

# SLOVENSKI STANDARD

## SIST EN 1870-1:2007+A1:2009

01-april-2009

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Safety of woodworking machines - Circular sawing machines - Part 1: Circular saw benches (with and without sliding table), dimension saws and building site saws

Sicherheit von Holzbearbeitungsmaschinen - Kreissägemaschinen - Teil 1: Tischkreissägemaschinen (mit und ohne Schiebetisch), Formatkreissägemaschinen und Baustellenkreissägemaschinen

Sécurité des machines pour le travail du bois - Machines à scier circulaires - Partie 1: Scies circulaires à table de menuisier (avec ou sans table mobile), scies au format et scies de chantier

Ta slovenski standard je istoveten z: **EN 1870-1:2007+A1:2009**

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25.080.60	Strojne žage	Sawing machines
79.120.10	Lesnoobdelovalni stroji	Woodworking machines

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 1870-1:2007+A1**

January 2009

ICS 79.120.10

Supersedes EN 1870-1:2007

English Version

**Safety of woodworking machines - Circular sawing machines -  
Part 1: Circular saw benches (with and without sliding table),  
dimension saws and building site saws**

Sécurité des machines pour le travail du bois - Machines à  
scier circulaires - Partie 1: Scies circulaires à table de  
menuisier (avec ou sans table mobile), scies au format et  
scies de chantier

Sicherheit von Holzbearbeitungsmaschinen -  
Kreissägemaschinen - Teil 1: Tischkreissägemaschinen  
(mit und ohne Schiebetisch), Formatkreissägemaschinen  
und Baustellenkreissägemaschinen

This European Standard was approved by CEN on 24 February 2007 and includes Amendment 1 approved by CEN on 13 December 2008.

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.





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

**Management Centre: rue de Stassart, 36 B-1050 Brussels**

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## EN 1870-1:2007+A1:2009 (E)

## Foreword

This document (EN 1870-1:2007+A1:2009) has been prepared by Technical Committee CEN/TC 142 "Woodworking machines - Safety", the secretariat of which is held by UNI.

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 July 2009, and conflicting national standards shall be withdrawn at the latest by December 2009.

This document includes Amendment 1, approved by CEN on 2008-12-13.

This document supersedes A1 EN 1870-1:2007 A1.

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

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 the Machinery Directive and Outdoor Noise Directive.

A1 For relationship with EU Directive(s), see informative Annexes ZA and ZB, which are integral parts of this document. A1

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EN 1870 *Safety of woodworking machines* — *Circular sawing machines* consists of the following parts:

*Part 1: Circular saw benches (with and without sliding table), dimension saws and building site saws*

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*Part 3: Down cutting cross-cut saws and dual purpose down cutting cross-cut saws/circular saw benches*

*Part 4: Multiblade rip sawing machines with manual loading and/or unloading*

*Part 5: Circular sawbenches/up-cutting cross-cut sawing machines*

*Part 6: Circular sawing machines for firewood and dual purpose circular sawing machines for firewood/circular saw benches, with manual loading and/or unloading*

*Part 7: Single blade log sawing machines with integrated feed table and manual loading and/or unloading*

*Part 8: Single blade edging circular rip sawing machines with power driven saw unit and manual loading and/or unloading*

*Part 9: Double blade circular sawing machines for cross-cutting with integrated feed and with manual loading and/or unloading*

*Part 10: Single blade automatic and semi-automatic up-cutting cross-cut sawing machines*

*Part 11: Semi-automatic and automatic horizontal cross-cut sawing machines with one saw unit (radial arm saws)*

*Part 12: Pendulum cross-cut sawing machines*

*Part 13: Horizontal beam panel sawing machines*

*Part 14: Vertical panel sawing machines*

*Part 15: Multiblade cross-cut sawing machines with integrated feed of the workpiece and manual loading and/or unloading*

*Part 16: Double mitre sawing machines for V-cutting*

*Part 17: Manual horizontal cutting cross-cut sawing machines with one saw unit (manual radial arm saws)*

Organisations contributing to the preparation of this European Standard include European Committee of Woodworking Machinery Manufacturers Association "EUMABOIS".

