



SLOVENSKI STANDARD
oSIST prEN 15027:2024
01-februar-2024

Oprema za prenosne stenske in žične žage za delovišča - Varnost

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

Transportable Wand- und Seilsägen für den Baustelleneinsatz - Sicherheit

Scies murales et scies à fil transportables de chantier - Sécurité

Ta slovenski standard je istoveten z: prEN 15027

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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 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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European Foreword

This document (prEN 15027:2022) 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 document is currently submitted to the Formal Vote.

This document will supersede EN 15027:2007+A1:2009.

In comparison with the previous edition, the following technical modifications have been made:

- a) normative references revised and updated;
- b) delimitation to EN IEC 62841-3-7:2021 implemented;
- c) terms and definitions revised and updated;
- d) safety requirements revised and updated;
- e) requirements for warnings;
- f) requirements for Information for use;
- g) requirements for operator's instructions;
- h) requirements for noise test code;
- i) figures and safety signs updated;
- j) list of significant hazards revised and updated.

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). <https://standards.iteh.ai> prEN-15027-2024

For relationship with EU Directive(s), see informative Annex ZA which is an integral part of this document.

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.

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Introduction

This document is a type-C standard as stated in EN ISO 12100:2010.

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 the 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.

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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 are therefore split into the following two principal classifications:

- wall saws - exclusively rail guided and remote-controlled - transportable;
- wire saws - remote-controlled - transportable.

The machines are intended for the use of diamond or similar superabrasive 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.

Wall saws are designed for use with rotating cutting-off wheels for wet and/or dry cutting.

Wire saws are designed for use with continuously running cutting-off wires for wet and/or dry cutting.

Machines covered by this standard can be powered by: internal combustion engine, electro-hydraulic drive or internal combustion engine-hydraulic drive. Wire saws can also be powered by electric motor.

Wall saws powered by electric motors are covered by EN IEC 62841-3-7:2021.

This document deals with all significant hazards, hazardous situations and hazardous 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 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.

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

This document does not apply to wire saws intended for quarrying and stationary machining of natural stone as covered by EN 15163-2:2022.

This document does not apply to transportable wall saw and wire saw equipment for job site manufactured before the date of its publication.

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 573-3:2019, *Aluminium and aluminium alloys — Chemical composition and form of wrought products — Part 3: Chemical composition and form of products*

EN 10111:2008, *Continuously hot-rolled low carbon steel sheet and strip for cold forming — Technical delivery conditions*

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

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

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EN IEC 62841-3-7:2021, *Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery — Safety — Part 3-7: Particular requirements for transportable wall saws (IEC 62841-3-7:2020)*

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 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 6603-1:2000, *Plastics — Determination of puncture impact behaviour of rigid plastics — Part 1: Non-instrumented impact testing (ISO 6603-1:2000)*

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 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)*

prEN ISO 13849-1:2021, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO/DIS 13849-1:2021)*

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

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 18752:2022, *Rubber hoses and hose assemblies — Wire- or textile-reinforced single-pressure types for hydraulic applications — Specification (ISO 18752:2022)*

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

wall saw

transportable machine utilising a cutting-off wheel, for sawing primarily on walls, floors and ceilings, powered by an integral or an external power source and operated by remote control

Note 1 to entry: The components of a wall saw are shown in Figure 1.

3.2

wire saw

transportable machine utilising a cutting-off wire, for sawing primarily on walls, floors and ceilings, powered by an integral or an external power source and operated by remote control

Note 1 to entry: The components of a wire saw are shown in Figure 2.

