



SLOVENSKI STANDARD

SIST EN 1870-18:2013

01-junij-2013

Nadomešča:

SIST EN 1870-1:2007+A1:2009

Varnost lesnoobdelovalnih strojev - Krožne žage - 18. del: Formatne žage

Safety of woodworking machines - Circular sawing machines - Part 18: Dimension saws

Sicherheit von Holzbearbeitungsmaschinen - Kreissägemaschinen - Teil 18:
Formatkreissägemaschinen

Sécurité des machines pour le travail du bois - Machines à scies circulaires - Partie 18:
Scies au format

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 1870-18:2013](https://standards.iteh.ai/catalog/standards/sist/cc661acb-02bd-40b4-8e88-3314218271/sist-en-1870-18-2013)

[https://standards.iteh.ai/catalog/standards/sist/cc661acb-02bd-40b4-8e88-](https://standards.iteh.ai/catalog/standards/sist/cc661acb-02bd-40b4-8e88-3314218271/sist-en-1870-18-2013)

Ta slovenski standard je istoveten z: **EN 1870-18:2013**

ICS:

25.080.60	Strojne žage	Sawing machines
79.120.10	Lesnoobdelovalni stroji	Woodworking machines

SIST EN 1870-18:2013

en,fr,de

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 1870-18:2013

<https://standards.iteh.ai/catalog/standards/sist/cc661acb-02bd-40b4-8e88-826934038271/sist-en-1870-18-2013>

EUROPEAN STANDARD

EN 1870-18

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2013

ICS 79.120.10

Supersedes EN 1870-1:2007+A1:2009

English Version

**Safety of woodworking machines - Circular sawing machines -
Part 18: Dimension saws**Sécurité des machines pour le travail du bois - Machines à
scies circulaires - Partie 18: Scies au formatSicherheit von Holzbearbeitungsmaschinen -
Kreissägemaschinen - Teil 18: Formatkreissägemaschinen

This European Standard was approved by CEN on 7 March 2013.

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-CENELEC 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-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

SIST EN 1870-18:2013

<https://standards.iteh.ai/catalog/standards/sist/cc661acb-02bd-40b4-8e88-826934038271/sist-en-1870-18-2013>

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG**Management Centre: Avenue Marnix 17, B-1000 Brussels**

Contents

	Page
Foreword.....	4
Introduction	6
1 Scope.....	7
2 Normative references.....	7
3 Terms and definitions	10
4 List of significant hazards	14
5 Safety requirements and/or measures	17
5.1 General	17
5.2 Controls	17
5.2.1 Safety and reliability of control systems.....	17
5.2.2 Position of controls.....	18
5.2.3 Starting.....	20
5.2.4 Normal stopping.....	20
5.2.5 Emergency stop	21
5.2.6 Mode selection	21
5.2.7 Speed control	22
5.2.8 Power operated adjustment of the saw blade(s) and/or fence(s).....	23
5.2.9 Interlocking of guards, movements and functions.....	24
5.2.10 Failure of the power supply	24
5.2.11 Failure of the control circuits	24
5.3 Protection against mechanical hazards	24
5.3.1 Stability.....	24
5.3.2 Hazard of break up during operation	25
5.3.3 Tool holder and tool design.....	25
5.3.4 Braking	29
5.3.5 Devices to minimise the possibility or the effect of kickback.....	30
5.3.6 Workpiece supports and guides.....	35
5.3.7 Prevention of access to moving parts	39
5.3.8 Powered workpiece clamping.....	49
5.3.9 Safety appliances.....	50
5.4 Protection against non-mechanical hazards	53
5.4.1 Fire.....	53
5.4.2 Noise.....	53
5.4.3 Emission of chips and dust.....	54
5.4.4 Electricity.....	55
5.4.5 Ergonomics and handling.....	56
5.4.6 Pneumatics.....	57
5.4.7 Electromagnetic compatibility.....	57
5.4.8 Laser	57
5.4.9 Static electricity.....	57
5.4.10 Errors of fitting.....	58
5.4.11 Supply disconnection (Isolation).....	58
5.4.12 Maintenance	58
6 Information for use.....	59
6.1 General	59
6.2 Marking.....	59
6.2.1 Marking of the machine	59
6.2.2 Marking of riving knives	60

