SLOVENSKI STANDARD
SIST EN 12348:2000+A1:2009

01-junij-2009

Stabilni vrtalni stroji - Varnost

Core drilling machines on stand - Safety

Kernbohrmaschinen auf Ständer - Sicherheit

Foreuses à béton (carotteuses) sur colonne - Sécurité

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Ta slovenski standard je istoveten z: **EN 12348:2000+A1:2009**

SIST EN 12348:2000+A1:2009
https://standards.iteh.ai/catalog/standards/sist/d83a2f05-aee3-44b8-911f-40028a0e7897/sist-en-12348-2000a1-2009

ICS:

25.080.40 Vrtalniki Drilling machines

SIST EN 12348:2000+A1:2009 **en,fr**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

SIST EN 12348:2000+A1:2009

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 12348:2000+A1:2009
https://standards.iteh.ai/catalog/standards/sist/d83a2f05-aee3-44b8-911f-40028a0e7897/sist-en-12348-2000a1-2009

SIST EN 12348:2000+A1:2009

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 12348:2000+A1

April 2009

ICS 25.080.40

Supersedes EN 12348:2000

English Version

Core drilling machines on stand - Safety

Foreuses à béton (carotteuses) sur colonne - Sécurité

Kernbohrmaschinen auf Ständer - Sicherheit

This European Standard was approved by CEN on 26 June 2000 and includes Amendment 1 approved by CEN on 1 March 2009.

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.

CEN members are the national standards bodies of 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.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN 12348:2000+A1:2009
https://standards.iteh.ai/catalog/standards/sist/d83a2f05-aee3-44b8-911f-40028a0e7897/sist-en-12348-2000a1-2009

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

Management Centre: Avenue Marnix 17, B-1000 Brussels

© 2009 CEN All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.

SIST EN 12348:2000+A1:2009

Contents

Page

Foreword 3

Introduction 4

1 Scope 4

2 Normative references 5

3 Terms and definitions 6

4 List of significant hazards 8

5 Safety requirements and/or measures 10
5.1 Mechanical hazards 10
5.2 Electrical hazards 13
5.3 Ergonomics 13
5.4 Thermal hazards 13
5.5 Exhaust fumes (internal combustion engine machines) and exhaust compressed air (pneumatic machines) 14
5.6 Hydraulic and pneumatic machines 14
5.7 Fluid containers 14
5.8 Water supply and dust emission 14
5.9 Rotational speed 14
5.10 Noise 15
5.11 [A1] Vibration 15
5.12 Maintenance 15

6 Verification of safety requirements and/or measures 15

7 Information for use 15
7.1 Marking 16
7.2 Accompanying documents 16

Annex A (normative) Noise test code - Grade 2 of accuracy 20

Annex B (normative) Pictograms 23

Annex C (normative) Verification of surface temperature 24

Annex D (normative) [A1] Vibration test code 25

Annex ZA (informative) [A1] Relationship between this European Standard and the Essential Requirements of EU Directive 98/37/EC [A1] 29

Annex ZB (informative) [A1] Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC [A1] 30

Bibliography 31

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN 12348:2000+A1:2009
https://standards.iteh.ai/catalog/standards/sist/d83a2f05-ace3-44b8-911f-40028a0e7897/sist-en-12348-2000a1-2009

SIST EN 12348:2000+A1:2009

Foreword

This document (EN 12348:2000+A1:2009) 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 October 2009, and conflicting national standards shall be withdrawn at the latest by December 2009.

This document includes Amendment 1, approved by CEN on 2009-03-01.

This document supersedes EN 12348:2000.

The start and finish of text introduced or altered by amendment is indicated in the text by tags ⟩A1⟨ ⟩A1⟨.

This European Standard 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 Directives, see informative Annexes ZA and ZB, which are integral parts of this document. ⟩A1⟨

iTeh STANDARD PREVIEW
(standards.iteh.ai)

The annex A is normative and contains "Noise test code - Grade 2 of accuracy", annex B is normative and contains "Pictograms", annex C is normative and contains "Verification of surface temperature", and the annex ZA is informative and contains „Relationship of this European Standard with EU Directives“.

This European Standard also contains a Bibliography.

SIST EN 12348:2000+A1:2009
https://standards.iteh.ai/catalog/standards/sist/d83a2f05-aee3-44b8-911f-40028a0e7897/sist-en-12348-2000a1-2009

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.

SIST EN 12348:2000+A1:2009

Introduction

This European standard is a Type C-standard as stated in [A1] EN ISO 12100-1 [A1].

The machinery concerned and the extent to which hazards are covered are indicated in the scope of this standard.

