

**Maanteehooldusmasinad. Ohutusnõuded**  
**KONSOLIDEERITUD TEKST**

Highway maintenance machines - Safety requirements  
CONSOLIDATED TEXT

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 13524:2003+A1:2009 sisaldab Euroopa standardi EN 13524:2003+A1:2009 ingliskeelset teksti.</p> <p>Standard on kinnitatud Eesti Standardikeskuse 23.02.2009 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 21.01.2009.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 13524:2003+A1:2009 consists of the English text of the European standard EN 13524:2003+A1:2009.</p> <p>This standard is ratified with the order of Estonian Centre for Standardisation dated 23.02.2009 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 21.01.2009.</p> <p>The standard is available from Estonian standardisation organisation.</p>
--	---

ICS 43.160, 93.080.99

**Võtmesõnad:** cleaning, road maint, road making machines, safety, safety requirements, signal lighting, special road vehicles, specification (approval), specifications, street cleaning, sweepers, warnings, waste disposal vehicles, vehicles for street cleaning, workplace safety

### Standardite reprodutseerimis- ja levitamisoigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:  
Aru 10 Tallinn 10317 Eesti; [www.evs.ee](http://www.evs.ee); Telefon: 605 5050; E-post: [info@evs.ee](mailto:info@evs.ee)

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.

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.

CEN members are the national standards bodies of 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.



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

Management Centre: rue de Stassart, 36 B-1050 Brussels

## Contents

	page
Foreword.....	4
0 Introduction .....	5
1 Scope .....	5
2 Normative references .....	6
3 Terms and definitions.....	7
4 List of significant hazards .....	8
5 Safety requirements and/or measures .....	10
5.1 <b>A1</b> General <b>A1</b> .....	10
5.2 Combination of carrier vehicle and machine for highway maintenance .....	10
5.3 Controls .....	10
5.4 Access and walkways .....	10
5.5 Precautions against hazards caused by moving parts.....	11
5.6 Hot surfaces .....	11
5.7 Attachment fittings .....	11
5.8 Safety mechanisms for changing machines.....	11
5.9 Lifting devices.....	11
5.10 Safety mechanism for transportation .....	12
5.11 Support equipment for machines and components .....	12
5.12 Disconnectable power and signal-transmitting systems .....	12
5.13 Requirements for fluid power systems .....	13
5.13.1 Hydraulic systems .....	13
5.13.2 Pneumatic systems .....	13
5.14 Special protection against parts being ejected .....	13
5.15 Controls for machines using revolving/oscillating tools .....	13
5.16 Protective covering of moving parts .....	13
5.17 Special protection measures to prevent unintentional contact with revolving tools in the operating area of mowing and mulching machines .....	13
5.18 <b>A1</b> Noise reduction by design .....	16
5.18.1 Noise reduction at source.....	16
5.18.2 Noise reduction by protective measures .....	17
5.18.3 Noise reduction by information.....	17
5.19 Reduction of vibration <b>A1</b> .....	17
6 Information for use .....	17
6.1 <b>A1</b> General <b>A1</b> .....	17
6.2 Operator's manual .....	17
6.3 Spare parts list.....	18
7 Marking .....	19
8 Verification .....	19
Annex A (informative) Attachment plate for a truck .....	20
Annex B (normative) Stipulations on the design and testing of mowing and mulching machines .....	21
Annex ZA (informative) <b>A1</b> Relationship between this European Standard and the Essential Requirements of EU Directive 98/37/EC <b>A1</b> .....	27

<b>Annex ZB</b> (informative) <b>Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC</b>	<b>28</b>
<b>Bibliography</b>	<b>29</b>

This document is a preview generated by EVS

## Foreword

This document (EN 13524:2003+A1:2009) 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 July 2009, and conflicting national standards shall be withdrawn at the latest by December 2009.

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

This document supersedes EN 13524:2003.

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

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 Annexes ZA and ZB, which are integral parts 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, 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.

## 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 in compliance with 3.9;
- 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]**

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

EN 982:1996, *Safety of machinery — Safety requirements for fluid power systems and their components — Hydraulics*

EN 983:1996, *Safety of machinery — Safety requirements for fluid power systems and their components — Pneumatics*

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

**[A1]** EN ISO 2867:2006 **[A1]**, *Earth-moving machinery — Access systems* (**[A1]** ISO 2867:2006 **[A1]**)

**[A1]** EN ISO 12100-1:2003, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology* (ISO 12100-1:2003)

EN ISO 12100-2:2003, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles* (ISO 12100-2:2003)

EN ISO 13732-1:2006, *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]**

ISO 730-1:1994<sup>1)</sup>, *Agricultural wheeled tractors — Rear-mounted three-point linkage — Part 1: Categories 1, 2, 3 and 4*

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

ISO 3416:1986, *Textile floor coverings — Determination of thickness loss after prolonged, heavy static loading*

**[A1]** ISO 6750:2005 **[A1]**, *Earth-moving machinery — Operation and maintenance — Format and content of manuals*

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

**[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*

---

**[A1]** <sup>1)</sup> Under revision. **[A1]**