



SLOVENSKI STANDARD
SIST EN 500-2:2007+A1:2008
01-december-2008

Premični stroji za gradnjo cest - Varnost - 2. del: Posebne zahteve za stroje za rezkanje cestišča

Mobile road construction machinery - Safety - Part 2: Specific requirements for road-milling machines

Bewegliche Straßenbaumaschinen - Sicherheit - Teil 2: Besondere Anforderungen an Straßenfräsen

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Machines mobiles pour la construction de routes - Sécurité - Partie 2: Prescriptions spécifiques pour fraiseuses routières

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ICS:

93.080.10 Gradnja cest Road construction

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EUROPEAN STANDARD
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EN 500-2:2006+A1

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Mobile road construction machinery - Safety - Part 2: Specific requirements for road-milling machines

Machines mobiles pour la construction de routes - Sécurité
- Partie 2: Prescriptions spécifiques pour fraiseuses
routières

Bewegliche Straßenbaumaschinen - Sicherheit - Teil 2:
Besondere Anforderungen an Straßenfräsen

This European Standard was approved by CEN on 17 August 2006 and includes Amendment 1 approved by CEN on 11 September 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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Contents

	Page
Foreword.....	4
Introduction	5
1 Scope	6
2 Normative references	6
3 Terms and definitions	7
4 List of significant hazards	7
5 Safety requirements and/or protective measures	7
5.1 Lighting, signalling and marking lights and reflex-reflector devices.....	7
5.2 Operation and handling	7
5.3 Operator's station	7
5.4 Operator's seat.....	7
5.5 Controls and indicators	7
5.6 Starting	8
5.7 Stopping	8
5.8 Access system to operator's station and to maintenance points	8
5.9 Protection	8
5.10 Pressurised systems	10
5.11 Fire protection.....	10
5.12 Hot surfaces	10
5.13 Signal devices and warning signs	10
5.14 Liquid gas units	10
5.15 Electrical and electronic systems	10
5.16 Electro-magnetic compatibility (EMC)	10
5.17 Noise and vibration.....	11
5.18 Conveyors	11
6 Verification of safety requirements and/or protective measures	11
7 Information for the user	11
Annex A (normative) Noise test code for road-milling machines.....	12
Annex B (informative) Examples of road-milling machines.....	17
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EC Directive 98/37/EC	19
Annex ZB (informative) A1 Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC A1	20
Bibliography	21
Figures	
Figure 1 — Milling equipment.....	9
Figure 2 — Warning sign	10
Figure A.1 — Basic length L	13
Figure A.2 — Microphone positions	13

Figure B.1 — Road-milling machine with front-loading conveyor	17
Figure B.2 — Road-milling machine with rear-loading conveyor.....	18
Figure B.3 — Road-milling machine without conveyor	18

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[SIST EN 500-2:2007+A1:2008](https://standards.iteh.ai/catalog/standards/sist/be372d85-fb38-40fc-9265-58075b8710fd/sist-en-500-2-2007a1-2008)

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EN 500-2:2006+A1:2008 (E)**Foreword**

This document (EN 500-2:2006+A1:2008) 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 April 2009, and conflicting national standards shall be withdrawn at the latest by December 2009.

This document supersedes A1 EN 500-2:2006 A1.

This document includes Amendment 1, approved by CEN on 2008-09-11.

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 EU Directive(s).

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

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EN 500 “Mobile road construction machinery — Safety” comprises the following parts:

- Part 1: Common requirements;
- Part 2: Specific requirements for road-milling machines;
- Part 3: Specific requirements for soil-stabilising machines and recycling machines;
- Part 4: Specific requirements for compaction machines;
- Part 6: Specific requirements for paver-finishers.

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 ISO 12100-1.

The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this European Standard.

When provisions of this type C standard are different from those 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 500-2:2006+A1:2008 (E)**1 Scope**

This part of EN 500 specifies the safety requirements for road-milling machines as defined in Clause 3 and deals with all significant hazards, hazardous situations and events relevant to these machines, when they are used as intended and under conditions of misuse which are reasonably foreseeable.

This part of EN 500 contains additional requirements to EN 500-1 "Common requirements".

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.

EN 500-1:2006, *Mobile road construction machinery — Safety — Part 1: Common requirements*.

EN 811:1996, *Safety of machinery — Safety distances to prevent danger zones being reached by the lower limbs*.

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

EN 61310-1:1995, *Safety of machinery — Indication, marking and actuation — Part 1: Requirements for visual, auditory and tactile signals (IEC 61310-1:1995)*.

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)*.

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)*.

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100-1:2003 and the following apply.

3.1

road-milling machines

mobile road construction machines used to mill material from paved surfaces

3.2

milling equipment

power-driven cylindrical bodies on which the milling tools are fitted. The cylindrical bodies rotate during the milling operation

4 List of significant hazards

Annex F of EN 500-1:2006 applies with the following exception:

Table 1

5	Hazards generated by vibration
5.1	Hand-arm vibrations

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5 Safety requirements and/or protective measures

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5.1 Lighting, signalling and marking lights and reflex-reflector devices

5.2 of EN 500-1:2006 applies.

5.2 Operation and handling

5.3 of EN 500-1:2006 applies with the following addition:

— to minimise the risk of dust, appropriate provisions (e.g. a water sprinkling system) shall be made.

5.3 Operator's station

5.4 of EN 500-1:2006 applies. with the following exception:

5.4.2 of EN 500-1:2006, first paragraph, does not apply for road-milling machines.

5.4 Operator's seat

5.5 of EN 500-1:2006 applies.

5.5 Controls and indicators

5.6 of EN 500-1:2006 applies.

EN 500-2:2006+A1:2008 (E)**5.6 Starting**

5.7 of EN 500-1:2006 applies.

5.7 Stopping

5.8 of EN 500-1:2006 applies with the following addition:

- it shall be possible to stop the milling equipment, even while the power unit (engine) is running;
- where additional controls to operate the machine are provided, an emergency stop shall be available.

5.8 Access system to operator's station and to maintenance points

5.9 of EN 500-1:2006 applies with the following addition:

- provisions shall be made to minimise hazards if wheels and tracks are in the vicinity of the operator's station and/or in the access areas. If there are guards, they shall comply with Clauses 5 and 6 of EN 953:1997.

5.9 Protection**5.9.1 General**

5.10.1 to 5.10.3 of EN 500-1:2006 apply with the following additions:

5.9.2 Milling equipment**5.9.2.1 General**

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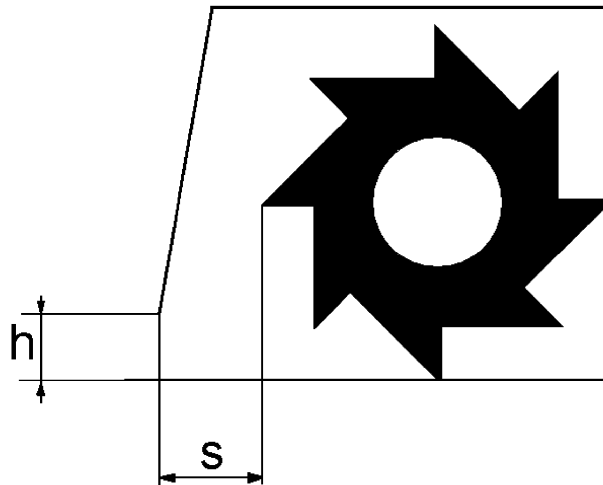
The milling equipment shall be safeguarded to prevent accidental physical contact and to retain debris and parts possibly ejected.

Guards shall comply with Clauses 6 and 7 of EN 953:1997.

Guards and flaps shall remain permanently attached, even when they are opened.

5.9.2.2 Rear guards

With regard to hazards present in the lower limb area, EN 811 shall be observed. For the foot area, the following table in Figure 1 shall be observed.



h mm	s mm
≤ 100	≥ 250
≤ 120	≥ 280

Figure 1 — Milling equipment
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The dimension h may be exceeded during the intended use for a short period of time if necessary, as an example, e.g. to complete material discharge or the lowering of the milling drum adjacent to an obstacle. The risk of contact with hazardous areas at the rotor shall be reduced as far as possible by protection devices (e.g. protection device according to EN 953, rear side monitoring system). The warning sign according to Figure 2 shall be permanently installed and clearly visible in the hazardous area.

5.9.2.3 Side guards

Power-operated side panels of the drum guards, intended to be controlled during operation of the machine, shall comply with the following design criteria:

- the controls shall not lock in any position except in neutral (hold-to-run control),
- the controls shall be fitted out of danger areas,
- a yellow flashing light shall be fitted within the danger areas and shall be activated whenever the controls are operated

and

- the power-operated side panels shall automatically return to their normal (pre-set) position when the controls are released except when the milling drum is stopped.

5.9.3 Lowering the milling equipment

The machines shall be prevented from any unintentional movement (e.g. jumping backwards) when lowering the milling equipment to the cutting mode.

5.9.4 Height adjustable devices

Elevating devices on the machines shall be provided with a locking device. Hydraulic load holding devices shall prevent any unintended lowering of the elevating devices.