SLOVENSKI STANDARD
SIST EN 15164:2008

01-september-2008

Stroji in obrati za pridobivanje in obdelavo naravnega kamna - Varnost - Zahteve za verigne in traļne rezalne stroje

Machines and plants for mining and tooling of natural stone - Safety - Requirements for chain- and belt-slotting machines

Maschinen und Anlagen zur Gewinnung und Bearbeitung von Naturstein - Sicherheit - Anforderungen für Ketten- und Gurt-Steinschrämmmaschinen

Machines et installations d'extraction et d'usinage des pierres naturelles - Sécurité - Prescriptions relatives aux coupeuses à chaîne et à sangle

Ta slovenski standard je istoveten z: **EN 15164:2008**

ICS:

25.100.01	Rezalna orodja na splošno	Cutting tools in general
73.120	Oprema za predelavo rudnin	Equipment for processing of minerals

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Machines and plants for mining and tooling of natural stone - Safety - Requirements for chain- and belt-slotting machines

Machines et installations d'extraction et d'usinage des pierres naturelles - Sécurité - Prescriptions relatives aux coupeuses à chaîne et à sangle

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This European Standard was approved by CEN on 18 April 2008.

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Foreword

This document (EN 15164:2008) 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of an identical text or by endorsement, at the latest by November 2008, and conflicting national standards shall be withdrawn at the latest by November 2008.

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).

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

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Introduction

This document 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 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.

1 Scope

This standard applies to chain- or belt-slotting machines to be used in open or underground quarries. Chain- or belt-slotting machines are used for cutting marble, granite and other stones loose or at the face. They can be stationary or can be moved on rails during work.

This standard deals with slotting machines with electric main motor and equipped with one main sawing head. This European Standard covers only machines for plain cutting (with one axis) and does not cover the difficulties arising from the geomorphology of the stone to be cut.

This standard does not deal with noise as a significant hazard.

This standard deals with all significant hazards, hazardous situations and events relevant to chain- and belt-slotting machines, when they are used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer (see Clause 4). This European Standard deals with the hazards during transport, commissioning, use and maintenance.

This European Standard does not deal with:

— operation under extreme ambient conditions (outside the limits defined in EN 60204-1);

— operation in a potentially explosive atmosphere.

This document is not applicable to machines which are manufactured before the date of its publication as EN.

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 294:1992, *Safety of machinery — Safety distances to prevent danger zones being reached by the upper limbs*

EN 547-1:1996, *Safety of machinery — Human body measurements — Part 1: Principles for determining the dimensions required for openings for whole body access into machinery*

EN 547-2:1996, *Safety of machinery — Human body measurements — Part 2: Principles for determining the dimensions required for access openings*

EN 547-3:1996, *Safety of machinery — Human body measurements — Part 3: Anthropometric data*

EN 614-1:2006, *Safety of machinery — Ergonomic design principles — Part 1: Terminology and general principles*

EN 614-2:2000, *Safety of machinery — Ergonomic design principles — Part 2: Interactions between the design of machinery and work tasks*

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

EN 982:1996, *Safety of machinery — Safety requirements for fluid power systems and their components — Hydraulics*

EN 983:1996, *Safety of machinery — Safety requirements for fluid power systems and their components — Pneumatics*

EN 1037:1995, *Safety of machinery — Prevention of unexpected start-up*

EN 1088:1995, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection*

EN 1760-2:2001, *Safety of machinery — Pressure sensitive protective devices — Part 2: General principles for the design and testing of pressure sensitive edges and pressure sensitive bars*

EN 60204-1:2006, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2005, modified)*

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

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 61496-1:2004, *Safety of machinery — Electro-sensitive protective equipment — Part 1: General requirements and tests (IEC 61496-1:2004, modified)*

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

EN ISO 13850:2006, *Safety of machinery — Emergency stop — Principles for design (ISO 13850:2006)*

EN ISO 14122-1:2001, *Safety of machinery — Permanent means of access to machinery — Part 1: Choice of fixed means of access between two levels (ISO 14122-1:2001)*

EN ISO 14122-2:2001, *Safety of machinery — Permanent means of access to machinery — Part 2: Working platforms and walkways (ISO 14122-2:2001)*

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 14122-4:2004, *Safety of machinery — Permanent means of access to machinery — Part 4: Fixed ladders (ISO 14122-4:2004)*

3 Terms and definitions

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

3.1
chain- and belt-slotting machines
range of machines designed, made and fitted to cut solid stone masses, stone boulders and square blocks by means of abrasive tools which are stationary or moveable on rails.

