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

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

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

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

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**ICS:**

25.080.60	Strojne žage	Sawing machines
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NORME EUROPÉENNE  
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**EN 1870-1**

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Kreissägemaschinen - Teil 1: Tischkreissägemaschinen  
(mit und ohne Schiebetisch) und  
Formatkreissägemaschinen

This European Standard was approved by CEN on 8 January 1999.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

**Central Secretariat: rue de Stassart, 36 B-1050 Brussels**

## CONTENTS

<b>Foreword</b> .....	<b>3</b>
<b>0 Introduction</b> .....	<b>3</b>
<b>1 Scope</b> .....	<b>3</b>
<b>2 Normative references</b> .....	<b>4</b>
<b>3 Definitions and terminology</b> .....	<b>6</b>
3.1 Definitions.....	6
3.2 Terminology.....	13
<b>4 List of hazards</b> .....	<b>14</b>
<b>5 Safety requirements and/or measures</b> .....	<b>17</b>
5.1 Controls.....	17
5.2 Protection against mechanical hazards.....	24
5.3 Protection against non-mechanical hazards.....	55
<b>6 Information for use</b> .....	<b>58</b>
6.1 Warning devices.....	58
6.2 Marking.....	58
6.3 Instruction handbook.....	59
<b>Annex A (normative) Test for rigidity of building site saws</b> .....	<b>61</b>
<b>Annex B (normative) Saw spindle dimensional tolerances</b> .....	<b>62</b>
<b>Annex C (normative) Riving knife mounting strength test</b> .....	<b>63</b>
<b>Annex D (normative) Riving knife lateral stability test</b> .....	<b>64</b>
<b>Annex E (normative) Machine table and insert minimum dimensions</b> .....	<b>65</b>
<b>Annex F (normative) Test for stability of sawblade guard</b> .....	<b>66</b>
<b>Annex G (informative) Safe working practice</b> .....	<b>68</b>
<b>Annex H (informative) Bibliography</b> .....	<b>69</b>
<b>Annex ZA (informative) Clauses of this European Standard addressing essential requirements or other provisions of EU directives</b> .....	<b>70</b>

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## Foreword

This European Standard has been prepared by Technical Committee CEN/TC 142 "Woodworking machines - Safety", the secretariat of which is held by BSI.

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 December 1999, and conflicting national standards shall be withdrawn at the latest by December 1999.

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).

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

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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

The 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 292-1 : 1991 for a description of A, B and C standards).

## 0 Introduction

This European standard 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 and is a type "C" standard as defined in EN 292-1 : 1991.

The extent to which hazards are covered is indicated in the scope of this European Standard

The requirements of this European Standard concern designers, manufacturers, suppliers and importers of circular saw benches (with and without sliding table) and dimension saws.

This European standard also includes information to be provided by the manufacturer to the user.

Common requirements for tooling are given in EN 847-1 : 1997.  
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## 1 Scope

This European Standard specifies the requirements and/or measures to remove the hazards and limit the risks on circular saw benches (with and without sliding table) and dimensions saws, hereinafter referred to as "machines", designed to cut solid wood, chipboard, fibreboard, plywood and also these materials where they are covered with plastic edging and/or plastic/light alloy laminates.

Electrically driven machines excluded by the scope of this European Standard are covered by the requirements of EN 61029-1 : 1995 and prEN 61029-2-1 or by EN 50144 -1 : 1995.

This European Standard covers the hazards relevant to this machine as listed in 4. This European Standard does not cover the hazards related to Electromagnetic Compatibility (EMC) as required by the EMC Directive 89/336/EEC dated 03-05-89.

This European Standard does not apply to :

- hand held woodworking machines or any adaptation permitting their use in a different mode, i.e. bench mounting;
- machines set up on a bench or a table similar to a bench, which is intended to carry out work in a stationary position, capable of being lifted by one person by hand.

This European Standard is primarily directed at machines which are manufactured after the date of issue of this standard.

Circular saw benches and dimension saws can be used for ripping, cross cutting and dimensioning.

NOTE : Machines covered by this European Standard are listed under A.1.1 of Annex IV of the Machinery Directive.