3.3

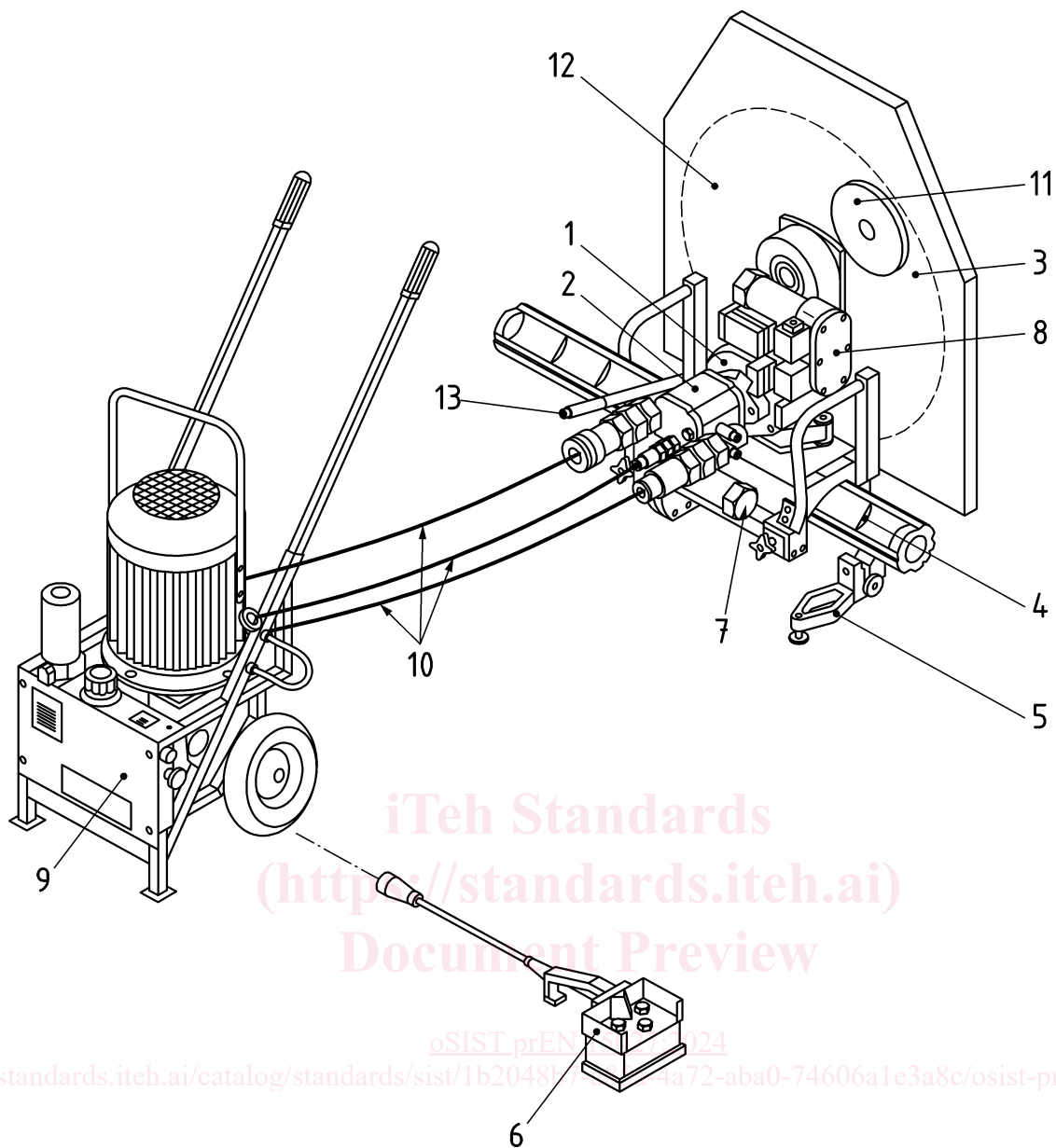
components of wall saws

see Figure 1

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**Key**

- | | | | |
|---|-------------------------|----|-----------------------|
| 1 | Motor unit | 8 | Depth control device |
| 2 | Drive motor hydraulic | 9 | Power source |
| 3 | Cutting-off wheel guard | 10 | Power transmission |
| 4 | Track guiding system | 11 | Wheel mounting device |
| 5 | Mounting devices | 12 | Cutting-off wheel |
| 6 | Remote control system | 13 | Coolant supply |
| 7 | Control system | | |

Figure 1 — Components of a wall saw**3.3.1****saw unit**

part of the machine incorporating the mounting device for the cutting-off wheel (e. g. flange, arbour), the cutting-off wheel driving device, feeding and depth control device, the protective/safety devices to afford protection to the operator or site personnel and a device for mounting the saw unit on the track

3.3.2

track guiding system

device mounted in relation to the surface to be cut by means of fixing elements, guiding the saw unit during the working process, designed to withstand the imparted stresses and incorporating end stops to retain the saw unit at the track ends

3.3.3

cutting-off wheel

rotating abrasive tool(s) which perform(s) the cutting operation

Note 1 to entry: Abrasive wheels may be mounted either alone or as several units together according to the design and usage of parameters of the machine.

Note 2 to entry: The tool is a rotating (segmented or continuous rim) diamond or similar superabrasive cutting-off wheel.