Chain- and belt-slotting machines are characterised as follows:

— the cuts can be vertical and horizontal;

— the chain-slotting machine has a moveable arm for carrying a chain with cutting tools;

— the belt-slotting machine has a moveable arm for carrying a belt with abrasive tools (e.g. diamond grid);

— the arms of those machines can be of different dimensions.

The machines in the scope can be of one of the following types:

3.1.1
transportable chain- and belt-slotting machine for open cast quarries
machine which consists of a trolley carrying the arm holder and the drive and moving on rails. The translation movement of the trolley on the rails is the feeding movement for cutting. The complete machine is intended to be moved frequently from one cutting position to another

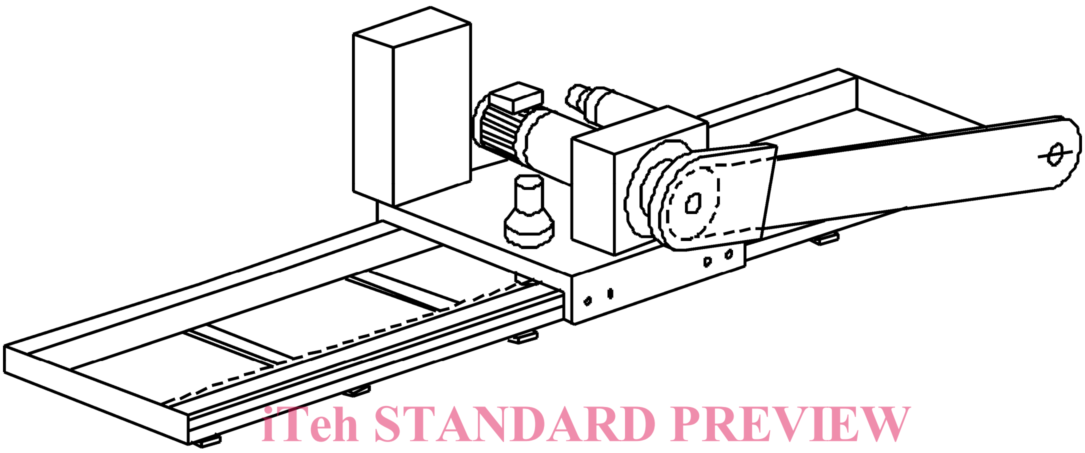

Figure 1 — Transportable chain- or belt-slotting machine for open-cast quarries

3.1.2
chain-slotting machine for underground quarries
machine which is intended to cut and extract blocks of stone of regular form in underground quarries (see Figure 2). Those machines can be stationary or self-propelled

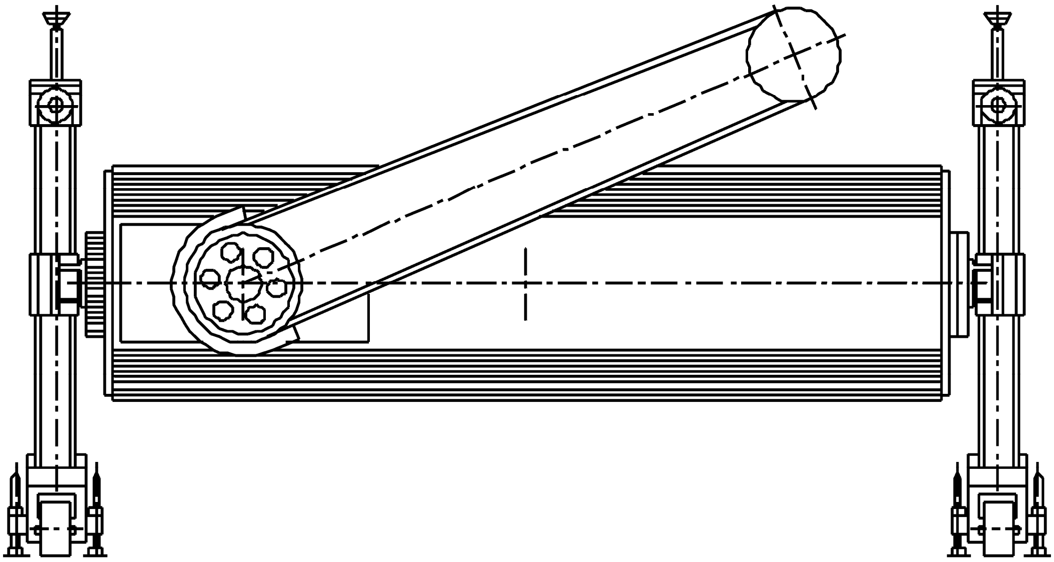

Figure 2 — Chain-slotting machine for underground quarries

3.1.3
stationary gantry chain- and belt-slotting machine
machine which is intended to cut stone blocks and smaller squared blocks using a chain or diamond belt (see Figure 3)