## 2 Normative references

This European standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 292 - 1 :	1991	Safety of machinery - Basic concepts, general principles for design - Part 1 : Basic terminology and methodology
EN 292 - 2 :	1991	Safety of machinery - Basic concepts, general principles for design - Part 2 : Technical principles and specifications
EN 292-2/A1 :	1995	
EN 294 :	1992	Safety of machinery - Safety distances to prevent danger zones being reached by the upper limbs
EN 847-1 :	1997	Tools for woodworking - Safety requirements - Part 1 : Milling tools and circular sawblades
EN 954-1 :	1996	Safety of machinery - Safety related parts of control systems - Part 1 : General principles for design
EN 982 :	1996	Safety requirements for fluid power systems and their components - Hydraulics
EN 983 :	1996	Safety requirements for fluid power systems and their components - Pneumatics
EN 1088 :	1995	Safety of machinery - Interlocking devices associated with guards - General principles and provisions for design



EN 50144-1 :	1995	Safety of hand held electric motor operated tools - Part 1 : General requirements
EN 60204-1 :	1992	Safety of machinery - Electrical equipment of Machines - Part 1 : General requirements (IEC 204-1 : 1992, modified)
HD 21.1 S3	1997	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750V - Part 1 : General requirements
HD 22.1 S3	1997	Rubber insulated cables of rated voltages up to and including 450/750V - Part 1 : General requirements
EN 60529 :	1991	Degrees of protection provided by enclosures (IP Code) (IEC 529 : 1989)
EN 60825-1 :	1994	Safety of laser products - Part 1 : Equipment classification, requirements and user's guide
EN 60947-4-1 :	1992	Low voltage switchgear and control gear - Part 4 : Contactors and motor starters - Section 1 : Electromechanical contactors and motor starters (IEC 947-4-1 : 1990)
EN 60947-5-1 :	1991	Low voltage switchgear and control gear - Part 5 : Control circuit devices and switching elements - Section 1 : Electromechanical control circuit devices (IEC 947-5-1 : 1990)
EN 61029-1 :	1995	Safety of transportable motor operated electric tools - Part 1 : General requirements (IEC 1029-1 : 1990 modified)
prEN 61029-2-1 :		Safety of transportable motor operated electric tools - Part 2 : Section 1 : Particular requirements for Circular saw benches
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 - 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 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)

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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 - Survey method for the measurement of emission sound pressure levels at a workstation and at other specified positions (ISO 11202 : 1995)
EN ISO 11204 :	1995	Acoustics - Noise emitted by machinery and equipment - Determination of emission sound pressure levels at the workstation and at other specified positions with environmental corrections (ISO 11204 : 1995)
ISO 3745 :	1977	Acoustics - Determination of sound power levels of noise sources - Precision methods for anechoic and semi anechoic rooms
ISO 7960 :	1995	Airborne noise emitted by machine tools - Operating conditions for woodworking machines
ISO TR 11688-1 :	1995	Acoustics - Recommended practice for the design of low noise machinery and equipment - Part 1 : Planning.