This European standard has been prepared by taking into account the safety requirements of EN 791:1995 which are applicable to core drilling machines on a stand.

1 Scope

This European Standard applies to core drilling machines on transportable stands equipped with a diamond core drill bit, usually with a water supply connection device, and intended to drill holes into stone, concrete and similar mineral materials in a stationary position where the power for the tool rotation is supplied by an electrical, hydraulic, pneumatic or internal combustion prime motor.

The feed movement of the drill head and core drill bit may be effected by manual, mechanical or hydraulic means.

iTeh STANDARD PREVIEW

This European Standard deals with all significant hazards pertinent to core drilling machines on a stand when used as intended and under the conditions foreseen by the manufacturer (see clause 4). This standard specifies the appropriate technical measures to eliminate or reduce risks arising from the significant hazards.

(standards.iteh.ai)

This standard does not apply to:

SIST EN 12348:2000+A1:2009
https://standards.iteh.ai/catalog/standards/sist/d83a2f05-aee3-44b8-911f-40028a0e7897/sist-en-12348-2000a1-2009

— percussive or rotary-percussive rock drills either mounted or unmounted;

— hand held power drills;

— hydraulic or pneumatic power supply sources;

— mobile undercarriages to which machines can be fitted.

This European Standard does not apply to machinery covered by EN 791:1995.

This European Standard covers electrical hazards by making reference to relevant European Standards (see 5.2).

Those hazards that are relevant for all mechanical, electrical, hydraulic and other equipment of machinery and that are dealt with in standards for common use are not covered by this European Standard. Reference to pertinent standards of this kind is made where such standards are applicable and so far as is necessary.

In this European Standard, core drilling machines on a stand are called "machines" and diamond core drill bits are called “tools”.

NOTE The term "diamond" is used as a generic word which covers all varieties of abrasive products such as diamond, borum nitride.

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

SIST EN 12348:2000+A1:2009

2 Normative references

[A1] 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]

[A1] *deleted text* [A1]

[A1] EN 206-1:2000, *Concrete — Part 1: Specification, performance, production and conformity* [A1]

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

[A1] *deleted text* [A1]

EN 791:1995, *Drill rigs - Safety*

[A1] EN 953 [A1], *Safety of machinery – Guards - General requirements for the design and construction of fixed and movable guards*

[A1] *deleted text* [A1]

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*

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[A1] EN 12096, *Mechanical vibration — Declaration and verification of vibration emission values* [A1]

SIST EN 12348:2000+A1:2009
https://standards.iteh.ai/catalog/standards/sist/d83a2f05-aee3-44b8-911f-40028a0e7897/sist-en-12348-2000a1-2009

[A1] *deleted text* [A1]

[A1] prEN ISO 3744:2006, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering method in an essentially free field over a reflecting plane (ISO/DIS 3744:2006)* [A1]

[A1] EN ISO 5349-2:2001, *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, *Human response to vibration — Measuring instrumentation (ISO 8041:2005)* [A1]

EN ISO 11201:1995, [A1] *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)* [A1]

[A1] 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 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 13850:2008, *Safety of machinery — Emergency stop — Principles for design (ISO 13850:2006)*

SIST EN 12348:2000+A1:2009

EN ISO 20643:2008, *Mechanical vibration — Hand-held and hand-guided machinery — Principles for evaluation of vibration emission (ISO 20643:2005)* ⟨A1

A1⟩ EN 60204-1:2006, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2005, modified)* ⟨A1

A1⟩ EN 60335-1:2002, *Household and similar electrical appliances — Safety — Part 1: General requirements (IEC 60335-1:2001, modified)* ⟨A1

A1⟩ EN 60335-2-41:2003, *Household and similar electrical appliances — Safety — Part 2-41: Particular requirements for pumps (IEC 60335-2-41:2002)* ⟨A1

EN 61029-1:2000, *Safety of transportable motor operated electric tools – Part 1: General requirements (IEC 61029-1:1990, modified)*

A1⟩ prEN 61029-2-6:2007, *Safety of transportable motor-operated electric tools — Part 2-6: Particular requirements for diamond drills with water supply (IEC 61029-2-6:1993, modified)* ⟨A1

A1⟩ ISO 5348, *Mechanical vibration and shock — Mechanical mounting of accelerometers*

ISO 7000:2004, *Graphical symbols for use on equipment — Index and synopsis*

ISO 16063-1, *Methods for the calibration of vibration and shock transducers — Part 1: Basic concepts* ⟨A1

3 Terms and definitions

iTeh STANDARD PREVIEW
(standards.iteh.ai)