6.3	Instruction handbook	60
Annex A	(normative) Saw spindle dimensional tolerances	65
Annex B	(normative) Riving knife mounting strength test	66
Annex C	(normative) Riving knife lateral stability test	67
Annex D	(normative) Minimum dimensions of the machine table, extension table	68
Annex E	(normative) Saw blade guard stability test	69
E.1	General	69
E.2	Separately from riving knife mounted saw blade guards	69
E.2.1	Saw blade guards with lead-in	69
E.2.2	Saw blade guards with in-feed rollers	70
E.3	Riving knife mounted saw blade guards	71
Annex F	(normative) Impact test method for guards	73
F.1	General	73
F.2	Test method	73
F.2.1	Preliminary remarks	73
F.2.2	Testing equipment	73
F.2.3	Projectile for guards	73
F.2.4	Sampling	73
F.2.5	Test procedure	73
F.3	Results	74
F.4	Assessment	74
F.5	Test report	74
F.6	Test equipment for impact test	74
Annex G	(normative) Braking tests	76
G.1	Conditions for all tests	76
G.2	Tests	76
G.2.1	Un-braked run-down time	76
G.2.2	Braked run-down time	76
Annex ZA	(informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC	77
	Bibliography	80

IFEH STANDARD PREVIEW

(standards.ifeh.ai)

SIST EN 1870-18:2013

<https://standards.ifeh.ai/catalog/standards/sist/cc661acb-02bd-40b4-8c88-376934938271/standard/1870-18-2013>

EN 1870-18:2013 (E)**Foreword**

This document (EN 1870-18:2013) 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 October 2013, and conflicting national standards shall be withdrawn at the latest by October 2013.

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, together with EN 1870-19, supersedes EN 1870-1:2007+A1:2009.

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.

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;*
- *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 saw benches/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: Multi-blade 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 (radial arm saws);*
- *Part 18: Dimension saws (the present document);*
- *Part 19: Circular saw benches (with and without sliding table) and building site saws.*

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 12100:2010 for a description of A, B and C standards).

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 1870-18:2013](https://standards.iteh.ai/catalog/standards/sist/cc661acb-02bd-40b4-8e88-826934038271/sist-en-1870-18-2013)

<https://standards.iteh.ai/catalog/standards/sist/cc661acb-02bd-40b4-8e88-826934038271/sist-en-1870-18-2013>

EN 1870-18:2013 (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 12100:2010.

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 dimension 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+A1:2007.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 1870-18:2013

<https://standards.iteh.ai/catalog/standards/sist/cc661acb-02bd-40b4-8e88-826934038271/sist-en-1870-18-2013>

1 Scope

This European Standard deals with all significant hazards, hazardous situations and events as listed in Clause 4 which are relevant to stationary and displaceable dimensions 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 including reasonably foreseeable misuse.

Machines which are designed to work wood based materials may also be used for working rigid plastic materials with similar physical characteristics as wood.

The machine may have any of the following features:

- a) facility for the saw blade and scoring saw blade (if any) to be raised and lowered;
- b) facility to tilt the main saw blade and scoring saw blade (if any) for angled cutting;
- c) facility for scoring;
- d) facility for grooving with milling tool;
- e) demountable power feed unit;
- f) post-formed edge pre-cutting unit;
- g) power operated sliding table;
- h) workpiece clamping.

NOTE 1 For the definition of stationary and displaceable machine, see 3.10 and 3.11.

NOTE 2 Dimension saws are used for ripping, cross cutting, dimensioning and grooving.

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 is not applicable to dimension saws which are manufactured before the date of its publication as a European Standard.