### 3 Definitions and terminology

#### 3.1 Definitions

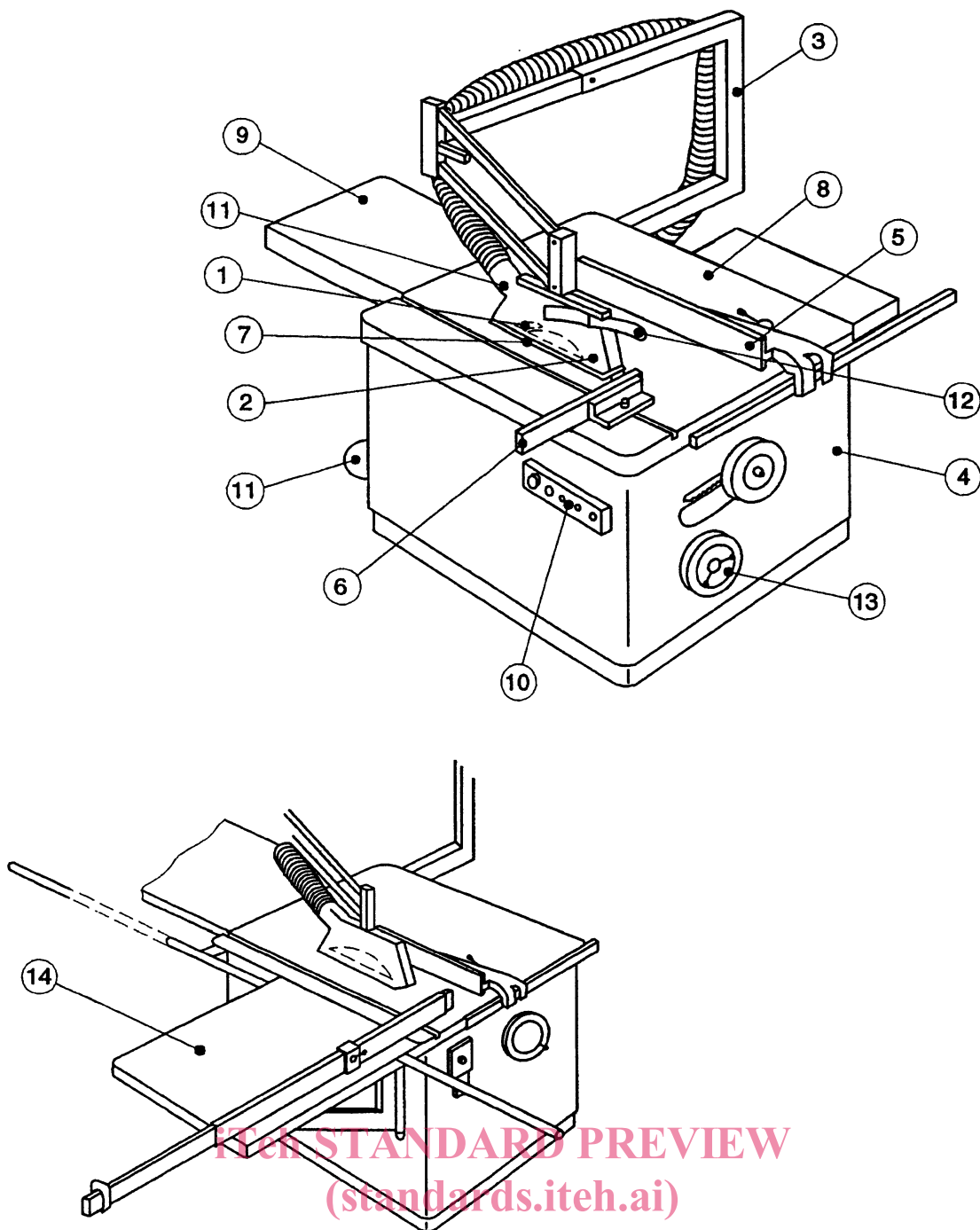
For the purposes of this European Standard the following definitions apply :

##### 3.1.1 circular saw bench

A hand fed machine fitted with a single circular sawblade which is fixed during the cutting operation, and a horizontal table, all or part of which is fixed during operation. The sawblade is mounted on a horizontal spindle below the table (see figure 1). The machine may have any of the following features:

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- a) the facility for the sawblade to be raised and lowered through the table;
  - b) the facility to tilt the sawblade for angled cutting;  
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  - c) the machine frame below the table may be open (e.g. some building site saws, see figure 3) or closed in;
  - d) an additional, manually operated sliding table (not adjacent to the sawblade);
  - e) the facility for scoring.





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Number	Name	Number	Name
1	Riving knife	8	Table
2	Saw guard	9	Extension table
3	Saw guard support	10	Controls
4	Fixed guard beneath table	11	Exhaust outlet
5	Rip fence	12	Push stick
6	Cross-cut fence	13	Cutting height adjustment
7	Table insert	14	Travelling table

