



SLOVENSKI STANDARD
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Nadomešča:
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Oprema za urejanje zasneženih površin - Varnostne zahteve

Snow grooming equipment - Safety requirements

Pistenpflegegeräte - Sicherheitsanforderungen

Engins de damage - Exigences de sécurité

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Snow grooming equipment - Safety requirements

Engins de damage - Exigences de sécurité

Pistenpflegegeräte - Sicherheitsanforderungen

This European Standard was approved by CEN on 10 January 2009 and includes Amendment 1 approved by CEN on 16 November 2014.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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EUROPÄISCHES KOMITEE FÜR NORMUNG

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EN 15059:2009+A1:2015 (E)**Foreword**

This document (EN 15059:2009+A1:2015) 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of an identical text or by endorsement, at the latest by August 2015, and conflicting national standards shall be withdrawn at the latest by August 2015.

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 document supersedes EN 15059:2009.

This document includes Amendment 1 approved by CEN on 2014-11-16.

The start and finish of text introduced or altered by amendment is indicated in the text by tags $\boxed{A_1}$ $\boxed{A_1}$.



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).

$\boxed{A_1}$ For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document. $\boxed{A_1}$

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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.

Introduction

This document is a Type C standard as stated in  EN ISO 12100:2010 .

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

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EN 15059:2009+A1:2015 (E)**1 Scope**

This standard applies to snow grooming equipment as defined in 3.1 and its use with attachments as described in 3.2. With the exception of rear-mounted snow tillers and front blade attachments, this standard does not deal with the specific hazards of the attachments themselves. This standard is not applicable to snowmobiles.

This standard deals with all significant hazards, hazardous situations and events relevant to snow grooming equipment, when it is used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer (see Clause 4). It also deals with hazards during commissioning, use, fault-finding and maintenance.

This standard is not applicable to snow grooming equipment manufactured before the date of publication of this document by CEN.

NOTE For travelling on public roads, national traffic regulations apply until harmonised requirements are available.

2 Normative references

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] EN 3-7:2004+A1:2007 **[A1]**, *Portable fire extinguishers — Part 7: Characteristics, performance requirements and test methods*

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

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

EN 30326-1:1994, *Mechanical vibration — Laboratory method for evaluating vehicle seat vibration — Part 1: Basic requirements (ISO 10326-1:1992)*

[A1] EN ISO 2867:2011 **[A1]**, *Earth-moving machinery — Access systems* **[A1]** (ISO 2867:2011) **[A1]**

[A1] EN ISO 3164:2013 **[A1]**, *Earth-moving machinery — Laboratory evaluations of protective structures — Specifications for the deflection-limiting volume* **[A1]** (ISO 3164:2013) **[A1]**

EN ISO 3411:2007, *Earth-moving machinery — Physical dimensions of operators and minimum operator space envelope (ISO 3411:2007)*

EN ISO 3471:2008, *Earth-moving machinery — Roll-over protective structures — Laboratory tests and performance requirements (ISO 3471:2008)*

[A1] EN ISO 4871:2009 **[A1]**, *Acoustics — Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)*

EN ISO 5353:1998, *Earth-moving machinery, and tractors and machinery for agriculture and forestry — Seat index point (ISO 5353:1995)*

EN ISO 6683:2008, *Earth-moving machinery — Seat belts and seat belt anchorages — Performance requirements and tests (ISO 6683:2005)*

EN ISO 7096:2008, *Earth-moving machinery — Laboratory evaluation of operator seat vibration (ISO 7096:2000)*

EN ISO 11688-1:2009 ^{A1}, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 1: Planning (ISO/TR 11688-1:1995)*

EN ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction (ISO 12100:2010)* ^{A1}

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

EN ISO 13849-1:2008, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2006)*

EN ISO 14122-3:2001, *Safety of machinery — Permanent means of access to machinery — Part 3: Stairs, stepladders and guard-rails (ISO 14122-3:2001)*

EN ISO 14982:2009 ^{A1}, *Agricultural and forestry machines — Electromagnetic compatibility — Test methods and acceptance criteria (ISO 14982:1998)*

ISO 3795:1989, *Road vehicles, and tractors and machinery for agriculture and forestry — Determination of burning behaviour of interior materials*

ISO 6393:2008, *Earth-moving machinery — Determination of sound power level — Stationary test conditions*

ISO 6394:2008, *Earth-moving machinery — Determination of emission sound pressure level at operator's position — Stationary test conditions*

ISO 9533:2010, *Earth-moving machinery — Machine-mounted audible travel alarms and forward horns — Test methods and performance criteria* ^{A1}

ISO 11112:1995, *Earth-moving machinery — Operator's seat — Dimensions and requirements*

ISO 14401-1:2009 ^{A1}, *Earth-moving machinery — Field of vision of surveillance and rear-view mirrors — Part 1: Test methods*

ISO 14401-2:2009 ^{A1}, *Earth-moving machinery — Field of vision of surveillance and rear-view mirrors — Part 2: Performance criteria*

ECE R 43:2012, *Uniform provisions concerning the approval of safety glazing materials and their installation on vehicles (revision 3)* ^{A1}

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ^{A1} EN ISO 12100:2010 ^{A1} and the following apply.

