



SLOVENSKI STANDARD

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Safety of woodworking machines - Circular sawing machines - Part 13: Horizontal beam panel sawing machines

iTeh STANDARD PREVIEW

Sicherheit von Holzbearbeitungsmaschinen - Kreissägemaschinen - Teil 13: Horizontale Plattenkreissägemaschinen mit Druckbalken

SIST EN 1870-13:2008

Sécurité des machines pour le travail du bois - Machines à scier circulaires - Partie 13: Scies à panneaux horizontales à presseur

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ICS:

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79.120.10	Lesnoobdelovalni stroji	Woodworking machines

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Sécurité des machines pour le travail du bois - Machines à scier circulaires - Partie 13: Scies à panneaux horizontales à presseur

Sicherheit von Holzbearbeitungsmaschinen - Kreissägemaschinen - Teil 13: Horizontale Plattenkreissägemaschinen mit Druckbalken

This European Standard was approved by CEN on 21 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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EN 1870-13:2007 (E)**Foreword**

This document (EN 1870-13:2007) 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of an identical text or by endorsement, at the latest by June 2008, and conflicting national standards shall be withdrawn at the latest by June 2009.

This document together with prEN 1870-14:2007 supersedes EN 1870-2:1999.

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.

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

Organisations contributing to the preparation of this European Standard include the 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).

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 2: Horizontal beam panel saws and vertical panel 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 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)

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 1870-13:2007 (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 horizontal beam panel sawing machines. This document is also useful for designers and importers.

This document also includes provision 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 horizontal beam panel sawing machines where the saw unit is mounted below the workpiece support and which are manually or mechanically loaded and / or unloaded, fitted with:

- a side pressure device and / or
- the facility for scoring and / or
- the facility for post-formed / soft-formed edge pre-cutting and / or
- a panel turning device and / or
- a pushing out device and / or
- pneumatic clamping of the saw blade and / or
- a powered panel loading device and / or
- a grooving device and / or
- additional cutting line(s) inside the machine for longitudinal and / or head cut (before transversal cutting line) and / or
- workpiece vacuum clamping as part of a panel turning device or of a panel loading device,

hereinafter referred to as "machines" when they are used as intended and under the conditions foreseen by the manufacturer.

The machines are designed for cutting panels consisting of:

- a) wood based materials such as chipboard, fibreboard, plywood and also these materials where they are covered with plastic/light alloy laminates which can be cut easily;
- b) solid wood;
- c) hardened rubber and hardened plastic material;
- d) non ferrous materials e.g. light alloy;
- e) gypsum boards, gypsum bounded fibreboards;
- f) composite boards made from the materials listed above.

This document does not deal with specific hazards related to:

- i) specific features which differ from the list above;
- ii) the machining of panels with grooving tools;
- iii) mechanical unloading of panels;
- iv) the combination of a single machine being used with any other machine (as part of a line).

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This document is not applicable to horizontal beam panel sawing machines which are manufactured before the date of its publication as EN.

NOTE Machines covered by this standard if manually loaded and / or unloaded are listed under A.1.4 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.

EN 294:1992, *Safety of machinery — Safety distances to prevent danger zones being reached by the upper limbs*

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 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 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 1760-3:2004, *Safety of machinery — Pressure sensitive protective devices — Part 3: General principles for the design and testing of pressure sensitive bumpers, plates, wires and similar devices*

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, *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 61310-1:1995, *Safety of machinery — Indication, marking and actuation — Part 1: Requirements for visual, auditory and tactile signals (IEC 61310-1:1995)*
- EN 61496-1:2004, *Safety of machinery — Electro-sensitive protective equipment — Part 1: General requirements and tests (IEC 61496-1: 2004, modified)*
- CLC/TS 61496-2:2006, *Safety of machinery — Electro-sensitive protective equipment — Part 2: Particular requirements for equipment using active opto-electronic protective devices (AOPDs) (IEC 61496-2:2006)*
- 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 movable 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, movable sources in reverberant fields — Part 2: Methods for special reverberant 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: Measurements 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 the work station and at other specified positions — Survey method in situ (ISO 11202:1995)*
- EN ISO 11204:1995, *Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at the work station and at other specified positions — Method requiring environmental corrections (ISO 11204:1995)*

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

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 13849-1:2006, *Safety of machinery — Safety-related parts of control 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)*

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

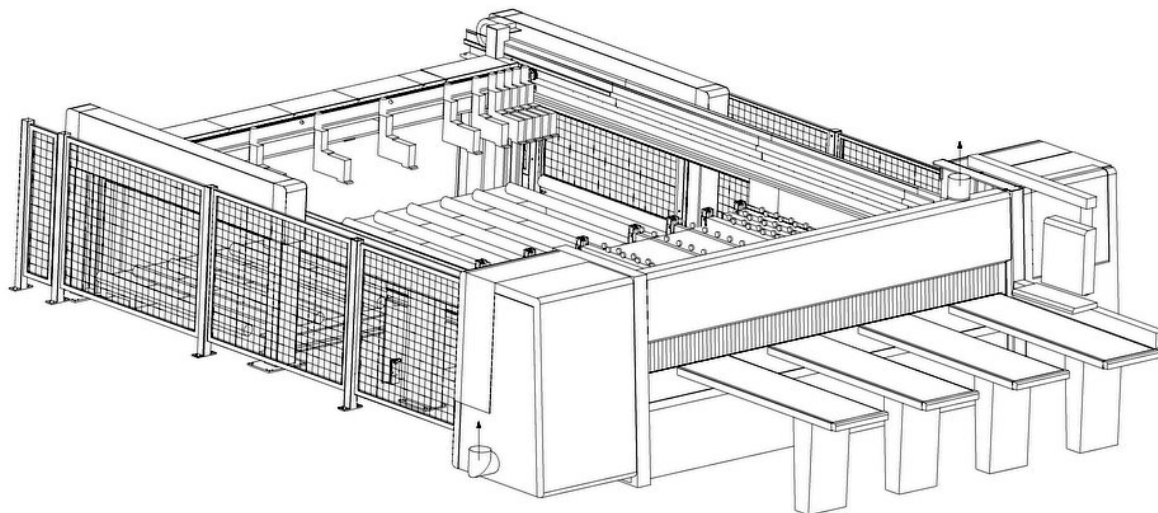
3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100-1:2003 and the following apply.