Figure 1 : Circular saw bench terminology

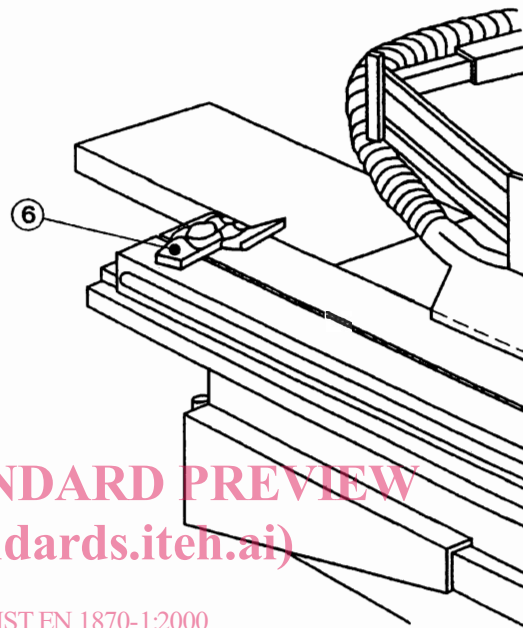
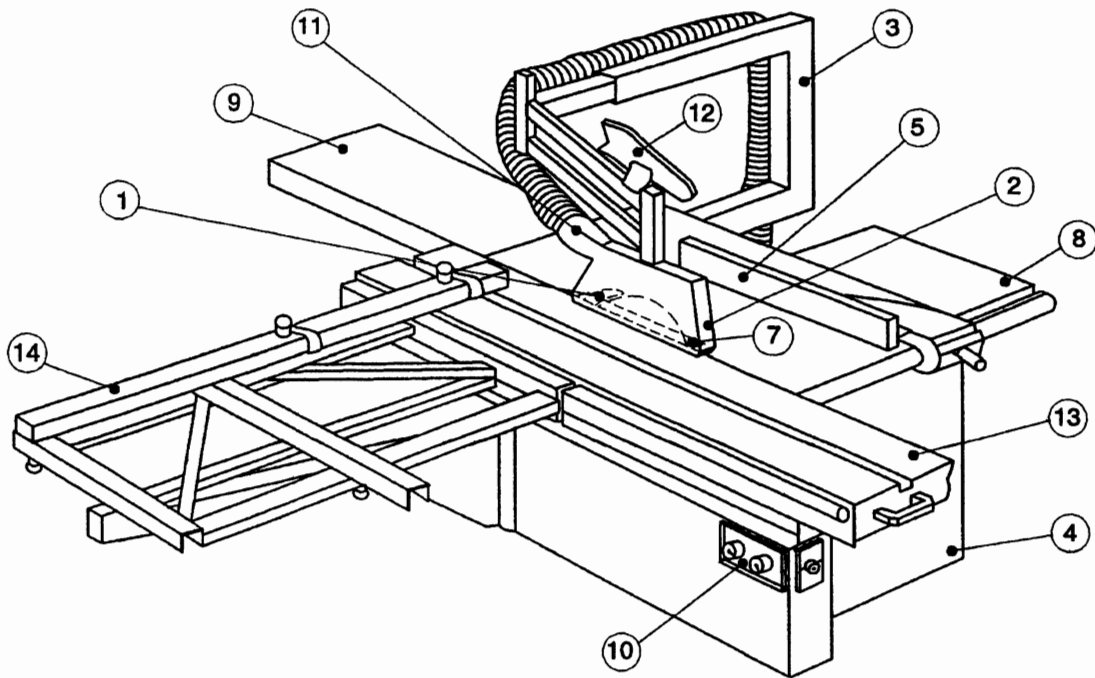
### 3.1.2 dimension saw

A hand fed circular saw bench which has an integral sliding table adjacent to the sawblade (see figure 2) which may have the facility for post-formed edge pre-cutting.

