2010)*

EN ISO 4414:2010, *Pneumatic fluid power — General rules and safety requirements for systems and their components (ISO 4414:2010)* **[A2]**

**[A2]** EN ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction (ISO 12100:2010)* **[A2]**

**[A1]** **[A2]** EN ISO 13732-1:2008 **[A2]**, *Ergonomics of the thermal environment — Methods for the assessment of human responses to contact with surfaces — Part 1: Hot surfaces (ISO 13732-1:2006)* **[A1]**

**[A2]** ISO 536:2012, *Paper and board — Determination of grammage* **[A2]**

**[A2]** ISO 730:2009, *Agricultural wheeled tractors — Rear-mounted three-point linkage — Categories 1N, 1, 2N, 2, 3N, 3, 4N and 4* **[A2]**

**[A2]** ISO 789-1:1990, *Agricultural tractors — Test procedures — Part 1: Power tests for power take-off*

ISO 1974:2012, *Paper — Determination of tearing resistance — Elmendorf method* **[A2]**

ISO 2758:2001, *Paper — Determination of bursting strength*

**[A2]** *deleted text* **[A2]**

**[A2]** ISO 6405-1:2004, *Earth-moving machinery — Symbols for operator controls and other displays — Part 1: Common symbols* **[A2]**

**[A1]** ISO 6750:2005 **[A1]**, **[A2]** *Earth-moving machinery — Operator's manual — Content and format* **[A2]**

**[A1]** *deleted text* **[A1]**



ISO 11001-1:1993, *Agricultural wheeled tractors and implements — Three-point hitch couplers — Part 1: U-frame coupler*

ISO 11001-2:1993, *Agricultural wheeled tractors and implements — Three-point hitch couplers — Part 2: A-frame coupler*

ISO 11001-3:1993, *Agricultural wheeled tractors and implements — Three-point hitch couplers — Part 3: Link coupler*

ISO 11001-4:1994, *Agricultural wheeled tractors and implements — Three-point hitch couplers — Part 4: Bar coupler* <sup>A1</sup>

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100:2010 <sup>A2</sup> and the following apply. <sup>A1</sup>

#### 3.1

##### **machine for highway maintenance**

machine situated at the traffic surface which, from this position, prepares the traffic surface and its neighbouring areas

#### 3.2

##### **traffic surface**

paved area where there is vehicular and/or pedestrian traffic. Not included are rail tracks which are solely for rail-mounted traffic, and traffic areas inside buildings and in underground mines

#### 3.3

##### **mulching machine**

machine for reducing and/or shredding vegetation, working in a direction of motion substantially parallel and close to the ground

#### 3.4

##### **mowing machine**

machine for cutting vegetation, working in a direction of motion substantially parallel and close to the ground

#### 3.5

##### **hedge-cutting machine**

machine for cutting vegetation that operates not only close to the ground but can be used also, for example, for cutting hedges

#### 3.6

##### **verge mower**

machine for removing growth on verges

<sup>A2</sup> *deleted text* <sup>A2</sup>

#### <sup>A2</sup> 3.7 <sup>A2</sup>

##### **cleansing machine**

machine for cleaning highway equipment such as delineators, traffic signs, tunnel walls

<sup>A2</sup> *deleted text* <sup>A2</sup>

#### <sup>A2</sup> 3.8 <sup>A2</sup>

##### **boom**

equipment that is located between the carrier vehicle and a machine listed under <sup>A2</sup> 3.3 to 3.7 <sup>A2</sup>, serving as positioning devices