



SLOVENSKI STANDARD SIST EN 15027:2008

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Transportable wall saw and wire saw equipment for job site - Safety

Transportable Wand- und Seilsägen für den Baustelleneinsatz - Sicherheit

Scies murales et scies a fil transportables de chantier - Sécurité

Ta slovenski standard je istoveten z: EN 15027:2007

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ICS:

25.080.60	Strojne žage	Sawing machines
91.220	Gradbena oprema	Construction equipment

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EUROPEAN STANDARD

EN 15027

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2007

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English Version

Transportable wall saw and wire saw equipment for job site - Safety

Scies murales et scies à fil transportables de chantier -
Sécurité

Transportable Wand- und Seilsägen für den
Baustelleneinsatz - Sicherheit

This European Standard was approved by CEN on 7 October 2007.

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

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Foreword

This document (EN 15027:2007) 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of an identical text or by endorsement, at the latest by May 2008, and conflicting national standards shall be withdrawn at the latest by May 2008.

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

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 Annex ZA, which is an integral part of this document.

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 the United Kingdom.

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Introduction

This document is a type C standard as stated in EN ISO 12100-1:2003.

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.

It is intended to revise this standard to align with changes in legislation and the availability of other European Standards in preparation.

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EN 15027:2007 (E)**1 Scope**

The global description “wall saw and wire saw equipment” contains two differing types of machines for use in the construction industry, and both used to make cuts on walls, ceilings and floors composed of mineral construction materials and/or composite materials. The many different cutting tasks and choice of operating method determine the type of machine to be used for each application.

The machines may therefore be split into the following two principal classifications:

- Wall saws – exclusively rail guided – transportable.
- Wire saws – transportable.

The machines are intended for the use of diamond tools. The types of cutting tools used in conjunction with the machines as described above fall within the design and use parameters supplied by the manufacturer.

Cutting debris generated by the cutting action is removed from the cutting joint by a medium such as water directed to the cutting tool.

Machines covered by this standard may be powered by: electric motor, IC engine, electro-hydraulic drive and IC engine-hydraulic drive.

This European Standard deals with all significant hazards, hazardous situations and events relevant to wall saws and wire saws machinery, when they are used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer (see Clause 4).

This standard specifies the appropriate technical measures to eliminate or reduce risks arising from the significant hazards generated by the cutting process work cycle.

For special applications, for example, when working in potentially explosive atmospheres, additional safety requirements is necessary which are not covered by this standard.

This European Standard does not apply for wire saws intended for quarrying and stationary machining of natural stone as covered by prEN 15163.

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

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 distance to prevent danger zones being reached by the upper limbs*

EN 573-3:2007, *Aluminium and aluminium alloys — Chemical composition and form of wrought products — Part 3: Chemical composition*

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 10111:1998, *Continuously hot-rolled low carbon steel sheet and strip for cold forming — Technical delivery conditions*

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

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

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)*

EN ISO 12100-2:2003, *Safety of machinery - Basic concepts, general principles for design - Part 2: Technical principles (ISO 12100-2:2003)*

EN ISO 13732-1:2006, *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 13849-1:2006, *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)*

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

wall saw

transportable machine utilising a diamond cutting-off wheel, for sawing primarily on walls, floors and ceilings. A wall saw is powered by an integral or an external power source as described in Clause 1. Feed and depth of cut can be adjusted/operated manually or by remote control

NOTE The components of a wall saw are shown in Figure 1.