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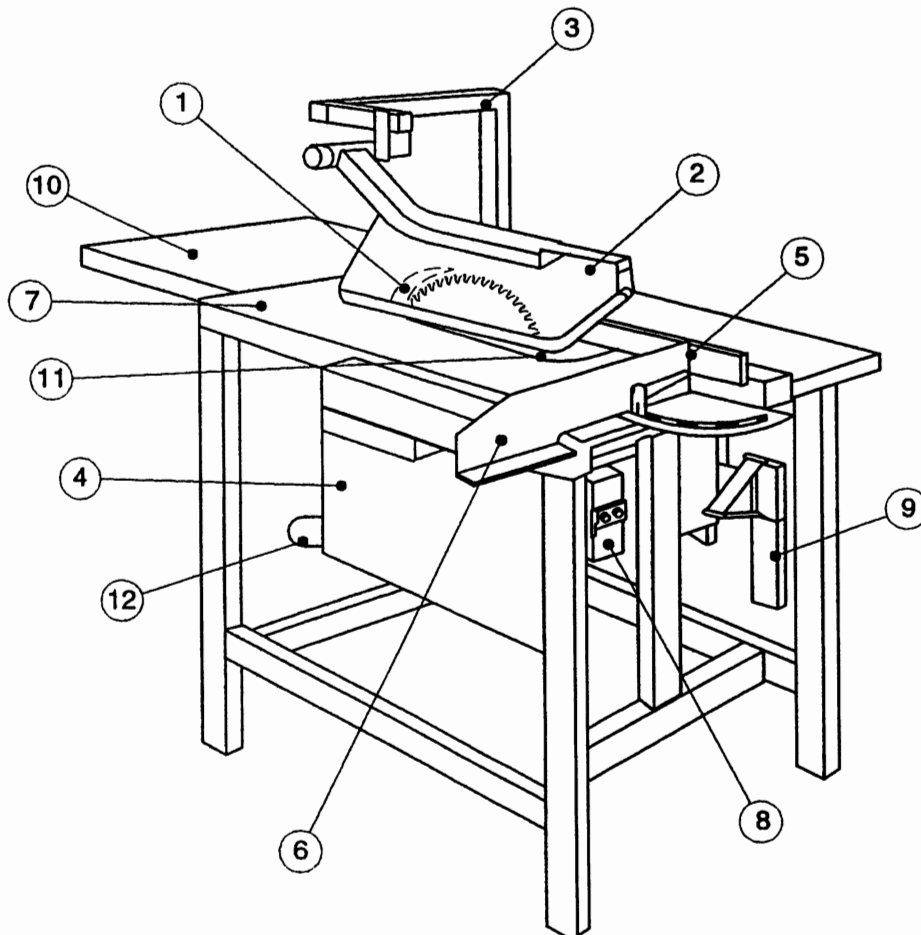
Number	Name	Number	Name
1	Riving knife	8	Table
2	Saw guard	9	Extension table
3	Saw guard support	10	Controls
4	Fixed guard beneath table	11	Exhaust outlet
5	Rip fence	12	Push stick
6	Clamping shoe	13	Travelling table
7	Table insert	14	Cross cut fence

Figure 2 : Dimension saw terminology

**3.1.3 building site saw (non-tilting/non-stroking)**

A hand fed circular saw bench, generally open type, with integrated lifting facilities (e.g. lifting eyes) and with a sawblade diameter  $\geq 315$  mm, designed for use on a building site (see figure 3).

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



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Number	Name	Number	Name
1	Riving knife	7	Table
2	Saw guard	8	Controls
3	Saw guard support	9	Push block
4	Fixed guard beneath table	10	Extension table
5	Rip fence	11	Table insert
6	Cross-cut fence	12	Exhaust outlet

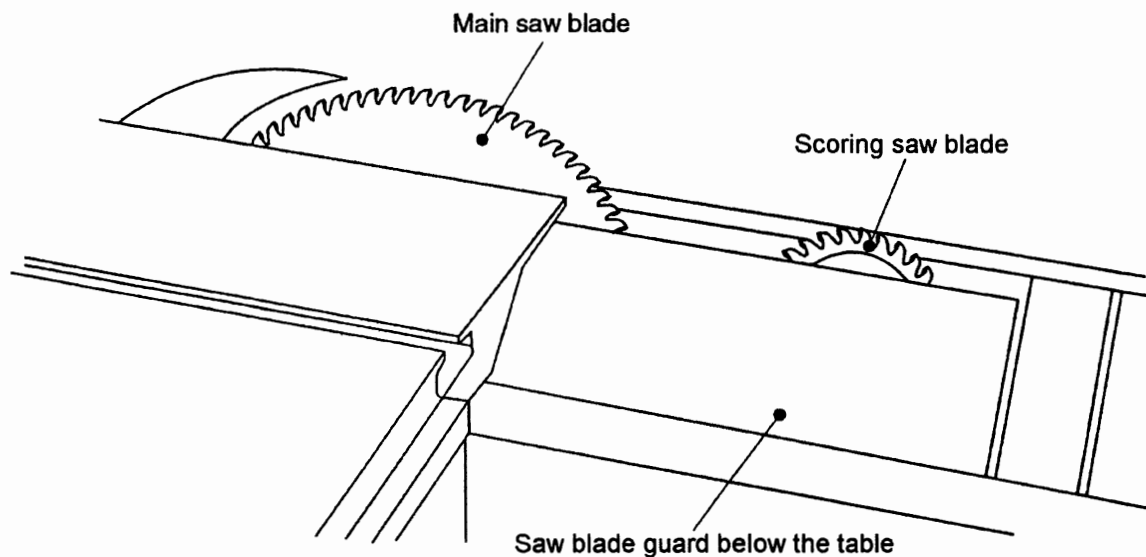
**Figure 3 : Building site saw terminology**

