SLOVENSKI STANDARD
oSIST prEN 15571:2019

01-april-2019

Stroji in obrati za pridobivanje in obdelavo naravnega kamna - Varnost - Zahteve za stroje za dodelavo površine

Machines and plants for mining and tooling of natural stone - Safety - Requirements for surface-finishing machines

Maschinen und Anlagen zur Gewinnung und Bearbeitung von Naturstein - Sicherheit - Anforderungen an Flächenschleifmaschinen

Machines et installations d'extraction et d'usinage des pierres naturelles - Sécurité - Prescriptions relatives aux machines de finition de surface

Ta slovenski standard je istoveten z: **prEN 15571**

ICS:

25.080.50	Brusilni in polirni stroji	Grinding and polishing machines
73.120	Oprema za predelavo rudnin	Equipment for processing of minerals

oSIST prEN 15571:2019 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 15571

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ICS 25.080.50; 73.120

Will supersede EN 15571:2014

English Version

Machines and plants for mining and tooling of natural stone - Safety - Requirements for surface-finishing machines

Machines et installations d'extraction et d'usinage des pierres naturelles - Sécurité - Prescriptions relatives aux machines de finition de surface

Maschinen und Anlagen zur Gewinnung und Bearbeitung von Naturstein - Sicherheit - Anforderungen an Flächenschleifmaschinen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 151.

If this draft becomes a European Standard, 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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European foreword

This document (prEN 15571:2019) has been prepared by the Technical Committee CEN/TC 151 “Construction equipment and building material machines - Safety”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 16564:2014.

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 2006/42/EC, see informative Annex ZA which is an integral part of this document.

Introduction

This document has been prepared to be a harmonized standard to provide one means of conforming to the essential health and safety requirements of the Machinery Directive and associated EFTA Regulations.

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 at the drafting process of this document.

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 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 stationary surface-finishing machines with stationary work piece (see 3.1) or with moving work piece (see 3.2) which are used to grind or polish horizontal surfaces of slabs, strips or tiles of natural stone and engineered stone (e.g. agglomerated stone) as defined by EN 14618:2009.

This document deals with all significant hazards, hazardous situations and events relevant to surface-finishing machines, when they are used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer (see Clause 4).

This document specifies the appropriate technical measures to eliminate or reduce risks arising from the significant hazards.

This document deals with the foreseeable lifetime of the machinery including the phases of transport, assembly, dismantling, disabling and scrapping.

This document does not deal with:

— hand-held grinding machines;

— machines intended for operation in a potentially explosive atmosphere;

— operation in severe environmental conditions (e.g. extreme temperatures, corrosive environment);

— machines intended for outdoor operation.

This document is not applicable to machinery which is manufactured before the date of publication of this document 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 166:2001, *Personal eye-protection — Specifications*

EN 1005-2:2003+A1:2008, *Safety of machinery — Human physical performance — Part 2: Manual handling of machinery and component parts of machinery*

EN 1005-4:2005+A1:2008, *Safety of machinery — Human physical performance — Part 4: Evaluation of working postures and movements in relation to machinery*

EN 14618:2009, *Agglomerated stone — Terminology and classification*

EN 50370-2:2003, *Electromagnetic compatibility (EMC) — Product family standard for machine tools - Part 2: Immunity*

EN 60204-1:2006, *Safety of machinery — Electrical equipment of machines— Part 1: General requirements (IEC 60529:1989)*

EN 60529:1991, *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)*

EN 60529:1991/A1:2000, *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989/A1:1999)*

EN 60529:1991/A1:2013, *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989/A2:2013)*

EN 61439-1:2011, *Low-voltage switchgear and controlgear assemblies — Part 1: General rules (IEC 61439 1:2011)*

EN 61496-1:2013, *Safety of machinery — Electro-sensitive protective equipment — Part 1: General requirements and tests (IEC 61496-1:2012)*

EN 82079-1:2012, *Preparation of instructions for use — Structuring, content and presentation - Part 1: General principles and detailed requirements (IEC 82079-1:2012)*

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 3746:2010, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Survey method using an enveloping measurement surface over a reflecting plane (ISO 3746:2010)*

EN ISO 3747:2010, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering/survey methods for use in situ in a reverberant environment (ISO 3747:2010)*