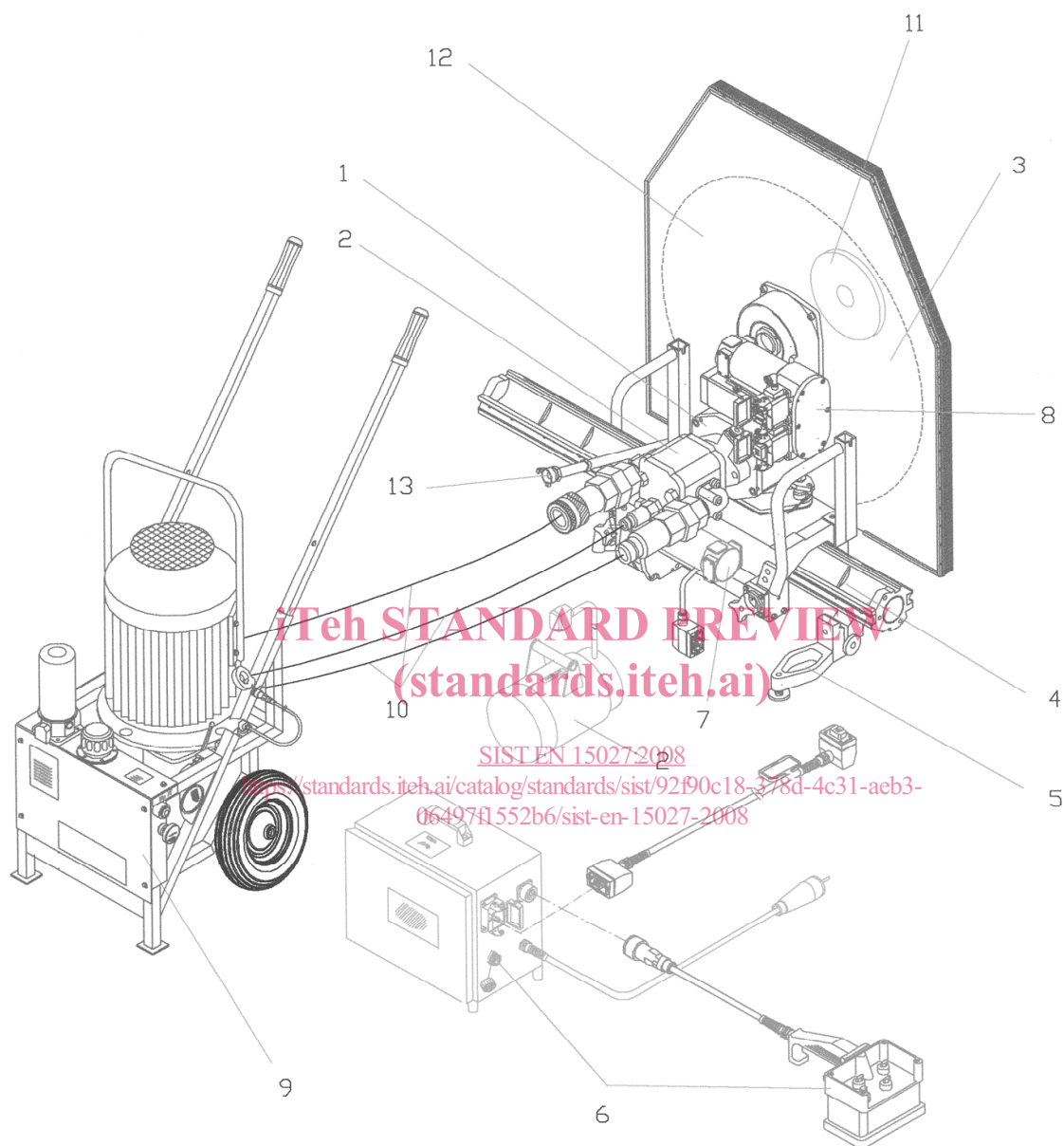
3.2

wire saw

transportable machine utilising a diamond wire, for sawing primarily on walls, floors and ceilings. A wire saw is powered by an integral or an external power source as described in Clause 1. The machine is operated by remote control

NOTE The components of a wire saw are shown in Figure 2.

EN 15027:2007 (E)

3.3
components of wall saws

Key

1	cutting head	8	depth control
2	drive motor hydraulic/drive motor electric	9	power source
3	tool protection/blade guard	10	power transmission
4	track guiding system	11	tool mounting device
5	mounting devices	12	diamond tool
6	remote control system	13	coolant supply
7	feed system		

Figure 1 — Components of a wall saw

3.3.1**cutting head**

cutting head for wall saws powered by an internal or external power source incorporates the mounting device for the diamond cutting tool (e. g. flange, arbour), the cutting tool driving device, feeding and depth control device and the protective/safety devices to afford protection to the operator or site personnel. It incorporates a specific device to be mounted and guided on the track

3.3.2**track guiding system**

track guiding system for wall saws is mounted in relation to the surface to be cut by means of fixing elements. It guides the cutting head during the working process and is designed to withstand the imparted stresses. It incorporates end stops to retain the cutting head at the track ends

3.3.3**cutting tool**

rotating diamond tool(s) to perform the cutting operation

3.3.4**tool mounting device**

device (e. g. flange) for wall saws to securely hold the cutting tool on the cutting head during the cutting operation

3.3.5**clamping flange system**

clamping flange system for wall saws consists of two plates with concentric tool seat. They are spanned by a locking device

3.3.6**flush cut flange system**

flush cut flange system for wall saws consists of a single flange with concentric tool seat and a fixing device in order to mount the tool