**3.1.4** scoring

The making of a shallow cut in the surface of a workpiece, deep enough to pass through any veneer or plastic facing on the workpiece so as to prevent surface damage when the main sawblade makes its cut.

**3.1.5** scoring sawblade

A sawblade mounted in front of the main sawblade which is used for scoring (see figure 4).



**Figure 4 : Main sawblade and scoring sawblade (main sawblade guard not shown)**

**3.1.6** post-formed edge pre-cutting

That cut made in the rear profiled edge of the workpiece deep enough to prevent surface damage when the main sawblade makes its cut.

**3.1.7** post-formed edge pre-cutting sawblade

The sawblade used for post-formed edge pre-cutting. This may be the scoring sawblade or a separate sawblade specifically for this purpose.

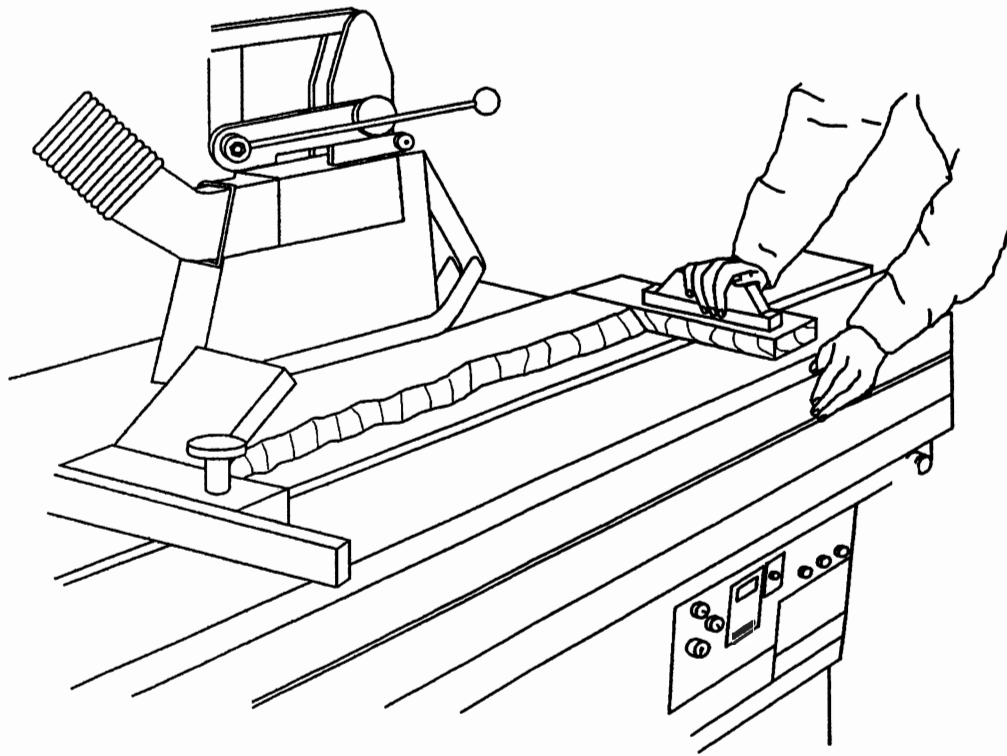
**3.1.8** machine actuator

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A power mechanism used to effect motion of the machine.