3.3.4

tool mounting device

device (e.g. flange) to securely hold the cutting-off wheel(s) on the saw unit during the cutting operation

3.3.5

clamping flange system

system consisting of two plates with concentric tool seat, spanned by a locking device

3.3.6

flush cut flange system

system consisting of a single flange with concentric tool seat and a fixing device in order to mount the tool

3.3.7

cutting-off wheel guard

device enclosing non-working parts of the cutting-off wheel

3.3.8

power supply unit

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

3.4

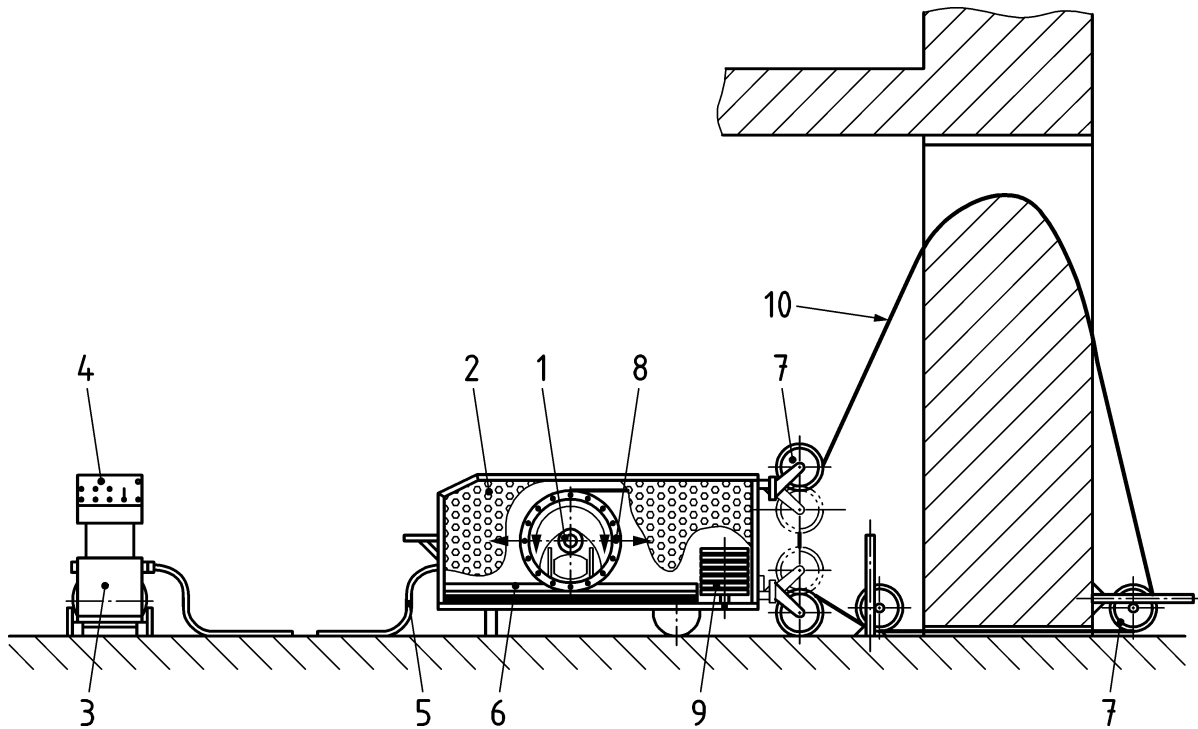
components of a wire saw

see Figure 2

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**Key**

- | | | | |
|---|--------------------------------|----|-------------------------------|
| 1 | Wire drive unit | 6 | Feeding and tensioning system |
| 2 | Cutting-off wire guard | 7 | Wire guiding device |
| 3 | Power source | 8 | Wire drive wheel |
| 4 | Remote control | 9 | Wire storage |
| 5 | Power and coolant transmission | 10 | Cutting-off wire |

Figure 2 — Components of a wire saw

3.4.1**wire drive unit**

unit incorporating the wire driving wheel(s), feeding and tensioning device and the protective/safety devices to afford protection to the operator or site personnel

Note 1 to entry: The wire drive unit may incorporate a wire storage and guiding device.

3.4.2**wire guiding device**

device 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-off wire**

flexible circulating abrasive tool which performs the cutting operation

3.4.4**power supply unit**

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

3.5**rated speed**

maximum speed of the rotating spindle in revolutions per minute (wall saw) or speed of the cutting-off wire in m/s (wire saw) at the rated conditions specified by the manufacturer under no load