The European Standards produced by CEN/TC 142 are particular to woodworking machines and complement the relevant A and B Standards on the subject of general safety (see introduction of EN ISO 12100-1:2003 for a description of A, B and C standards).

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.

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**EN 1870-1:2007+A1:2009 (E)****Introduction**

This document has been prepared to be a harmonised standard to provide one means of conforming to the essential safety requirements of the Machinery Directive and associated EFTA regulations. This document is a type "C" standard as defined 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 other standards, for machines that have been designed and built according to the provisions of this type C standard.

The requirements of this document are directed to manufacturers and their authorised representatives of circular saw benches (with and without sliding table), dimension saws and building site saws. They are also useful for designers.

This document also includes provisions and examples of information to be provided by the manufacturer to the user.

Common requirements for tooling are given in EN 847-1:2005.

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## 1 Scope

This document deals with the significant hazards, hazardous situations and events as listed in Clause 4 which are relevant to stationary and displaceable circular saw benches (with or without sliding table and/or demountable power feed unit), dimensions saws and building site saws, hereinafter referred to as “machines”, designed to cut solid wood, chipboard, fibreboard, plywood and also these materials, if they are covered with plastic edging and/or plastic/light alloy laminates, when they are used as intended and under the conditions foreseen by the manufacturer.

NOTE 1 For the definition of stationary and displaceable machine see 3.13 and 3.14.

NOTE 2 Circular saw benches, and dimension saws are used for ripping, cross cutting, dimensioning and grooving. Building site saws are used for ripping, cross cutting and dimensioning.

The requirements of this document apply also to machines designed for grooving with a width not exceeding 20 mm in one pass by using a milling tool.

This document does not apply to:

- a) machines set up on a bench or a table similar to a bench, which are intended to carry out work in a stationary position, capable of being lifted by one person by hand. The bench can also be an integrated part of the machine if it consists of hinged legs which can be extended down;
- b) hand held woodworking machines including any adaptation permitting their use in a different mode, i.e. bench mounting.

NOTE 3 Transportable motor-operated electric tools are covered by the requirements of EN 61029-1:2000 together with EN 61029-2-1:2002; hand-held motor-operated electric tools and saw benches to form an integrated whole with a hand-held motor-operated electric tools are covered by EN 60745-1:2003 together with EN 60745-2-5:2003.

For the purpose of this document building site saws having a tiltable spindle are considered to be circular saw benches.

This document is not applicable to circular saw benches (with and without sliding table), dimensions saws and building site saws which are manufactured before the date of its publication as EN.

NOTE 4 Machines covered by this document are listed under A.1.1 of Annex IV of the Machinery Directive.

## 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.

**A1** *deleted text* **A1**

EN 349:1993, *Safety of machinery — Minimum gaps to avoid crushing of parts of the human body*

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

EN 847-1:2005, *Tools for woodworking — Safety requirements — Part 1: Milling tools, circular saw blades*

EN 847-3:2004, *Tools for woodworking — Safety requirements — Part 3: Clamping devices*

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EN 894-1:1997, *Safety of machinery — Ergonomics requirements for the design of displays and control actuators — Part 1: General principles for human interactions with displays and control actuators*

EN 894-2:1997, *Safety of machinery — Ergonomics requirements for the design of displays and control actuators — Part 2: Displays*

EN 894-3:2000, *Safety of machinery — Ergonomics requirements for the design of displays and control actuators — Part 3: Control actuators*

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 1005-1:2001, *Safety of machinery — Human physical performance — Part 1: Terms and definitions*

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

EN 1005-3:2002, *Safety of machinery — Human physical performance — Part 3: Recommended force limits for machinery operation*

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

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 50178:1997, *Electronic equipment for use in power installations*

EN 50370-1:2005, *Electromagnetic compatibility (EMC) — Product family standard for machine tools — Part 1: Emission*

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 60204-1:2005, modified)*

EN 60439-1:1999/A1:2004, *Low voltage switchgear and controlgear assemblies — Part 1: Type-tested and partially type-tested assemblies (IEC 60439-1:1999)*

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

EN 60825-1:1994, *Safety of laser products — Part 1: Equipment classification, requirements and user's guide (IEC 60825-1:1993)*