**3.1.9** hand feed

The manual holding and/or manual guiding of the workpiece. Hand feed includes the use of a hand operated carriage on which the workpiece is placed manually or clamped, as illustrated in figure 5, and the use of a demountable power feed unit.



**Figure 5 : Hand feeding using a sliding table**

**3.1.10 demountable power feed unit**

A feed mechanism which is mounted on the machine so that it can be moved from the working position without the use of a spanner or similar additional device.

**3.1.11 stationary machine**

A machine designed to be located on or fixed to the floor or other parts of the structure of the premises and to be stationary during use.

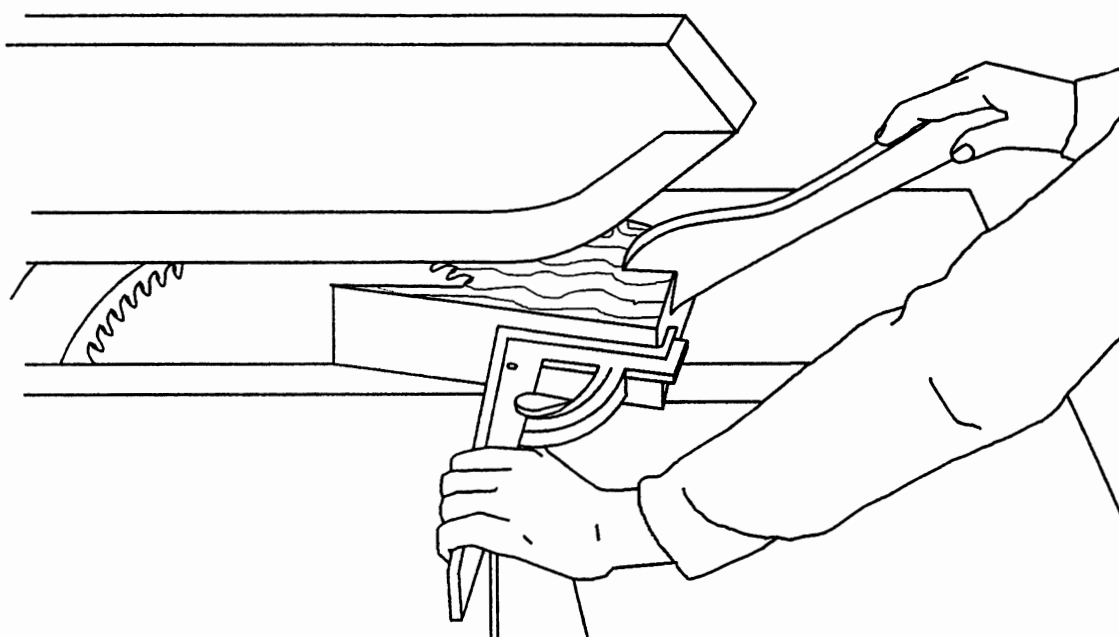
**3.1.12 transportable machine**

A machine which is located on the floor, stationary during use and equipped with a device, normally wheels, which allows it to be moved between locations.

**3.1.13 safety appliance**

An additional device which is not an integral part of the machine but which assists the operator in the safe feeding of the workpiece (e.g. as illustrated in figure 6).





**Figure 6 : Building site saw - Example of device for cutting wedges**

### 3.1.14 ejection

The unexpected movement of the workpiece, parts of it or part of the machine from the machine during processing.

### 3.1.15 kickback

A particular form of ejection describing the unexpected movement of the workpiece or parts of it opposite to the direction of feed during processing.

### 3.1.16 run-up time

The elapsed time from the actuation of the start control device until the spindle reaches the actual speed related to the intended speed.

### 3.1.17 run-down time (standards.iteh.ai)

The elapsed time from the actuation of the stop control device up to spindle standstill.

### 3.1.18 confirmation <https://standards.iteh.ai/catalog/standards/sist/9d5d67bf-3633-4a03-b8de-d2a429710268/sist-en-1870-1-2000>

Statements, sales literature, leaflets or other documents where the manufacturer (or supplier) declares either the characteristics or the compliance of the material or product to a relevant standard.

## 3.2 Terminology

The terminology for the main parts of the machine are shown in figures 1, 2, 3 and 4.