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

EN ISO 4414:2010, *Pneumatic fluid power — General rules and safety requirements for systems and their components (ISO 4414:2010)*

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

EN ISO 11200:2014, *Acoustics — Noise emitted by machinery and equipment — Guidelines for the use of basic standards for the determination of emission sound pressure levels at a work station and at other specified positions (ISO 11200:2014)*

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 11202:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions applying approximate environmental corrections (ISO 11202:2010)*

EN ISO 11204:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions applying accurate environmental corrections (ISO 11204:2010)*

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

EN ISO 13850:2015, *Safety of machinery — Emergency stop function — Principles for design (ISO 13850:2015)*

EN ISO 13855:2010, *Safety of machinery — Positioning of safeguards with respect to the approach speeds of parts of the human body (ISO 13855:2010)*

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

EN ISO 14118:2018, *Safety of machinery — Prevention of unexpected start-up (ISO 14118:2017)*

EN ISO 14119:2013, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection (ISO 14119:2013)*

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

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
surface-finishing machine with fixed table and mobile transversal bridge (track machines)
integrated fed machine, with stationary work piece table and a movable bridge, designed for grinding or polishing horizontal surfaces of stone slabs (see Figure 1 and Figure 2) by the use of grinding or polishing head water cooled during the working process having at least two squared axes which the working head moves over

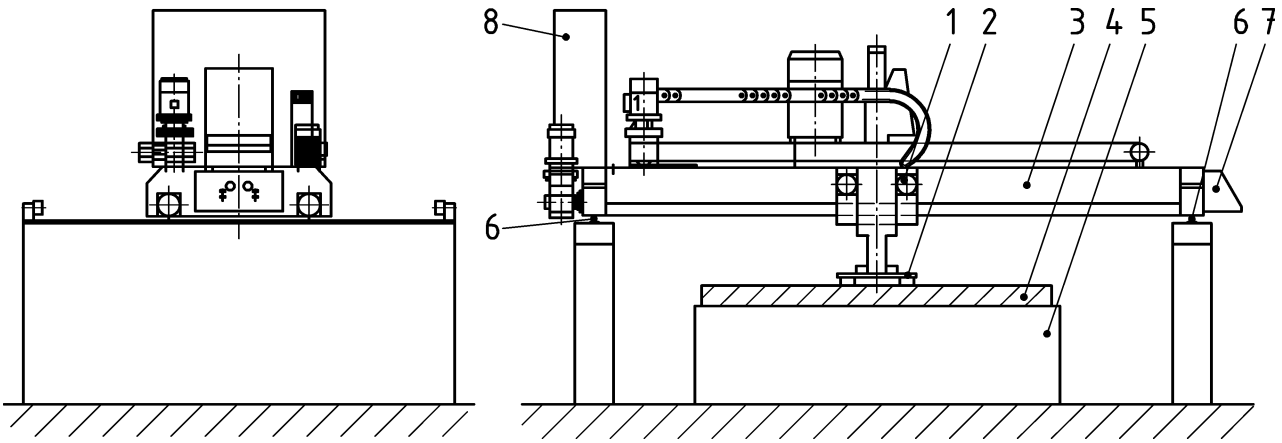
Note 1 to entry: This machine can be equipped with the following facilities:

a) automatic grinding or polishing head-change system with tool magazine;

b) grinding or polishing head-change system with bayonet locking;

c) accessory units for calibrating;

d) accessory units for polishing.