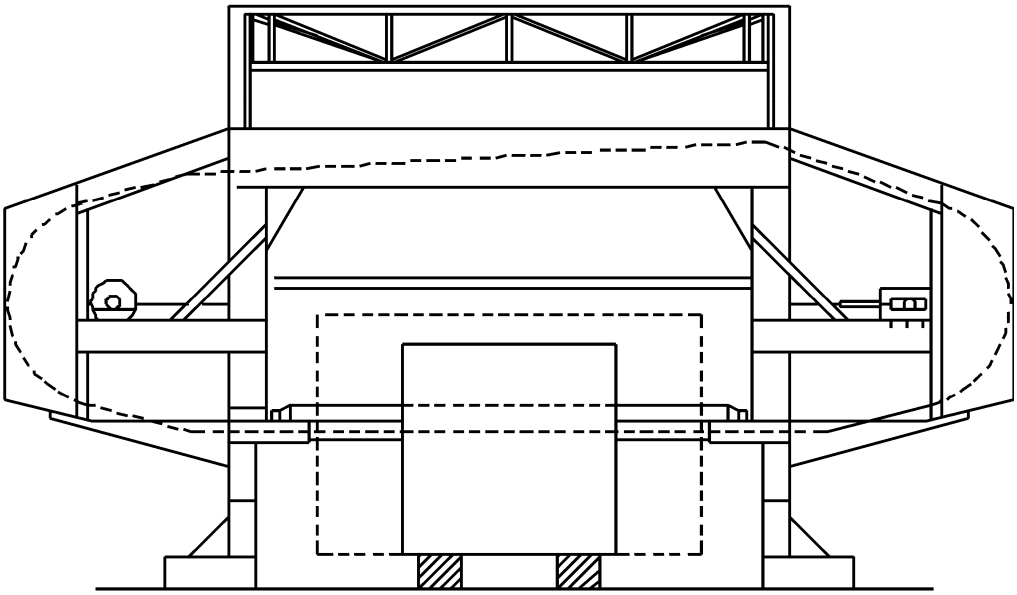

Figure 3 — Stationary chain- or belt-slotting machine

3.1.4
moveable gantry chain- or belt-slotting machine
machine which is intended to make vertical cuts for dividing and squaring hard or abrasive stone blocks using a chain or diamond belt (see Figure 4). The machine can be positioned relative to the blocks by a trolley or by a mobile gantry guided by rails on the ground

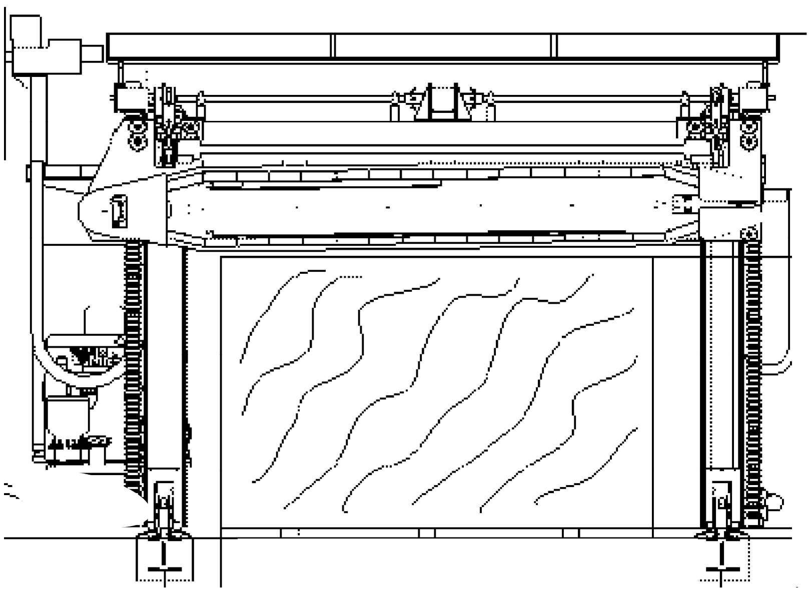

Figure 4 — Gantry chain- or belt-slotting machine