3.1**horizontal beam panel sawing machines**

machine fitted with one travelling saw unit per cutting line incorporating one or more circular saw blades which is designed for cutting panels. The workpiece is supported in the horizontal plane and mechanically positioned by a panel pusher for the cuts and held during cutting in position by a pressure beam. The cutting stroke is power driven. Before the cutting stroke commences, the saw blade is automatically raised/lowered and is retracted or out of operation for the return stroke. The cut takes place only in a single straight line (examples see Figures 1 a), 1 b) and 1 c)). The workpiece is loaded manually and / or by means of a powered panel loading device and manually or mechanically unloaded. The machine may have any of the following main features:

- a) a side pressure device;
- b) the facility for scoring;
- c) the facility for cutting post-formed / soft-formed edge pre-cutting;
- d) a panel turning device;
- e) a pushing out device;
- f) pneumatic clamping of the saw blade;
- g) a powered panel loading device;
- h) additional cutting line(s) (before front cutting line) located inside the machine e.g. for longitudinal and / or head cut (see Figure 2 and 3.18, 3.19);
- i) workpiece vacuum clamping as part of a panel turning device or a panel loading device.

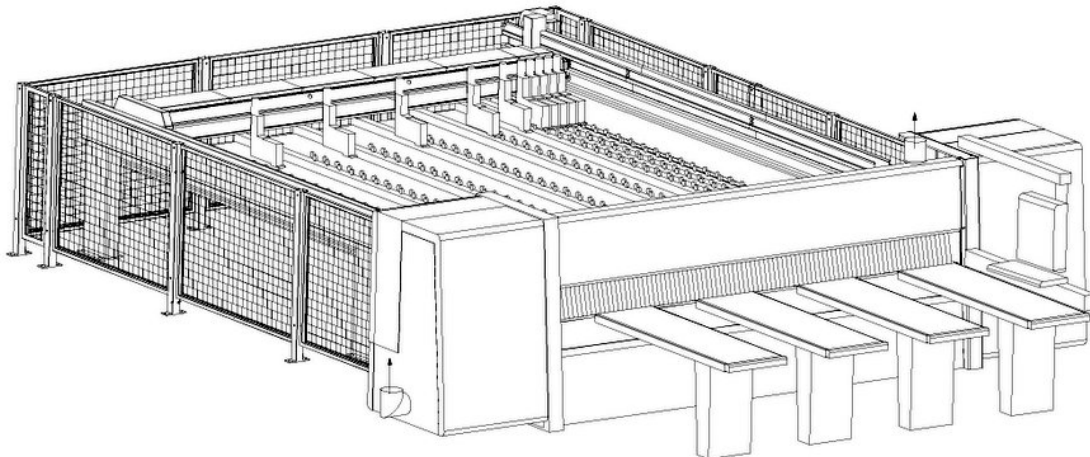


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Figure 1 a) — Example of a horizontal beam panel saw with panel loading from the rear side by a powered loading device and with fixed distance guarding and light barrier

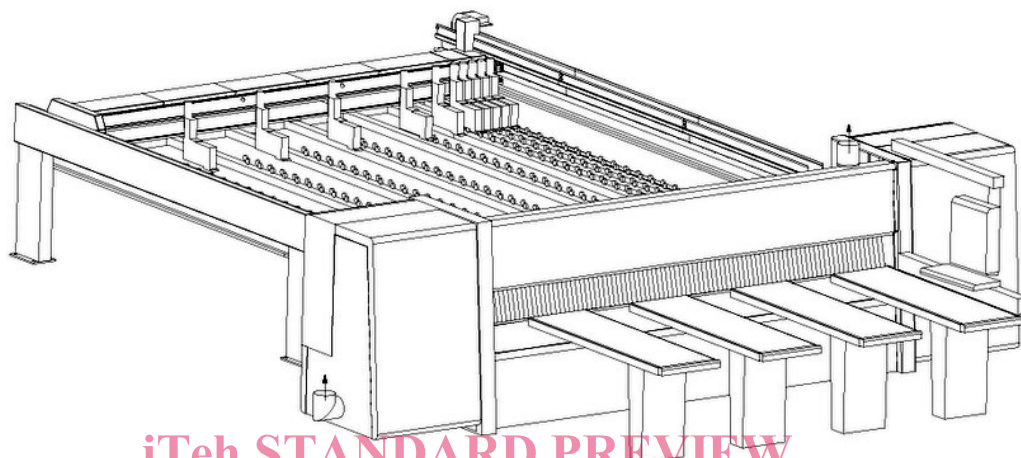


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Figure 1 b) — Example of a horizontal beam panel saw with panel loading from the front side and with fixed distance guarding



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Figure 1 c) — Example of a horizontal beam panel saw with panel loading from the front and with individual safeguarding of hazardous points

Figure 1 — Examples of horizontal beam panel saws