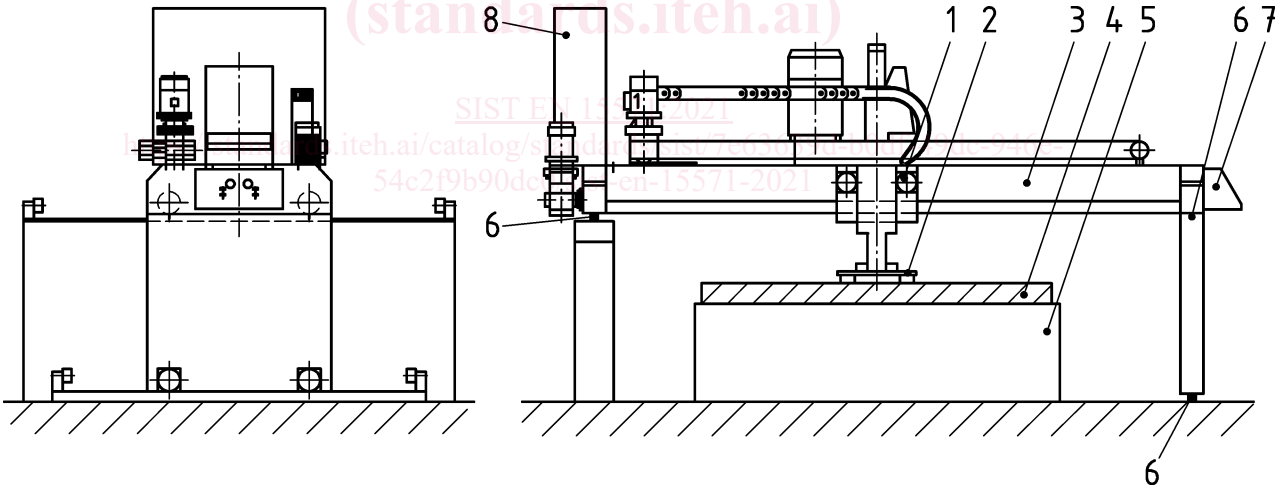


Safeguarding devices are not illustrated

Key

1	spindle	5	material support plan
2	tool	6	track
3	bridge	7	control panel
4	workpiece	8	electric panel

Figure 1 — Example of a surface-finishing machine with fixed table and mobile transversal bridge "PORTAL"



Safeguarding devices are not illustrated

Key

1	spindle	5	material support plan
2	tool	6	track
3	bridge	7	control panel
4	workpiece	8	electric panel

Figure 2 — Example of a surface-finishing machine with fixed table and mobile transversal bridge "SEMI-PORTAL"

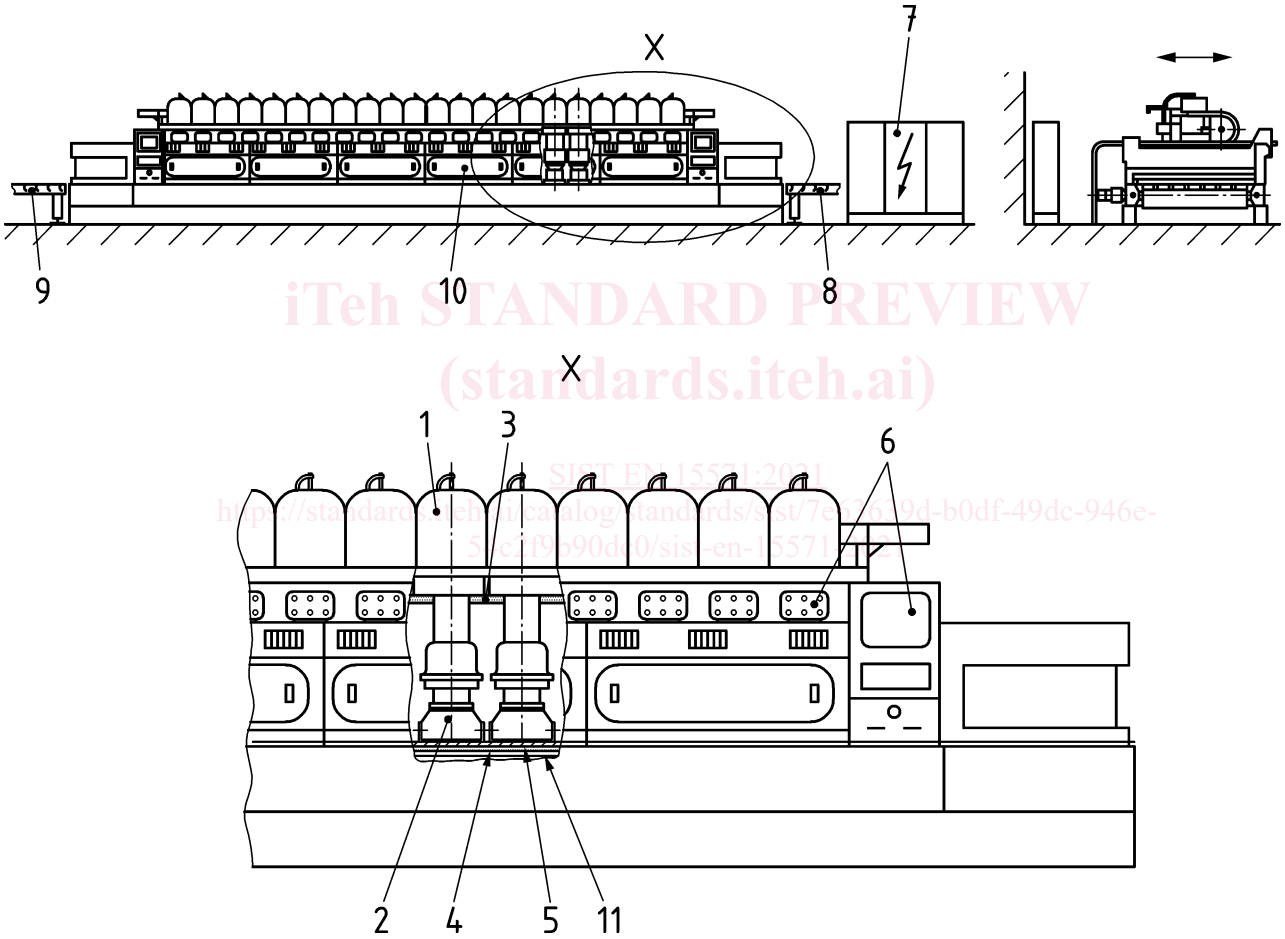
3.2
surface-finishing machine with belt conveyor and fixed or mobile spindles-holding beam
integrated fed machine, with continuous operating belt and a spindles-holding beam, designed for grinding or polishing horizontal surfaces of stone slabs (see Figure 3) by the use of grinding or polishing head water cooled during the working process having at least two squared axes which the working head moves over

