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Garden equipment - Powered lawnmowers - Safety
CONSOLIDATED TEXT

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 836:1999+A4:2011 sisaldab Euroopa standardi EN 836:1997+A4:2011 ingliskeelset teksti.	This Estonian standard EVS-EN 836:1999+A4:2011 consists of the English text of the European standard EN 836:1997+A4:2011.
Standard on kinnitatud Eesti Standardikeskuse 31.08.2011 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 31.08.2011 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
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Garden equipment - Powered lawnmowers - Safety

Matériel de jardinage - Tondeuses à gazon à moteur - Sécurité

Gartengeräte - Motorgetriebene Rasenmäher - Sicherheit

This European Standard was approved by CEN on 12 March 1997 and includes includes Corrigendum 1 issued by CEN on 13 December 2006, Amendment 1 approved by CEN on 18 September 1997, Amendment 2 approved by CEN on 4 February 2001, Amendment 3 approved by CEN on 17 December 2003 and Amendment 4 approved by CEN on 23 April 2010.

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Foreword

This document (EN 836:1997+A4:2011) has been prepared by Technical Committee CEN/TC 144 “Tractors and machinery for agriculture and forestry”, the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by February 2012, and conflicting national standards shall be withdrawn at the latest by February 2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This European Standard was approved by CEN on 12 March 1997 and includes Corrigendum 1[1] issued by CEN on 13 December 2006, Amendment 1 approved by CEN on 18 September 1997, Amendment 2 approved by CEN on 4 February 2001, Amendment 3 approved by CEN on 17 December 2003 and Amendment 4 approved by CEN on 2010-04-23.

This document supersedes EN 836:1997.

The start and finish of text introduced or altered by amendment is indicated in the text by tags ⟦A1⟩ ⟨A1⟧, ⟦A2⟩ ⟨A2⟧ ⟨A6⟧ ⟦A3⟩ ⟨A3⟧ and ⟦A4⟩ ⟨A4⟧.

The modifications of the related CEN Corrigendum have been implemented at the appropriate places in the text and are indicated by the tags ⟦AC⟩ ⟨AC⟧.

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).

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

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

[1] Applicable to the French and German versions only.

Introduction

[A4] This document is a type C standard as stated in EN ISO 12100.

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 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. [A4]

1 Scope

This European Standard specifies safety requirements and their verification for the design and construction of powered rotary and cylinder lawnmowers, including pedestrian-controlled and ride-on (riding) types, and lawn and garden tractors, professional lawnmowers, and lawn and garden tractors with mowing attachments.

This European Standard is [A3] not applicable to machines covered by EN 786, lawn edgers, flail mowers, scrub cutters, automatic (robot) mowers, sickle-bar mowers, [A3] or agricultural mowers.

This standard is not applicable to rotary lawnmowers for which the cutting means is a generally circular central drive unit on which is mounted, either one or more non-metallic filaments or one or more non-metallic, pivotally mounted cutting elements. These cutting elements rely on centrifugal force to achieve cutting with the [A3] kinetic energy of a single cutting element not exceeding 10 J [A3].

It describes methods for the elimination or reduction of hazards arising from their use - in addition, it specifies the type of information to be provided by the manufacturer on safe working practices.

[A3] This standard is not applicable to lawnmowers as covered by EN 60335-2-77 and EN 50338. [A3]

The list of significant hazards dealt with in this standard is given in annex A. Annex A also indicates the hazards which have not been dealt with.

[A4] The risk of contact with power driven components of ride-on machines (definition 3.28) other than the cutting means and ground contacting parts, has not been dealt with for persons other than the operator when in the driving position. [A4]

[A3] Environmental aspects and EMC have not been dealt with in this standard. [A3]

[A4] This document is not applicable to powered lawnmowers which are manufactured before the date of its publication as EN. [A4]

NOTE The reduction of risks from noise and vibration will be the subject of amendments to this standard now being developed.