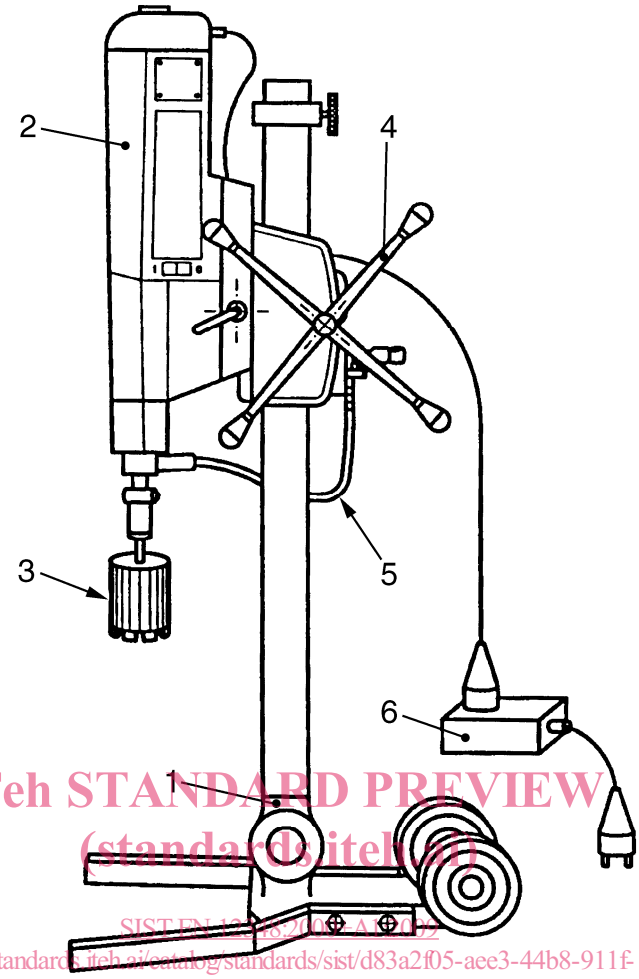
For the purposes of this European Standard the terms and definitions stated in A1⟩ EN ISO 12100-1:2003 ⟨A1 apply.

SIST EN 12348:2000+A1:2009
40028a0e7897/sist-en-12348-2000a1-2009

Additional terms and definitions specifically needed for this European Standard are added below.

3.1
core drilling machine
machine used to drill holes with a diamond core bit into walls, floors and ceilings made of concrete, natural stone and other mineral building materials. The machine is mounted on a transportable stand having a drive spindle which is equipped with a core drill bit. It is (generally) equipped with a water supply. It may have manual or powered feed. Figure 1 shows a typical example of a core drilling machine

SIST EN 12348:2000+A1:2009



iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN 12348:2000+A1:2009
https://standards.iteh.ai/catalog/standards/sist/d83a2f05-aee3-44b8-911f-40028a0e7897/sist-en-12348-2000a1-2009

Key

1 Frame (drill stand) including a column which may be tiltable and a base
2 Drilling unit
3 Diamond core drill bit including any connecting accessories (not being part of the machine)
4 Control devices for the operating functions and feed mechanism of the machine
5 Water supply system
6 Residual current device (RCD)

Figure 1 — Main parts of a core drilling machine

3.2
drilling unit
the drilling unit consists of all the components required for drilling. The following list is a typical example:

— drill head with prime mover. This prime mover may be: internal combustion, electric, pneumatic, or hydraulic;

— drive spindle

— water supply system;

— on/off control for feed;

— on/off control for rotation;

SIST EN 12348:2000+A1:2009

— on/off control for water supply

3.3
drill stand
This contains all the devices for positioning and fixing:

— base with means for fixing it in position by e.g. anchors or clamps. It can be equipped with additional wheels for transport;

— column, (may be tiltable), equipped with means for guiding the drilling unit

3.4
[A1⟩ rated no-load spindle speed ⟨A1]
speed of the drive spindle, in revolutions per minute (min-1), at rated conditions specified by the machine manufacturer without tool and under [A1⟩ no-load ⟨A1]

3.5
nominal mass
the mass of the machine equipped with all its dismountable parts, but without the tool mounted and the attached tank(s) being empty

3.6
maximum operating mass
the mass of the machine equipped with all its dismountable parts, ready for use, with the tool mounted and the attached tank(s) being full

iTeh STANDARD PREVIEW
(standards.iteh.ai)