NOTE 3 Machines covered by this document are listed under 1.1 of Annex IV of the Machinery Directive.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 614-1:2006+A1:2009, *Safety of machinery — Ergonomic design principles — Part 1: Terminology and general principles*

EN 847-1:2005+A1:2007, *Tools for woodworking — Safety requirements — Part 1: Milling tools, circular saw blades*

EN 894-1:1997+A1:2008, *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 1870-18:2013 (E)

EN 894-2:1997+A1:2008, *Safety of machinery — Ergonomics requirements for the design of displays and control actuators — Part 2: Displays*

EN 894-3:2000+A1:2008, *Safety of machinery — Ergonomics requirements for the design of displays and control actuators — Part 3: Control actuators*

EN 1005-1:2001+A1:2008, *Safety of machinery — Human physical performance — Part 1: Terms and definitions*

EN 1005-2:2003+A1:2008, *Safety of machinery — Human physical performance — Part 2: Manual handling of machinery and component parts of machinery*

EN 1005-3:2002+A1:2008, *Safety of machinery — Human physical performance — Part 3: Recommended force limits for machinery operation*

EN 1005-4:2005+A1:2008, *Safety of machinery — Human physical performance — Part 4: Evaluation of working postures and movements in relation to machinery*

EN 1037:1995+A1:2008, *Safety of machinery — Prevention of unexpected start-up*

EN 1088:1995+A2:2008, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection*

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 50525-2-21:2011, *Electric cables — Low voltage energy cables of rated voltages up to and including 450/750 V (Uo/U) — Part 2-21: Cables for general applications — Flexible cables with crosslinked elastomeric insulation*

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

EN 60439-1:1999¹⁾, *Low voltage switchgear and controlgear assemblies — Part 1: Type-tested and partially type-tested assemblies (IEC 60439-1:1999)*

EN 60529:1991²⁾, *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)*

EN 60825-1:2007, *Safety of laser products — Part 1: Equipment classification and requirements (IEC 60825-1:2007)*

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

EN 61800-5-2:2007, *Adjustable speed electrical power drive systems — Part 5-2: Safety requirements — Functional (IEC 61800-5-2:2007)*

EN ISO 3743-1:2010, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering methods for small movable sources in reverberant fields — Part 1: Comparison method for a hard-walled test room (ISO 3743-1:2010)*

¹⁾ EN 60439-1:1999 is impacted by EN 60439-1:1999/A1:2004.

²⁾ EN 60529:1991 is impacted by EN 60529:1991/A1:2000.

EN ISO 3743-2:2009, *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 3744:2010, *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 3745:2012, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Precision methods for anechoic rooms and hemi-anechoic rooms (ISO 3745:2012)*

EN ISO 3746:2010, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Survey method using an enveloping measurement surface over a reflecting plane (ISO 3746:2010)*

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 9614-1:2009, *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 1: Measurement at discrete points (ISO 9614-1:1993)*

EN ISO 11202:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions applying approximate environmental corrections (ISO 11202:2010)*

EN ISO 11204:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions applying accurate environmental corrections (ISO 11204:2010)*

EN ISO 11688-1:2009, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 1: Planning (ISO/TR 11688-1:1995)*

EN ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction (ISO 12100:2010)*

EN ISO 13849-1:2008, *Safety of machinery — Safety-related parts of controls 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)*