EN 61310-1:2008, *Safety of machinery — Indication, marking and actuation — Part 1: Requirements for visual, acoustic and tactile signals (IEC 61310-1:2007) (A1)*

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

EN 61508-3:2001, *Functional safety of electrical/electronic/programmable electronic safety-related systems — Part 3: Software requirements (IEC 61508-3:1998 + Corrigendum 1999)*

EN 62061:2005, *Safety of machinery — Functional safety of safety-related electrical, electronic and programmable electronic control systems (IEC 62061:2005)*

EN ISO 3743-1:1995, *Acoustics — Determination of sound power levels of noise sources — Engineering methods for small, moveable sources in reverberant fields — Part 1: Comparison method for hard-walled test rooms (ISO 3743-1:1994)*

EN ISO 3743-2:1996, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering methods for small, moveable sources in reverberant fields — Part 2: Methods for special reverberation test rooms (ISO 3743-2:1994)*

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 3745:2003, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Precision methods for anechoic and semi-anechoic rooms (ISO 3745:2003)*

EN ISO 3746:1995, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Survey method using an enveloping measurement surface over a reflecting plane (ISO 3746:1995)*

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

EN ISO 9614-1:1995, *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 1: Measurement at discrete points (ISO 9614-1:1993)*

EN ISO 11202:1995, *Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at a workstation and at other specified positions — Survey method in situ (ISO 11202:1995)*

EN ISO 11204:1995/AC:1997, *Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at a workstation and at other specified positions — Method requiring environmental corrections (ISO 11204:1995)*

EN ISO 11688-1:1998/AC:1998, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part I: Planning (ISO/TR 11688- 1:1995)*

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 controls systems — Part 1: General principles for design (ISO 13849-1:2006)*

EN ISO 13849-2:2003, *Safety of machinery — Safety-related parts of control systems — Part 2: Validation (ISO 13849-2:2003)*

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

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

ISO 7960:1995, *Airborne noise emitted by machine tools — Operating conditions for woodworking machines*

HD 22.4 S4:2004, *Cables of rated voltages up to and including 450/750 V and having crosslinked insulation — Part 4: Cords and flexible cables*

## EN 1870-1:2007+A1:2009 (E)

### 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

##### **circular saw bench**

hand fed machine fitted with a single circular saw blade which is fixed during the cutting operation, and a horizontal table, all or part of which is fixed during operation.