2 Normative references

[A4] 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. [A4]

[A4] *deleted text* [A4]

[A2] EN 1032:1996, *Mechanical vibration — Testing of mobile machinery in order to determine the whole-body vibration emission value — General*

EN 1033:1995, *Hand-arm vibration — Laboratory measurement of vibration at the grip surface of hand-guided machinery — General* [A2]

[A4] *deleted text* [A4]

[A3] EN 50338, *Safety of household and similar electrical appliances — Particular requirements for pedestrian controlled battery powered electrical lawnmowers* [A3]

[A3] EN 60335-2-77, *Safety of household and similar electrical appliances — Part 2-77: Particular requirements for pedestrian controlled mains-operated lawnmowers (IEC 60335-2-77:1996, modified)* [A3]

[A2] EN ISO 354:1993, *Acoustics — Measurement of sound absorption in a reverberation room (ISO 354:1985)*

EN ISO 3744:1995, *Acoustics — Determination of sound power levels of noise sources using sound pressure – Engineering method in an essentially free field over a reflecting plane (ISO 3744:1994)* [A2]

[A4] EN ISO 4871, *Acoustics — Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)* [A4]

[A3] EN ISO 5353, *Earth-moving machinery, and tractors and machinery for agriculture and forestry — Seat index point (ISO 5353:1995)* [A3]

[A4] EN ISO 5674, *Tractors and machinery for agriculture and forestry — Guards for power take-off (PTO) drive-shafts — Strength and wear tests and acceptance criteria (ISO 5674:2004, corrected version 2005-07-01)* [A4]

EN ISO 6682:1995, *Earth moving machinery — Zones of comfort and reach for controls*

[A2] EN ISO 11201:1995, *Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at a work station and at other specified positions — Engineering method in an essentially free field over a reflecting plane (ISO 11201:1995)* [A2]

[A4] *deleted text* [A4]

[A4] 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 13857:2008, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs* (ISO 13857:2008) [A4]

ISO 500:1991, *Agricultural tractors — Rear-mounted power take-off — Types 1, 2 and 3*

[A4] *deleted text* [A4]

ISO 3304:1985, *Plain end seamless precision steel tubes — Technical conditions for delivery*

ISO 3305:1985, *Plain end welded precision steel tubes — Technical conditions for delivery*

ISO 3306:1985, *Plain end as-welded and sized precision steel tubes — Technical conditions for delivery*

[A4] ISO 3767-1:1998 [A4], *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator control and other displays — Part 1: Common symbols*

[A4] ISO 3767-2:2008 [A4], *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays — Part 2: Symbols for agricultural tractors and machinery*

[A4] ISO 3767-3 [A4], *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays — Part 3: Symbols for powered lawn and garden equipment*

[A2] ISO 4046:1978, *Paper, board, pulp and related terms — Vocabulary* [A2]

ISO 4200:1991, *Plain end steel tubes, welded and seamless — General tables of dimensions and masses per unit length*

ISO 4253:1993, *Agricultural tractors — Operator's seating accommodation — Dimensions*

ISO 5673:1993, *Agricultural tractors and machinery — Power take-off drive shafts and position of power-input connection*

ISO 9190:1990, *Lawn and garden ride-on (riding) tractors — Drawbar*

ISO 9191:1991, *Lawn and garden ride-on (riding) tractors — Three-point hitch*

ISO 9192:1991, *Lawn and garden ride-on (riding) tractors — One-point tubular sleeve hitch*

ISO 9193:1990, *Lawn and garden ride-on (riding) tractors — Power take-off*

3 Definitions

For the purposes of this European Standard, the following definitions apply:

3.1
blade tip circle
the path described by the outermost point of the cutting means cutting edge as it rotates about its shaft axis

3.2
braking distance
the distance travelled between the point of the first application of the brake control and the point at which the machine comes to rest

3.3
braking system
a combination of one or more brakes and related means of operation and control

[A3] *deleted text* [A3]

3.4
cutting means; blade
the mechanism used to provide the cutting action

3.5
cutting means enclosure
the part or assembly which provides the protective means around the cutting means