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

EN 1870-18:2013 (E)**3 Terms and definitions**

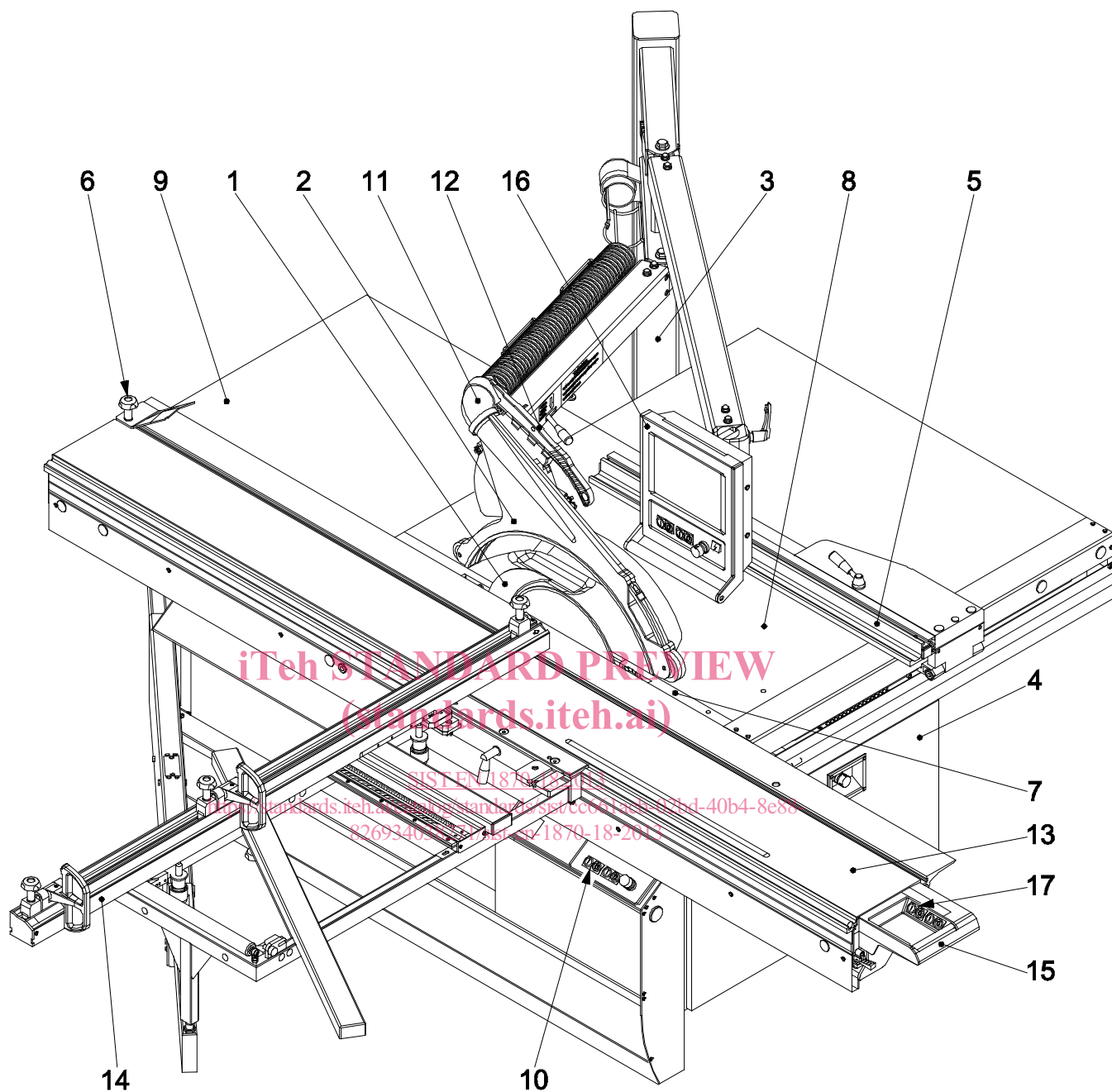
For the purposes of this document, the terms and definitions given in EN ISO 12100:2010 and the following apply.

3.1 dimension saw
hand fed machine fitted with a single main circular saw blade which is fixed in position during the cutting operation, and a sliding table adjacent to the saw blade (see Figure 1)

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

- a) facility for the saw blade and scoring saw blade (if any) to be raised and lowered;
- b) facility to tilt the main saw blade and scoring saw blade (if any) for angled cutting;
- c) facility for scoring;
- d) facility for grooving with milling tool;
- e) demountable power feed unit;
- f) post-formed edge pre-cutting unit;
- g) power operated sliding table;
- h) workpiece clamping.