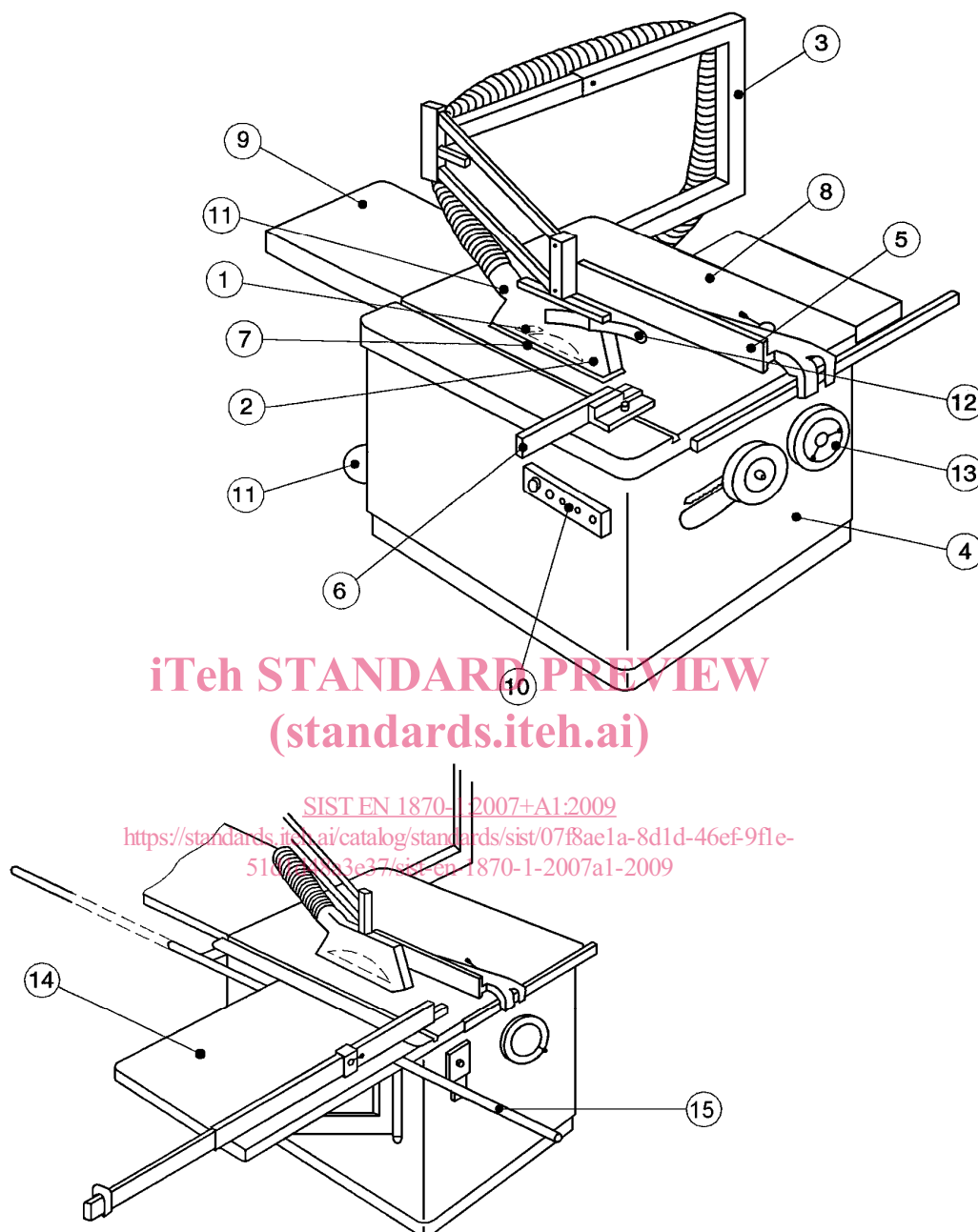
NOTE 1 The saw blade is mounted on a horizontal spindle below the table. The machine may have any of the following main features:

- a) facility for the saw blade to be raised and lowered through the table;
- b) facility to tilt the saw blade for angled cutting;
- c) machine frame below the table may be open (e.g. some building site saws), or closed in;
- d) additional, manually operated sliding table (not adjacent to the saw blade);
- e) facility for scoring;
- f) facility for grooving

NOTE 2 Circular saw benches without sliding table can be equipped with demountable power feed unit.

NOTE 3 An example of a circular saw bench and the terminology of its main parts are shown in Figure 1.