4 List of significant hazards

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

SIST EN 12348:2000+A1:2009
40028a0e7897/sist-en-12348-2000a1-2009

SIST EN 12348:2000+A1:2009

	Table 1 — List of significant hazards	
	Hazards	**Relevant subclauses**
4.3	Cutting and severing hazard	5.1.1, 5.1.2, 5.1.3, 5.1.5
4.4	Entanglement hazard	5.1.2, 5.1.3, 5.1.5
4.5	Drawing-in or trapping hazard	5.1.2, 5.1.3, 5.1.5
4.6	Impact hazard	5.1.2, 5.1.4
4.7	Fluid injection hazard	5.1.7, 5.7
4.8	Hazards caused by ejection of parts (material/work pieces)	5.1.4, 5.1.5, 5.9, 7.2
4.9	Hazards caused by loss of stability	5.1.4, 7.2
	(machinery and machine parts)	
4.10	Slip, trip and fall hazard in relationship with	5.7, 7.2
	Machinery	
4.11	Hazards caused by either direct or indirect electrical contact	5.2, 7.2
4.12	Hazards resulting in burns and/or scalds, by possible contact of persons with flames, explosions or by radiation from heat sources	5.4, 7.2
4.13	Health damaging effects of a hot or cold work environment or of noise	5.10, 7.2
4.14	Hazards resulting from contact with or inhalation of harmful fluids, gases, mists, fumes and dusts	5.5, 5.8, 7.2
4.15	Hazards caused by fire and/or explosion	7.2
4.16	Unhealthy postures or excessive efforts	5.3, 7.2
4.17	Hazards caused by inadequate local lighting	7.2
4.18	Hazards caused by human errors	7.1, 7.2
4.19	Hazard combinations	5.1.1, 7.1, 7.2
4.20	Hazard caused by failure of energy supply (of energy and/or control circuits)	5.1.5, 5.1.6, 5.2, 7.2
4.21	Hazards caused by failure/disorder of control system	5.1.5, 5.2, 7.2
	Hazards	Relevant subclauses
4.22	Hazards caused by errors of fitting	7.1, 7.2

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN 12348:2000+A1:2009
https://standards.iteh.ai/catalog/standards/sist/0e2f05-aee3-44b8-911f-40028a0e7897/sist-en-12348-2000a1-2009

SIST EN 12348:2000+A1:2009

	Table 1 — List of significant hazards	
	Hazards	**Relevant subclauses**
4.23	Hazards caused by temporarily missing and/or incorrectly positioned safety related measures/means, for example	
4.23.1	Guards of all kinds	5.1.2.1, 7.2
4.23.2	Safety related protection devices of all kinds	7.2
4.23.3	Starting and stopping devices	7.2
4.23.4	Safety signs and tags	7.1, 7.2
4.23.5	Information and warning devices of all kinds	7.1, 7.2
4.23.6	Essential equipment and accessories for safe adjustment and/or maintenance	7.2
[A1] 4.24	Hazards generated by vibration	5.11 [A1]

5 Safety requirements and/or measures

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Machinery shall comply with the safety requirements and/or measures of this clause and in addition with [A1] EN ISO 12100-1:2003 and EN ISO 12100-2:2003 [A1] for hazards which are relevant but not significant and which are not dealt with in this standard.

SIST EN 12348:2000+A1:2009
https://standards.iteh.ai/catalog/standards/sist/d83a2f05-ace3-44b8-911f-40028a0e7897/sist-en-12348-2000a1-2009

For the application of EN 294:1992, [A1] EN 953 [A1], EN 982:1996, EN 983:1996 and [A1] EN 60204-1:2006 [A1] the manufacturer shall carry out an adequate risk assessment for the requirements thereof where choice is necessary.

NOTE This specific risk assessment should be part of the general risk assessment relating to the hazards not covered by this standard.

Covering each individual significant hazard is sufficient for covering combinations of hazards.

5.1 Mechanical hazards

5.1.1 General

As components and parts have to be manually handled, all the accessible parts shall be free of sharp parts and burrs which could generate hazards when setting, using, handling, and maintaining the machine. Burrs resulting from, for example, manufacturing, casting or welding shall be eliminated and sharp edges shall be smoothed.

5.1.2 Protection against moving parts

5.1.2.1 Transmission parts

Rotating transmission parts (for example shafts, couplings and belt drives) with the exception of the drive spindle end shall be provided with fixed guards to prevent contact. [A1] These guards shall comply with EN 953 and 5.3.2.2 of EN ISO 12100-2:2003. [A1] Fixed guards shall be held in position either by welding or by mounting them in such a way that they can be opened or removed only with the aid of tools or keys.

Guards shall comply with the provisions of EN 294:1992 on safety distances.