ITeH STANDARD PREVIEW
(standards.iteh.ai)
[SIST EN 1870-18:2013](https://standards.iteh.ai/catalog/standards/sist/cc661acb-02bd-40b4-8e88-826934038271/sist-en-1870-18-2013)
<https://standards.iteh.ai/catalog/standards/sist/cc661acb-02bd-40b4-8e88-826934038271/sist-en-1870-18-2013>

**Key**

- | | | | |
|---|---------------------------|----|--|
| 1 | ripping knife | 9 | extension table |
| 2 | saw blade(s) guard | 10 | controls |
| 3 | saw blade guard support | 11 | saw blade guard support (may include pipe for chips and dust extraction) |
| 4 | fixed guard beneath table | 12 | push stick |
| 5 | rip fence | 13 | sliding table |
| 6 | clamping shoe | 14 | cross-cutting fence |
| 7 | table insert | 15 | sliding table handle |
| 8 | machine table | 16 | moveable control panel |
| | | 17 | additional controls at the rear side of the sliding table |

Figure 1 — Example of a dimension saw

EN 1870-18:2013 (E)**3.2****scoring**

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 saw blade makes its cut

3.3**scoring saw blade**

saw blade mounted in front of the main saw blade which is used for scoring

3.4**post-formed edge pre-cutting**

cut made in the rear profiled edge of the workpiece deep enough to prevent surface damage when the main saw blade makes its cut

3.5**post-formed edge pre-cutting saw blade**

saw blade used for post-formed edge pre-cutting

Note 1 to entry: This may be the scoring saw blade or a separate saw blade specifically for this purpose.

3.6**grooving**

making of a cut in the surface of the workpiece not deep enough to pass through using the saw blade or a milling tool

3.7**machine actuator**

power mechanism used to effect motion of the machine

3.8**hand feed**

manual holding and/or manual guiding of the workpiece for cutting

Note 1 to entry: Hand feed may include the use of a hand operated sliding table on which the workpiece is placed manually or clamped, and the use of a demountable power feed unit.

Note 2 to entry: Hand feed may also include the use of a powered operated sliding table.

3.9**de-mountable power feed unit**

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

3.10**stationary machine**

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

3.11**displaceable machine**

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

3.12**safety appliance**

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. push block or push stick

3.13**kickback**

unexpected sudden movement of the workpiece or parts of it opposite to the direction of feed during processing

3.14**un-braked run-down time**

time elapsed from the actuation of the stop control, but not the braking device (if fitted) up to spindle standstill

3.15**braked run-down time**

time elapsed from the actuation of the stop control and the brake device up to spindle standstill

3.16**safety programmable logic controller (PLC)**

programmable logic controller dedicated to safety related application designed in the required PL according to EN ISO 13849-1:2008

3.17**safety related part of a control system (SRP/CS)**

part or subpart(s) of a control system that responds to input signals and generates safety-related output signals

Note 1 to entry: The combined safety-related parts of a control system start at the point where the safety-related signals are initiated (including e.g. the actuating cam and the roller of the position switch) and end at the output of the power control elements (including e.g. the main contacts of the contactor).

Note 2 to entry: If monitoring systems are used for diagnostics they are considered as SRP/C.

[SOURCE: EN ISO 13849-1:2008, 3.1.1]

3.18**embedded software (SRESW)**

software that is part of the system supplied by the control manufacturer and which is not accessible for modification by the user of the machinery

Note 1 to entry: Firmware or system software are examples of embedded software.

[SOURCE: EN ISO 13849-1:2008, 3.1.37]

Note 2 to entry: Manufacturer means manufacturer of the system.

Note 3 to entry: For example the operating system of a speed monitoring device.

3.19**application software (SRASW)**

software specific to the application, implemented by the machine manufacturer, and generally containing logic sequences, limits and expressions that control the appropriate inputs, outputs, calculations and decisions necessary to meet the SRP/CS requirements

[SOURCE: EN ISO 13849-1:2008, 3.1.36]

3.20**information of the supplier**

statements, sales literature, leaflets or other documents, in which a manufacturer (supplier) declares either the characteristics of e.g. a material or product or the conformity of the material or product to a relevant standard