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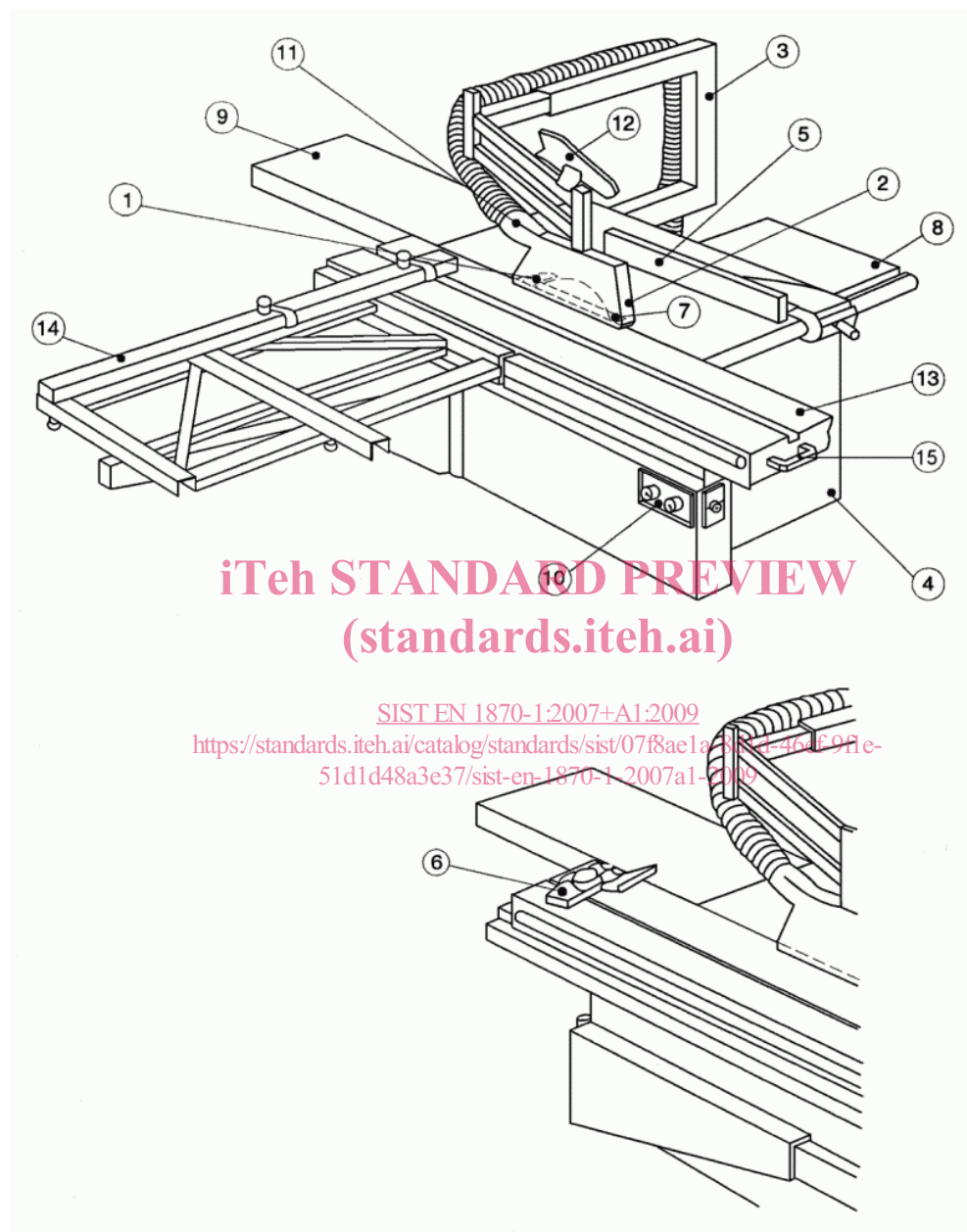
- |   |    |    |                               |
|---|----|----|-------------------------------|
| 1 | 14 | 9  | extension table               |
| 2 | 15 | 10 | controls                      |
| 3 |    | 11 | exhaust outlet                |
| 4 |    | 12 | push stick                    |
| 5 |    | 13 | cutting height adjustment     |
| 6 |    | 14 | sliding table                 |
| 7 |    | 15 | guiding bar for sliding table |
| 8 |    |    |                               |

**Figure 1 — Example of a circular saw bench**

## EN 1870-1:2007+A1:2009 (E)

**3.2 dimension saw**  
hand fed circular saw bench which has an integral sliding table adjacent to the saw blade which may have the facility for post-formed edge pre-cutting

NOTE An example of a dimension saw and the terminology of its main parts are shown in Figure 2.

**Key**

- |   |                           |    |                                 |
|---|---------------------------|----|---------------------------------|
| 1 | living knife              | 9  | extension table                 |
| 2 | saw blade(s) guard        | 10 | controls                        |
| 3 | saw blade guard support   | 11 | exhaust outlet                  |
| 4 | fixed guard beneath table | 12 | push stick                      |
| 5 | rip fence                 | 13 | integrated sliding table        |
| 6 | clamping shoe             | 14 | cross-cutting fence             |
| 7 | table insert              | 15 | integrated sliding table handle |
| 8 | machine table             |    |                                 |