Note 1 to entry: This machine can be equipped with the following facilities:

a) grinding or polishing head-change system with bayonet locking;

b) accessory units for calibrating;

c) accessory units for polishing.



Safeguarding devices are not illustrated

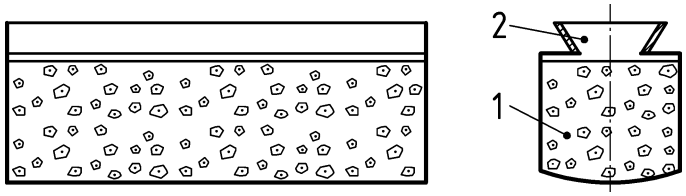
Key

1	spindle	5	workpiece	9	unloading roller track
2	grinding or polishing head	6	control panel	10	front cover (sliding door)
3	spindles-holding beam	7	electric board	11	work bench
4	belt conveyor	8	loading roller track		

Figure 3 — Example of a surface finishing machine with belt conveyor and fixed or mobile spindles-holding beam

3.3
grinding or polishing segment
part of tool that allows to remove the material from the workpiece, getting smoothed and polished surface

Note 1 to entry: During the process, it undergoes wear.



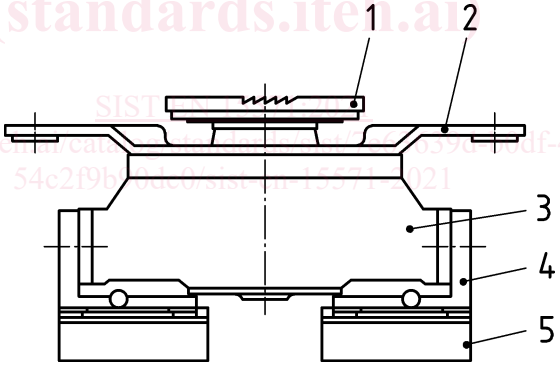
Key

1 grinding or polishing segment 2 saddle with dovetail

Figure 4 — Example of a grinding or polishing tool

3.4
grinding or polishing head
part of the machine, held up by the bridge or spindles-holding beam that generates different moving of tools

Note 1 to entry: These heads can be designed for different additional movements between grinding or polishing segment and workpiece (swing, planetary, ...).



Key

1 toothed wheel
2 grinding or polishing head carrier
3 housing of grinding or polishing head
4 grinding or polishing segment holder
5 grinding or polishing segment

Figure 5 — Example of a swing grinding or polishing head