3.3.7**tool protection guard**

guard which encloses non-working parts of the cutting tool

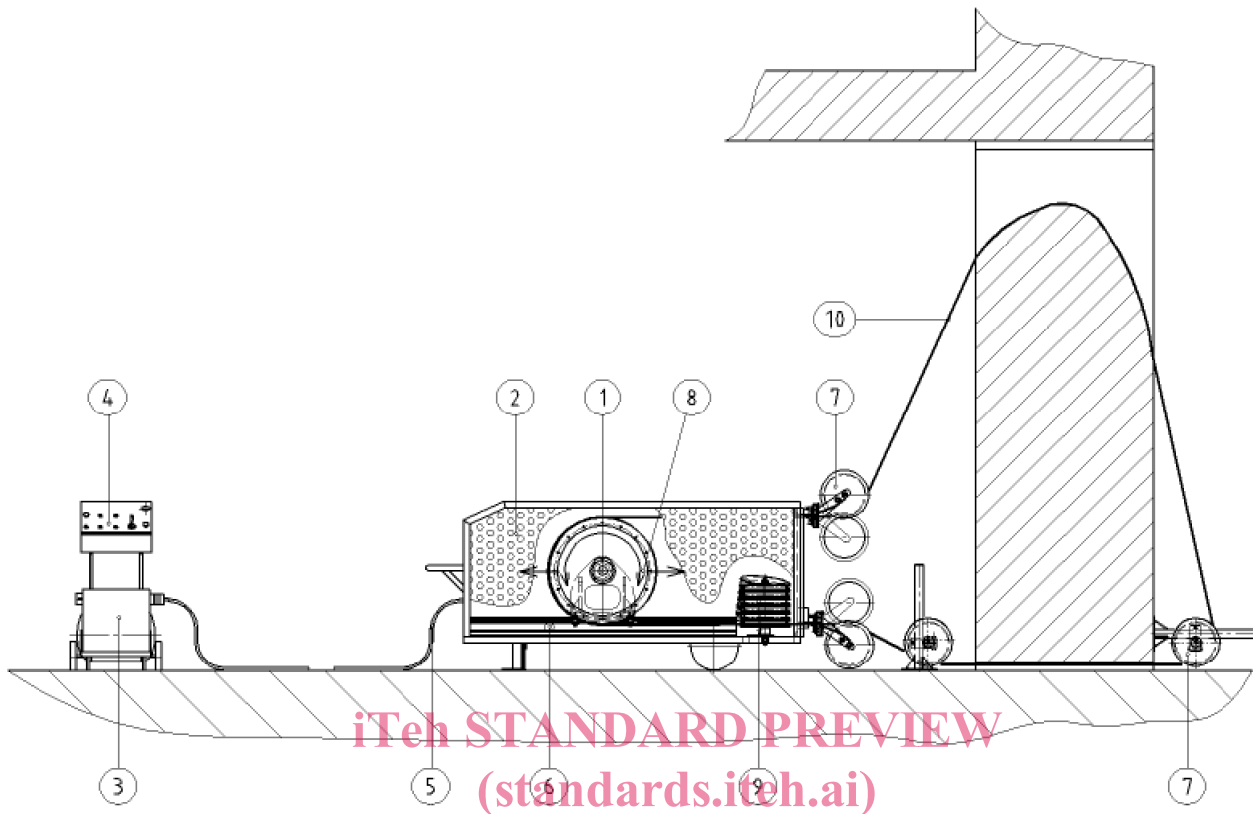
3.3.8**power supply unit**

unit supplying electric or hydraulic power required in order to perform the specific cutting operation

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3.4
components of a wire saw

Key

1	wire drive unit	6	feed system
2	tool protection/guards	7	wire guiding device
3	power source	8	wire drive wheel
4	remote control	9	wire storage
5	power and coolant transmission	10	diamond tool (wire)

Figure 2 — Components of a wire saw

3.4.1

wire drive unit

drive unit for wire saws powered by an internal or external power source incorporates the driving wheel(s) for the diamond wire, feeding and tensioning device and the protective/safety devices to afford protection to the operator or site personnel. It may incorporate a wire storage and guiding device

3.4.2

wire guiding devices

device(s) which can be mounted in the vicinity of the surface to be cut in order to guide the wire during the cutting operation

3.4.3

cutting tool

flexible circulating tool consisting of a core (wire rope) fitted with diamond impregnated beds (cutting rings)

3.4.4

power supply unit

unit supplying electric or hydraulic power required in order to perform the specific cutting operation