

STN	Stroje na rezanie podlahy Bezpečnosť	STN EN 13862 27 8939
------------	-------------------------------------------------	----------------------------------------

Floor cutting-off machines - Safety

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 02/22

Obsahuje: EN 13862:2021

Oznámením tejto normy sa ruší
STN EN 13862+A1 (27 8939) zo septembra 2009

134446



EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 13862

December 2021

ICS 93.080.10

Supersedes EN 13862:2001+A1:2009

English Version

Floor cutting-off machines - Safety

Machines à scier les sols - Sécurité

Bodentrennschleifmaschinen - Sicherheit

This European Standard was approved by CEN on 15 November 2021.

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-CENELEC 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-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN 13862:2021 (E)**Contents**

Page

European foreword.....	5
Introduction	6
1 Scope	7
2 Normative references	7
3 Terms and definitions	9
4 Safety requirements and/or protective/risk reduction measures.....	12
4.1 General.....	12
4.2 Mechanical hazards.....	12
4.2.1 General.....	12
4.2.2 Protection against moving parts	12
4.2.3 Minimum strength of the guard	13
4.2.4 Immobilization, stability	13
4.2.5 Transport and handling.....	14
4.2.6 Fixing of the cutting-off wheel(s)	14
4.2.7 Combustion engine-starting device.....	14
4.2.8 Controls.....	14
4.2.9 Failure of the power supply.....	15
4.3 Electrical hazards.....	16
4.3.1 General.....	16
4.3.2 Water pump	16
4.4 Thermal hazards	16
4.4.1 General.....	16
4.4.2 Test method	16
4.5 Exhaust fumes (and gas).....	16
4.6 Machines having a hydraulic power transmission	17
4.7 Fluid containers.....	17
4.8 Water supply and dust emission	17
4.9 Rotational speed.....	17
4.10 Noise	17
4.10.1 Noise reduction at the design stage.....	17
4.10.2 Noise emission measurement, declaration and verification procedures.....	18
4.11 Vibrations	18
4.11.1 Reduction by design and protective measures	18
4.11.2 Vibration measurement, declaration and verification procedures.....	18
4.12 Maintenance.....	18
5 Verification of safety requirements and/or protective/risk reduction measures	19
6 Information for use	20
6.1 General.....	20
6.2 Marking, warnings and signs	21
6.2.1 Marking.....	21
6.2.2 Warnings and signs	21
6.3 Accompanying documents.....	22
6.3.1 Instruction handbook.....	22
6.3.2 Description of the machine.....	22

6.3.3	Instructions for transport, handling and storage of the machine and its dismountable parts.....	23
6.3.4	Instructions for the installation and the use of the machine.....	23
6.3.5	Maintenance instructions.....	24
Annex A (informative) List of significant hazards		26
Annex B (normative) Noise test code - accuracy grade 2		28
B.1	General	28
B.2	Measurement of the A-weighted emission sound pressure level at the work station of the operator	28
B.3	Determination of the sound power level emitted by the machine	29
B.4	Measurement uncertainties.....	29
B.5	Operating conditions.....	30
B.6	Information to be recorded	30
B.7	Information to be reported.....	30
B.8	Noise emission declaration by the manufacturer.....	31
Annex C (normative) Dimensions of the flanges for cutting-off diamond wheel.....		33
C.1	General	33
C.2	Ratios of the diameters of the cutting-off wheel	33
C.3	Minimal diameter S of the flange	34
C.4	Minimal width R of contact surface of the flange with the cutting-off wheel.....	34
C.5	Depth of the clearance T	34
Annex D (normative) Strength of the guards - State of the art concerning the characteristics of guards used with cutting-off wheels		35
D.1	General	35
D.2	Guard specifications	35
D.2.1	Calculation method for the guard thickness.....	35
D.2.2	Example of a minimum thickness of guards made with E24 grade-2 steel	38
D.2.3	Other methods for determining the minimum thickness of guards	39
Annex E (informative) Safety signs.....		40
Annex F (normative) Verification of surface temperature		42
F.1	Test equipment.....	42
F.2	Test method.....	42
F.3	Test acceptance	42
Annex G (normative) Vibration-test code.....		43
G.1	General	43
G.2	Terms and definitions.....	43
G.3	Vibration parameters to be measured and determined.....	43
G.4	Instrumentation.....	43

EN 13862:2021 (E)

G.4.1	General	43
G.4.2	Accelerometer	43
G.4.3	Fastening of accelerometer	44
G.4.4	Calibration	44
G.5	Operating conditions, testing and declaration of results	44
G.6	Uncertainties	45
G.7	Information to be reported	46
Annex ZA (informative)	Relationship between this European Standard and the essential requirements of Directive 2006/42/EC aimed to be covered	47
Bibliography		50

European foreword

This document (EN 13862:2021) 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 June 2022, and conflicting national standards shall be withdrawn at the latest by June 2022.