3.1

snow grooming equipment

self-propelled, motor-driven machine on tracks, intended primarily for grooming snow

^{A1} Note 1 to entry: As a secondary use, the machines can be used for transportation, landscaping work or transport of persons. ^{A1}



Figure 1 — Snow grooming equipment with main components

3.2 working attachment
attachment which can be mounted on or attached to a snow grooming equipment; for example front pusher blade, smoother, rear-mounted snow tiller, Nordic ski-trail groomer, snow cutter, snow blower, snow carrier, winch, mower, mulching machine

4 List of significant hazards

This clause contains all the significant hazards, hazardous situations and events, as far as they are dealt with in this standard, identified by risk assessment as significant for this type of machinery and which require action to eliminate or reduce the risk.

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Table 1 — List of significant hazards

No.	Hazard (A1) deleted text (A1)	Clause
	General	
1.1 1.2	Crushing hazard, shearing hazard	(A1) 5.6.1.6 (A1), (A1) 5.6.1.7 (A1), 5.14.4, 5.14.5, 5.14.6, 5.15.2
1.4 1.5	Entanglement hazard, drawing-in and trapping hazard	5.14.4, 5.14.5, 5.14.6
3.1	Burns by contact with hot surfaces	5.9.2
3.2	Damage to health by hot or cold working environment	(A1) 5.6.1.1 (A1), (A1) 5.6.1.2 (A1)
8.1	Unhealthy postures or excessive effort	5.2.1, 5.5, (A1) 5.6.1.8 (A1), 5.7, 5.14.2, 5.14.3, 5.15.1, 5.15.2
8.8	Inadequate design or location of visual display units	5.8.4
10.1	Failure/disorder of the control system	5.2.2, 5.8.3
10.6	Errors made by the operator	5.8.2, 5.8.4
13	Failure of the power supply	5.2.3, 5.14.4, 5.14.5, 5.14.6
	Hazards due to mobility	

No.	Hazard ^[A1] deleted text _[A1]	Clause
20.1	Hazards when starting	5.4.1
20.2	Movement without a driver at the driving position	5.3.8, 5.8.1
20.3	Movement without all parts in a safe position	5.8.4
20.6	Insufficient ability of machinery to be slowed down, stopped and immobilised	5.2.3, 5.5
21.1	Fall of persons during access to (or at/from) the work position	^[A1] 5.6.1.5 _[A1] , ^[A1] 5.6.2.1.2 _[A1] , ^[A1] 5.6.2.1.3 _[A1]
21.2	Exhaust gases/lack of oxygen at the work position	5.9.1, 5.9.3
21.3	Fire (flammability of the cab, lack of extinguishing means)	^[A1] 5.6.1.12 _[A1]
21.4	Mechanical hazards at the work position: roll-over penetration by objects	^[A1] 5.6.1.3 _[A1] , ^[A1] 5.6.1.9 _[A1] , ^[A1] 5.6.1.10 _[A1] , ^[A1] 5.6.2.1.4 _[A1]
21.5	Insufficient visibility from the work positions	^[A1] 5.6.2.1.5 _[A1] , 5.12, 5.13, 5.14.1
21.6	Inadequate lighting	^[A1] 5.6.1.14 _[A1] , 5.10, Clause 1, 5.10.2
21.7	Inadequate seating	5.7
21.8	Noise	5.16, 7.1.1 16)
21.9	Vibration at the work position	^[A1] 5.6.2.1.3 _[A1]
21.10	Insufficient means for evacuation/emergency exit	^[A1] 5.6.1.4 _[A1] , ^[A1] 5.6.1.14 _[A1]
^[A1] 21.11	Roll-over and tip-over	5.6, Annex B _[A1]
22.1	Inadequate location of manual controls	5.2.1, 5.5
22.2	Inadequate design of manual controls and their mode of operation	5.2.1, 5.5, ^[A1] 5.6.1.8 _[A1] , 5.8.1, 5.8.2
23	Hazards from handling the machine (lack of stability)	5.14.2, 5.15.2
24.1	Hazards from the engine and the batteries	5.15.1, 5.15.3
25.1	Unauthorised start-up/use	5.4.2
25.3	Lack or inadequacy of visual or acoustic warning means	^[A1] 5.6.1.11 _[A1] , 5.10.3, 5.10.4, 5.10.5, 5.10.6, 5.11.1, 5.11.2
26	Hazards from insufficient instructions for the driver/operator	^[A1] 5.6.1.14 _[A1]
Other	Hazard from missing first aid means	^[A1] 5.6.1.13 _[A1]

5 Safety requirements and/or protective measures

5.1 General

Machinery shall comply with the safety requirements and/or protective measures of this clause.