**Figure 2 — Example of a dimension saw**

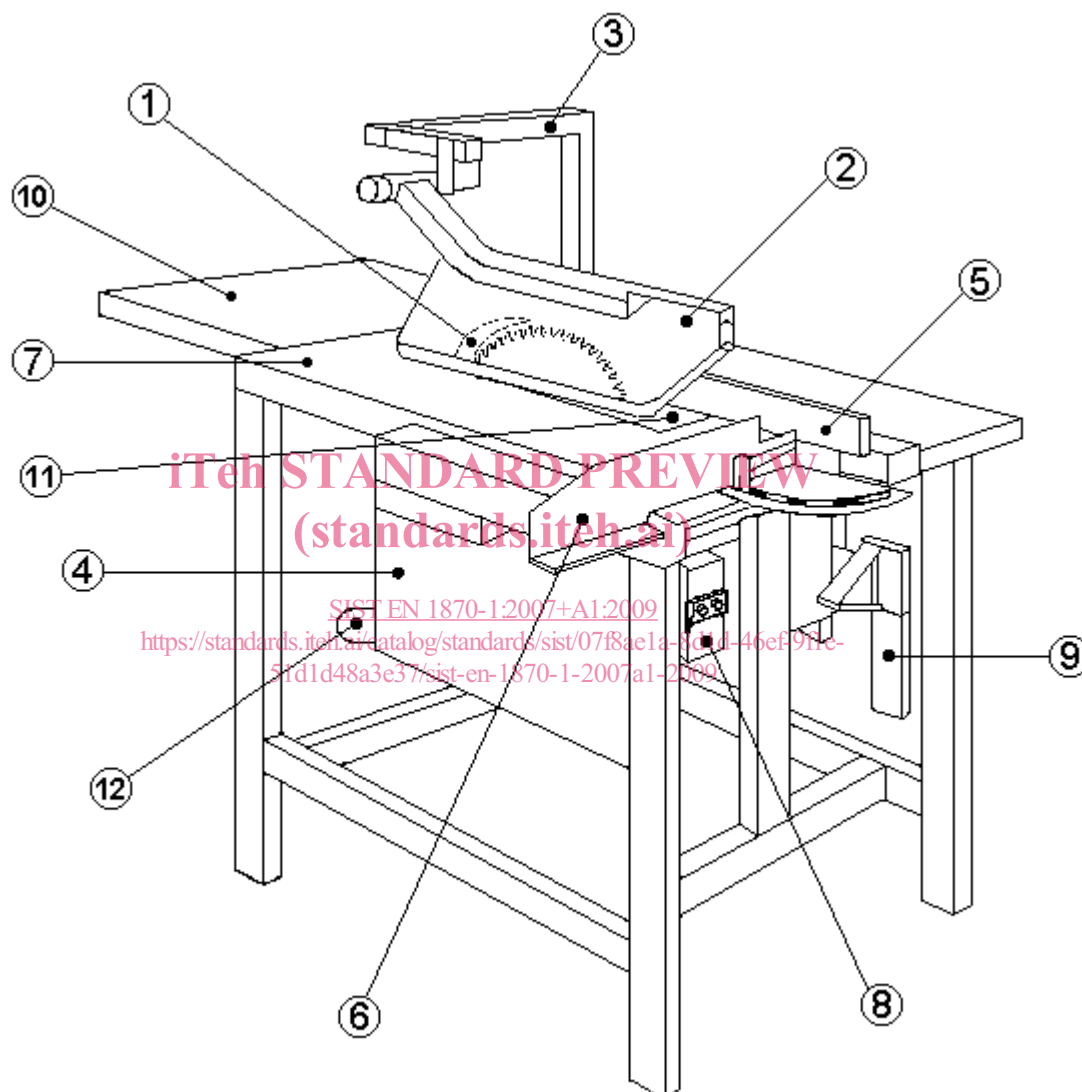
### 3.3

#### building site saw

hand fed circular saw bench, (without the facilities listed in b), e) and f) in 3.1) generally open type, with integrated lifting facilities (e.g. lifting eyes), designed for use on a building site at outside position not protected from atmospheric agents

NOTE 1 An example of a building site saw and the terminology of its main parts is shown in Figure 3

NOTE 2 In Nordic countries the term "building site saw" refers to a machine covered by EN 1870-5:2002.



#### Key

- |   |                           |    |                 |
|---|---------------------------|----|-----------------|
| 1 | lifting knife             | 7  | machine table   |
| 2 | saw blade guard           | 8  | controls        |
| 3 | saw blade guard support   | 9  | push block      |
| 4 | fixed guard beneath table | 10 | extension table |
| 5 | rip fence                 | 11 | table insert    |
| 6 | cross-cutting fence       | 12 | exhaust outlet  |

Figure 3 — Example of a building site saw