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

This document supersedes EN 13862:2001+A1:2009.

This document has been prepared under a Standardization Request 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.

The main differences between this standard and EN 13862:2001+A1:2009 are as follows:

- a) normative references (Clause 2) revised and updated;
- b) list of significant hazards revised and updated;
- c) requirements for warnings;
- d) requirements for Information for use;
- e) requirements for operator's instructions;
- f) requirements for noise test code;
- g) illustrations and pictograms updated.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

EN 13862:2021 (E)**Introduction**

This document is a type-C standard as stated in EN ISO 12100.

This document is of relevance, in particular, for the following stakeholder groups representing the market players with regard to machinery safety:

- machine manufacturers (small, medium and large enterprises);
- health and safety bodies (regulators, accident prevention organizations, market surveillance, etc.).

Others can be affected by the level of machinery safety achieved with the means of the document by the above-mentioned stakeholder groups:

- machine users/employers (small, medium and large enterprises);
- machine users/employees (e.g. trade unions, organizations for people with special needs);
- service providers, e.g. for maintenance (small, medium and large enterprises);
- consumers (in case of machinery intended for use by consumers).

The above-mentioned stakeholder groups have been given the possibility to participate in the drafting process of this document.

The machinery concerned and the extent to which hazards, hazardous situations or hazardous events are covered are indicated in the Scope of this document.

When requirements of this type-C standard are different from those which are stated in type-A or type-B standards, the requirements of this type-C standard take precedence over the requirements of the other standards for machines that have been designed and built according to the requirements of this type-C standard.

1 Scope

This document applies to pedestrian-controlled floor-sawing machines having travel power feed or manual feed (see 3.1) for sawing, grooving and milling floor surfaces made of concrete, asphalt and similar mineral building materials where the main power is supplied by electric or internal combustion prime engine. The power transmission of floor-sawing machines is mechanical or hydraulic.

This document deals with all significant hazards, hazardous situations or hazardous events relevant to floor sawing machines, when they are used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer (see Annex A). This document specifies the appropriate technical measures to eliminate or reduce risks arising from the significant hazards during the lifetime of the machinery as described in EN ISO 12100:2010, 5.4.

These machines are designed for use with rotating cutting-off wheels for wet and dry cutting. These cutting-off wheels can be either a diamond cutting-off wheel or a boron nitride cutting-off wheel.

This document does not apply to:

- self-propelled ride-on floor-sawing machines;
- machines moving along a rail;
- hand-held portable cutting off machines for construction materials mounted on a mobile support, to be used as floor saws;
- remote-controlled machines.

In this document, floor-sawing machines are called “machines”, and cutting-off wheels are also called “tools”.

This document applies to machines which are manufactured after the date of approval of the standard by CEN.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 206:2013+A2:2021, *Concrete — Specification, performance, production and conformity*

EN 12096:1997, *Mechanical vibration — Declaration and verification of vibration emission values*

EN 13236:2019, *Safety requirements for superabrasive products*

EN 60204-1:2018, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2016)*

EN 60335-2-41:2003,¹ *Household and similar electrical appliances — Safety — Part 2-41: Particular requirements for pumps (IEC 60335-2-41:2002)*

¹ As impacted by EN 60335-2-41:2003/A1:2004 and EN 60335-2-41:2003/A2:2010.

EN 13862:2021 (E)

EN 60529:1991,² *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1991)*

EN ISO 3744:2010, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering methods for an essentially free field over a reflecting plane (ISO 3744:2010)*

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

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

EN ISO 5349-2:2001,³ *Mechanical vibration — Measurement and evaluation of human exposure to hand-transmitted vibration — Part 2: Practical guidance for measurement at the workplace (ISO 5349-2:2001)*

EN ISO 8041-1:2017, *Human response to vibration — Measuring instrumentation — Part 1: General purpose vibration meters (ISO 8041-1:2017)*

EN ISO 11201:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions in an essentially free field over a reflecting plane with negligible environmental corrections (ISO 11201:2010)*

EN ISO 11688-1:2009, *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)*

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 13849-1:2015, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2015)*

EN ISO 13857:2019, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857:2019)*

EN ISO 14120:2015, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards (ISO 14120:2015)*

EN ISO 20643:2008,⁴ *Mechanical vibration — Hand-held and hand-guided machinery — Principles for evaluation of vibration emission (ISO 20643:2005)*

ISO 5348:2021, *Mechanical vibration and shock — Mechanical mounting of accelerometers*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN