



SLOVENSKI STANDARD SIST EN 1870-5:2003

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Varnost lesnoobdelovalnih strojev - Krožne žage - 5. del: Delovne mize za krožno žago/podmizni čelilniki in stroji za prečni prerez

Safety of woodworking machines - Circular sawing machines - Part 5: Circular sawbenches/up-cutting cross-cut sawing machines

Sicherheit von Holzbearbeitungsmaschinen - Kreissägemaschinen - Teil 5: Kombinierte Tischkreissägemaschinen/von unten schneidende Kappsägemaschinen

Sécurité des machines pour le travail du bois - Machines à scier circulaires - Partie 5: Scies circulaires combinées a table et a coupe transversale ascendante

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25.080.60	Strojne žage	Sawing machines
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EUROPEAN STANDARD

EN 1870-5

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Safety of woodworking machines - Circular sawing machines - Part 5: Circular sawbenches/up-cutting cross-cut sawing machines

Sécurité des machines pour le travail du bois - Machines à
scier circulaires - Partie 5: Scies circulaires combinées à
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Kreissägemaschinen - Teil 5: Kombinierte
Tischkreissägemaschinen/von unten schneidende
Kappsägemaschinen

This European Standard was approved by CEN on 8 November 2001.

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 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 Management Centre 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, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 1870-5:2002) has been prepared by Technical Committee 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 October 2002, and conflicting national standards shall be withdrawn at the latest by October 2002.

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.

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

Annexes A, B, C, D and E are normative and Annexes F, G and ZA are informative.

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 292-1:1991 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

EN 1870-5:2002 (E)**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. This European Standard 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 sawbenches/up-cutting cross-cut sawing machines.

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.

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

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1 Scope

This European Standard specifies the requirements and/or the measures to remove the hazards and limit the risk on circular sawbenches/up-cutting cross-cut sawing machines, 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.

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 covers the hazards relevant to these machines as stated in clause 4.

For Computer Numerically Controlled (CNC) machines this European Standard does not cover hazards related to Electro-Magnetic Compatibility (EMC).

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

NOTE Circular sawbenches are dealt with in EN 1870-1:1999.

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 (including amendments).

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

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EN 60204-1:1992	<i>Safety of machinery - Electrical equipment of machines - Part 1: General requirements (IEC 60204-1:1992, modified)</i>
EN 60529	<i>Degree of protection provided by enclosures (IP code) (IEC 60529:1989)</i>
EN 60825-1	<i>Safety of laser products - Part 1: Equipment classification, requirements and users guide (IEC 60825-1:1993)</i>
EN 60947-4-1	<i>Low voltage switchgear and control gear - Part 4: Contactors and motor starters - Section 1: Electromechanical contactors and motor starters (IEC 60947-4-1:1990)</i>
EN 60947-5-1:1997	<i>Low voltage switchgear and control gear - Part 5: Control circuit devices and switching elements - Section 1: Electromechanical control circuit devices (IEC 60947-5-1:1990)</i>
EN 61029-1:1995	<i>Safety of transportable motor operated electric tools - Part 1: General requirements (IEC 1029-1:1990 modified)</i>
EN ISO 3743-1	<i>Acoustics - Determination of sound power levels of noise sources - Engineering methods for small, moveable sources in reverberant fields - Part 1: Comparison method for hard wall test rooms (ISO 3743-1:1994)</i>
EN ISO 3743-2	<i>Acoustics - Determination of sound power levels of noise sources - Engineering methods for small, moveable sources in reverberant fields - Part 2: Method for special reverberation test rooms (ISO 3743-2:1994)</i>
EN ISO 3744	<i>Acoustics - Determination of sound power levels of noise sources using sound pressure engineering methods in an essentially free field over a reflecting plane (ISO 3744:1994)</i>
EN ISO 3746:1995	<i>Acoustics - Determination of sound power levels of noise sources using sound pressure - Survey method employing an enveloping measurement surface over a reflecting plane (ISO 3746:1995)</i>
EN ISO 4871:1996	<i>Acoustics - Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)</i>
EN ISO 9614-1	<i>Acoustics - Determination of sound power levels of noise sources using sound intensity - Part 1: Measurements at discrete points (ISO 9614-1:1993)</i>
EN ISO 11202:1995	<i>Acoustics - Noise emitted by machinery and equipment - Measurement method of emission sound pressure levels at the workstation and at other specified positions survey method in situ (ISO 11202:1995)</i>
EN ISO 11204:1995	<i>Acoustics - Noise emitted by machinery and equipment - Measurement of emission sound pressure levels at the workstation and at other specified positions - Method requiring environmental corrections (ISO 11204:1995)</i>
EN ISO 11688-1	<i>Acoustics - Recommended practice for the design of low noise machinery and equipment - Part 1: Planning (ISO/TR 11688-1:1995)</i>
ISO 3745	<i>Acoustics - Determination of sound power levels of noise sources - Precision methods for anechoic and semi-anechoic rooms</i>
ISO 7960:1995	<i>Airborne noise emitted by woodworking machine tools - Operating conditions for woodworking machines</i>
HD 21.1 S3	<i>Polyvinyl chloride insulated cables of rated voltages up to and including 450/750v - Part 1: General requirements</i>

HD 22.1 S3 *Rubber insulated cables of rated voltages up to and including 450/750v - Part 1: General requirements*

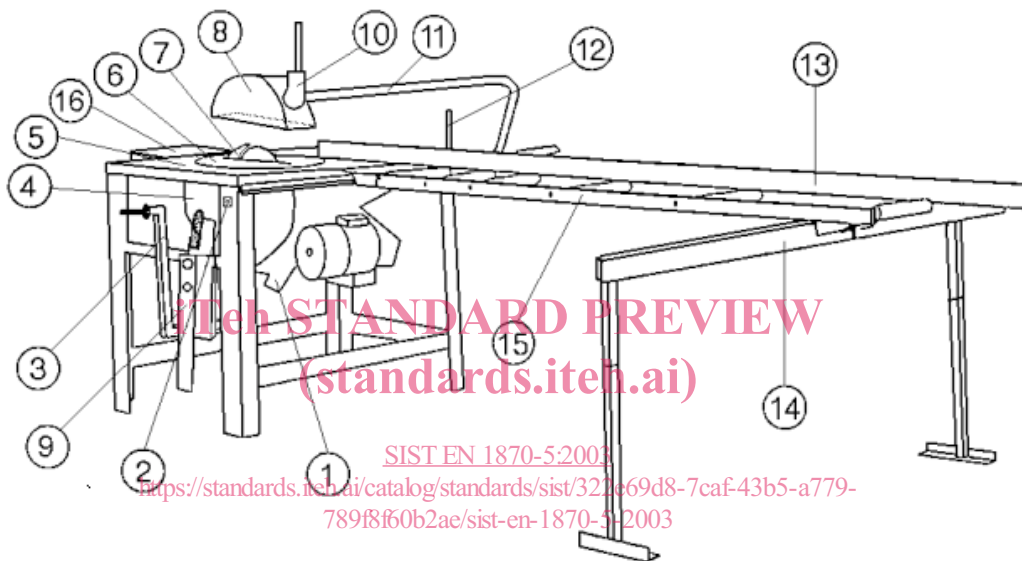
HD 22.4 S3 *Rubber insulated cables of rated voltages up to and including 450/750 V - Part 4: Cords and flexible cables (IEC 60245-4:1994, modified)*

3 Terms and definitions

For the purposes of this European Standard the following terms and definitions apply.

3.1 Terms

The main parts of the machine and their terminology are illustrated in Figure 1.



Key		
1	Under table extraction point	
2	Controls	
3	Elevation arm	
4	Fixed guard beneath table	
5	Table	
6	Rotating part of table	
7	Riving knife	
8	Sawblade guard	
9	Push stick	
10	Sawblade guard exhaust outlet	
11	Saw guard support	
12	Moveable roller table locking clamp	
13	Rip- and cross-cut fence	
14	Moveable roller table support	
15	Moveable roller table	
16	Extension table	

Figure 1 — Terminology

3.2 Definitions

3.2.1

circular sawbench/up-cutting cross-cut sawing machine

circular sawing machine with a single sawblade. The sawblade spindle has one fixed rotational speed. The saw unit is situated below the workpiece support (table) and the machine may be used in three modes :

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- a) for ripping, with the sawblade set parallel to the fence. The workpiece is fed manually or by a demountable power feed (see Figure 2); or
- b) for cross-cutting, with the saw unit set at 90° to the fence. The workpiece is fed manually by use of a sliding infeed table which moves at 90° to the fence (see Figure 3); or
- c) for cross cutting where the saw unit is raised manually e.g. by a hand lever, to cut through the stationary workpiece (see Figure 4)

In addition, in each mode the saw unit may be tilted about the horizontal axis of the saw spindle to produce an angled cut on the workpiece. In the cross-cutting modes the saw unit can be additionally rotated about a vertical axis to produce a bevelled cut.

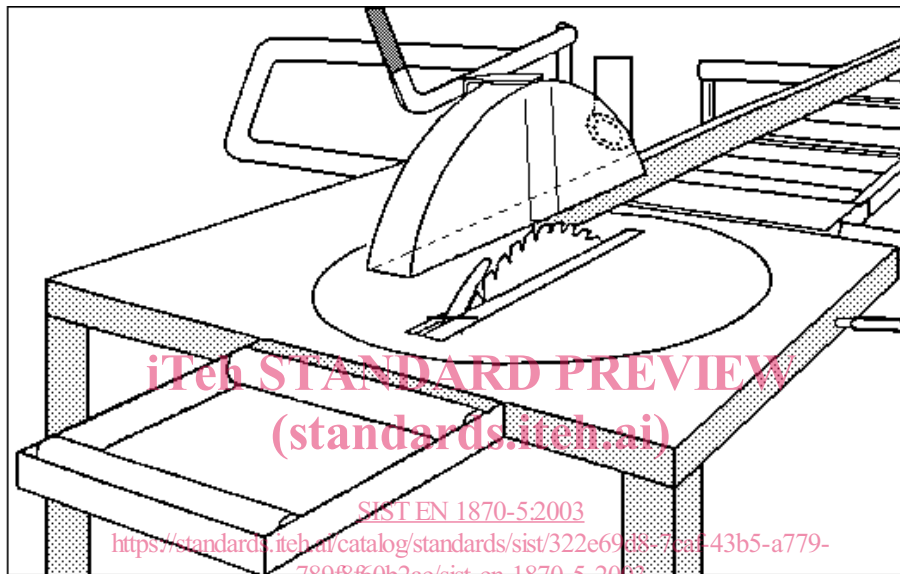


Figure 2 — Example of a machine in the ripping mode

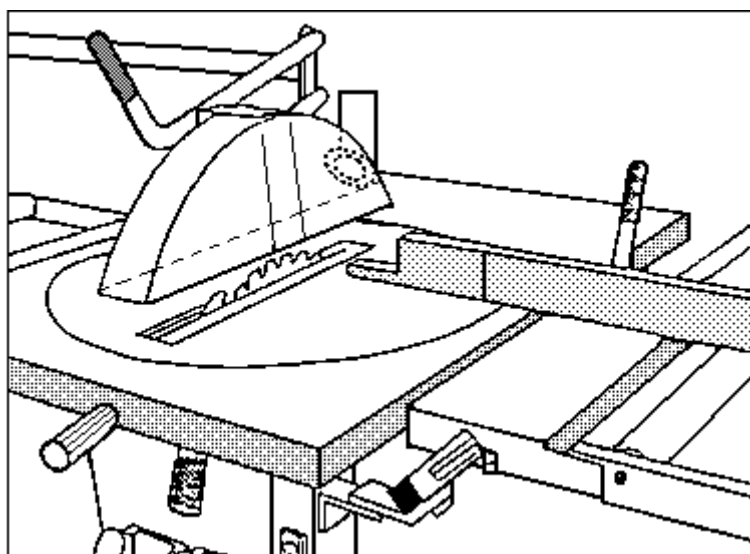


Figure 3 — Example of a machine in the cross-cutting mode with moved workpiece

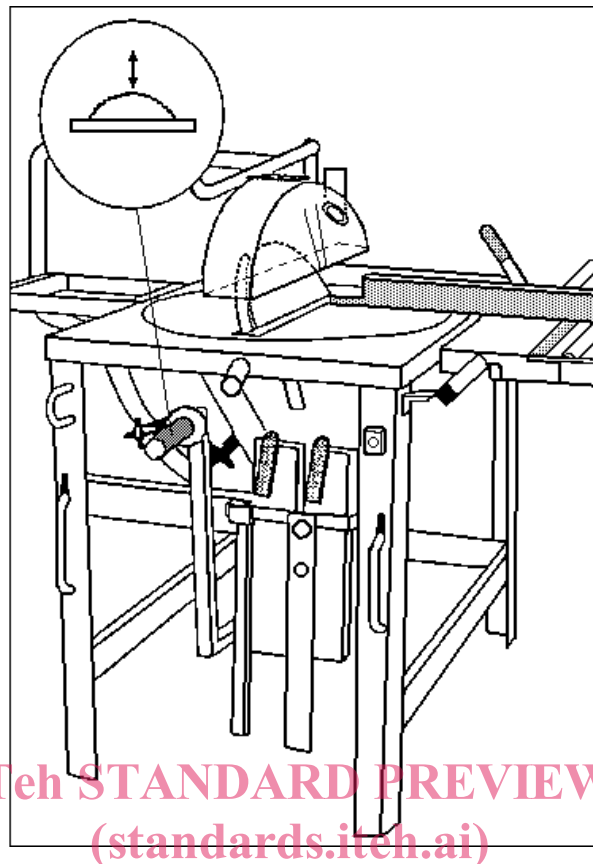


Figure 4 — Example of a machine in the cross-cutting mode with stationary workpiece

3.2.2

infeed table

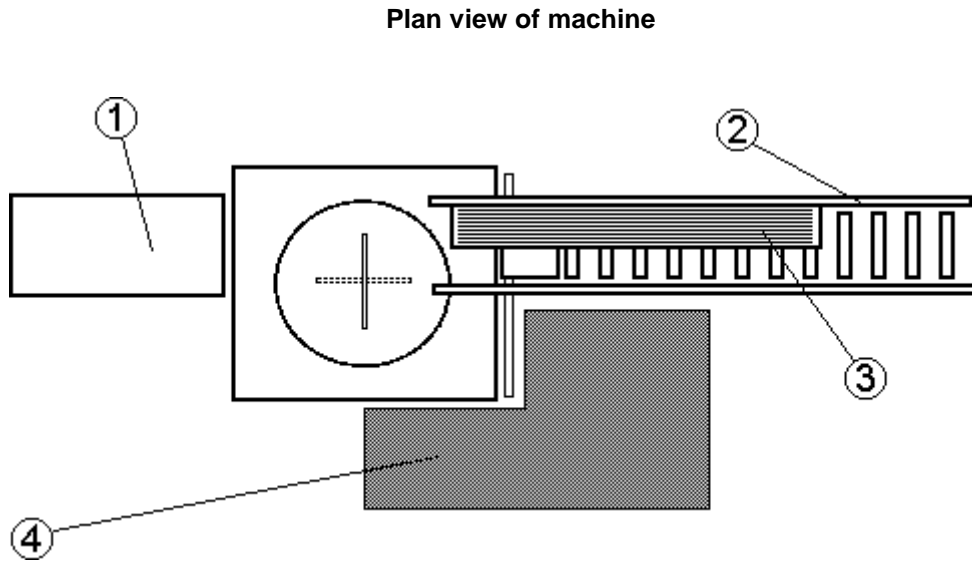
additional table at the infeed of the machine, used as :

- a) a support for the rip fence and to facilitate feeding the workpiece for ripping during use of the machine as a circular sawbench;
- b) a sliding table for cross-cutting with the sawblade unit in a fixed position;
- c) additional fixed position workpiece support during use of the machine as an up-cutting cross-cut sawing machine

3.2.3

operator position

that area occupied by the operator for use in the bench sawing mode and for use in both cross-cut sawing modes, as shown in Figure 5



Key	1	Outfeed table
	2	Infeed table
	3	Workpiece
	4	Operating area for ripping and cross-cutting modes

Figure 5 — Operating position
(standards.iteh.ai)

3.2.4 transportable 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

3.2.5 machine actuator

power mechanism used to effect motion of the machine

3.2.6 hand feed

manual holding and/or manual guiding of the workpiece (or of a machine element incorporating a tool). Hand feed includes the use of a hand operated carriage on which the workpiece is placed manually or clamped, and the use of a demountable power feed unit

NOTE The words in brackets are not applicable to this machine.

3.2.7 demountable 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

3.2.8 ejection

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

3.2.9 kickback

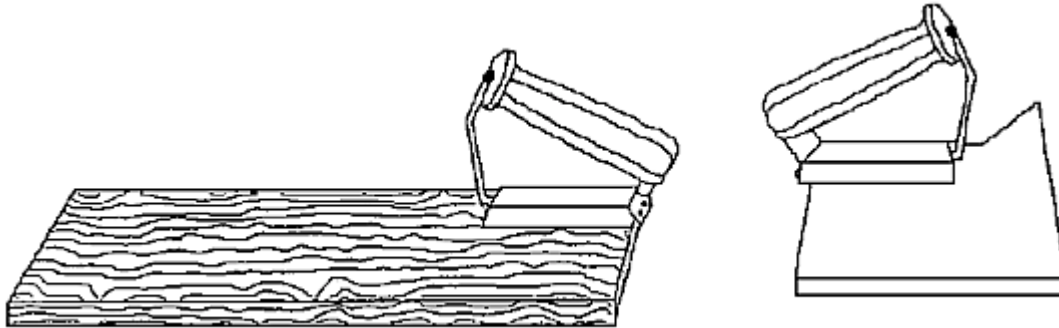
particular form of ejection and is describing the unexpected movement of the workpiece or parts of it or parts of the machine opposite to the direction of feed during processing

3.2.10 anti-kickback device

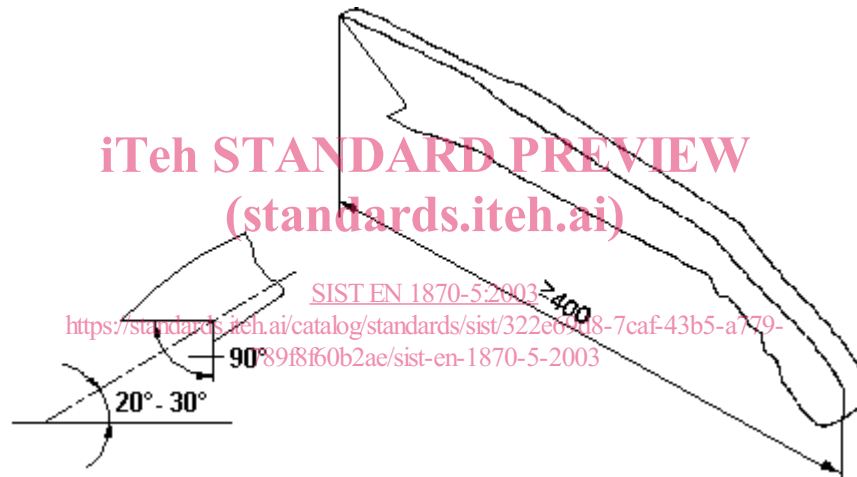
device which either reduces the possibility of kickback or arrests the motion during kickback of the workpiece or parts of it or parts of the machine

3.2.11**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. see Figure 6



b) — Example of push block



a) — Example of push stick

Figure 6 — Examples of a push stick and push block

3.2.12**run-down time**

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

3.2.13**confirmation**

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

4 List of significant hazards

This European Standard deals with all hazards listed and relevant to the machines as defined in the scope :

- for significant hazards by defining safety requirements and/or measures or by reference to relevant type B standards;
- or hazards which are not significant e.g. general, minor or secondary hazards by reference to relevant type A or B standards, especially EN 292-1:1991 and EN 292-2:1991/A1:1995.