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Safety of woodworking machines - Circular sawing machines - Part 8: Single blade edging circular rip sawing machines with power driven saw unit and manual loading and/or unloading

Sicherheit von Holzbearbeitungsmaschinen - Kreissägemaschinen - Teil 8: Einblattbesäum- und Leistenkreissägemaschinen mit kraftbetätigtem Sägeaggregat und Handbeschickung und/oder Handentnahme

SÉCURITÉ DES MACHINES POUR LE TRAVAIL DU BOIS - Machines à scier circulaires - Partie 8: Déligneuses monolames à déplacement mécanisé du groupe de sciage et à chargement manuel et/ou déchargement manuel

Ta slovenski standard je istoveten z: EN 1870-8:2001+A1:2009

ICS:

25.080.60	Strojne žage	Sawing machines
79.120.10	Lesnoobdelovalni stroji	Woodworking machines

SIST EN 1870-8:2002+A1:2009 en

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EUROPEAN STANDARD
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EN 1870-8:2001+A1

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ICS 79.120.10

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English Version

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

Sécurité des machines pour le travail du bois - Machines à
scier circulaires - Partie 8: Déligneuses monolames à
déplacement mécanisé du groupe de sciage et à
chargement manuel et/ou déchargement manuel

Sicherheit von Holzbearbeitungsmaschinen -
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Leistenkreissägemaschinen mit kraftbetätigtem
Sägeaggregat und Handbeschickung und/oder
Handentnahme

This European Standard was approved by CEN on 30 September 2001 and includes Amendment 1 approved by CEN on 30 July 2009.

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.







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COMITÉ EUROPÉEN DE NORMALISATION
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EN 1870-8:2001+A1:2009 (E)**Foreword**

This document (EN 1870-8:2001+A1:2009) has been prepared by 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 March 2010, and conflicting national standards shall be withdrawn at the latest by March 2010.

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 includes Amendment 1, approved by CEN on 2009-07-30.

This document supersedes EN 1870-8:2001.

The start and finish of text introduced or altered by amendment is indicated in the text by tags $\boxed{A_1}$ $\boxed{A_1}$.

$\boxed{A_1}$ 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 the Machinery Directive.

For relationship with EU Directive(s), see informative Annexes ZA and ZB, which are integral parts of this document. $\boxed{A_1}$

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

The annexes A, B, C, D and E are normative and $\boxed{A_1}$ Annexes ZA and ZB $\boxed{A_1}$ are informative.

This standard includes a Bibliography.

$\boxed{A_1}$ 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: Multi-blade 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 (manual radial arm saws) ^{A1}

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 ^{A1} EN ISO 12100-1:2003 ^{A1} 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 1870-8:2001+A1:2009 (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 [A1](#) EN ISO 12100-1:2003 [A1](#).

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 single blade edging circular rip sawing machines with power driven saw unit and manual loading and/or unloading.

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

Common requirements for tooling are given in [A1](#) EN 847-1:2005 [A1](#).

1 Scope

[A1](#) This document deals with all significant hazards, hazardous situations and events as listed in Clause 4 which are relevant to single blade edging circular rip sawing machines with power driven saw unit and manual loading and/or unloading, hereinafter referred to as “machines”, designed to cut solid wood, chipboard, fibreboard and plywood. [A1](#)

[A1](#) *deleted text* [A1](#)

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

This European Standard applies to machines where the workpiece is stationary, the vertical and horizontal movements of the saw unit are power driven, and where the machine is provided with workpiece clamping the workpiece may or may not be clamped during cutting.

This European Standard does not apply to machines:

- where the workpiece is fed to the sawblade during cutting;
- designed specifically for cutting veneers;
- provided with a device situated behind the line of cut, which moves in a direction parallel to the line of cut, for automatically unloading the workpiece during the return of the saw unit to the rest position.

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

2 Normative references

[A1](#) 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](#)

[A1](#) *deleted text* [A1](#)

EN 349:1993, *Safety of machinery — Minimum \square_{A1} gaps \square_{A1} to avoid crushing of parts of the human body*

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\square_{A1} EN 614-1:2006, *Safety of machinery — Ergonomic design principles — Part 1: Terminology and general principles* \square_{A1}

\square_{A1} EN 847-1:2005 \square_{A1} , *Tools for woodworking — Safety requirements — Part 1: Milling tools, circular sawblades*

\square_{A1} 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* \square_{A1}

\square_{A1} deleted text \square_{A1}

EN 982:1996, *Safety of machinery — Safety requirements for fluid power systems and components — Hydraulics*

EN 983:1996, *Safety of machinery — Safety requirements for fluid power systems and their components — Pneumatics*

\square_{A1} 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* \square_{A1}

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

\square_{A1} 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* \square_{A1}

\square_{A1} EN 60204-1:2006 \square_{A1} , *Safety of machinery — Electrical equipment of machines — Part 1: General requirements* \square_{A1} (IEC 60204-1:2005, modified) \square_{A1}

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

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

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EN 60825-1:2007, *Safety of laser products — Part 1: Equipment classification and requirements (IEC 60825-1:2007)* ^{A1}

EN 60947-4-1:2001, *Low-voltage switchgear and controlgear — Part 4-1: Contactors and motor-starters — Electromechanical contactors and motor-starters (IEC 60947-4-1:2000)* ^{A1}

EN 60947-5-1:2004, *Low voltage switchgear and control gear — Part 5-1: Control circuit devices and switching elements — Electromechanical control circuit devices (IEC 60947-5-1:2003)* ^{A1}

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 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)* ^{A1}

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 reverberation test rooms (ISO 3743-2:1994)* ^{A1}

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, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Precision methods for anechoic and hemi-anechoic rooms (ISO 3745:2003)* ^{A1}

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)* ^{A1}

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 work station and at other specified positions — Survey method in situ (ISO 11202:1995)* ^{A1}

EN ISO 11204:1995, *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, *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)* ^{A1}

EN ISO 13849-1:2008, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2006)* ^{A1}

EN ISO 13850:2008, *Safety of machinery — Emergency stop — Principles for design (ISO 13850:2006)* ^{A1}

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

ISO 286-2:1988, *ISO system of limits and fits — Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts*

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HD 21.1 S4:2002, *Cables of rated voltages up to and including 450/750 V and having thermoplastic insulation — Part 1: General requirements*

HD 22.1 S4:2002, *Cables of rated voltages up to and including 450/750 V and having cross-linked insulation — Part 1: General requirements*

3 Terms and definitions

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

3.1 Terms

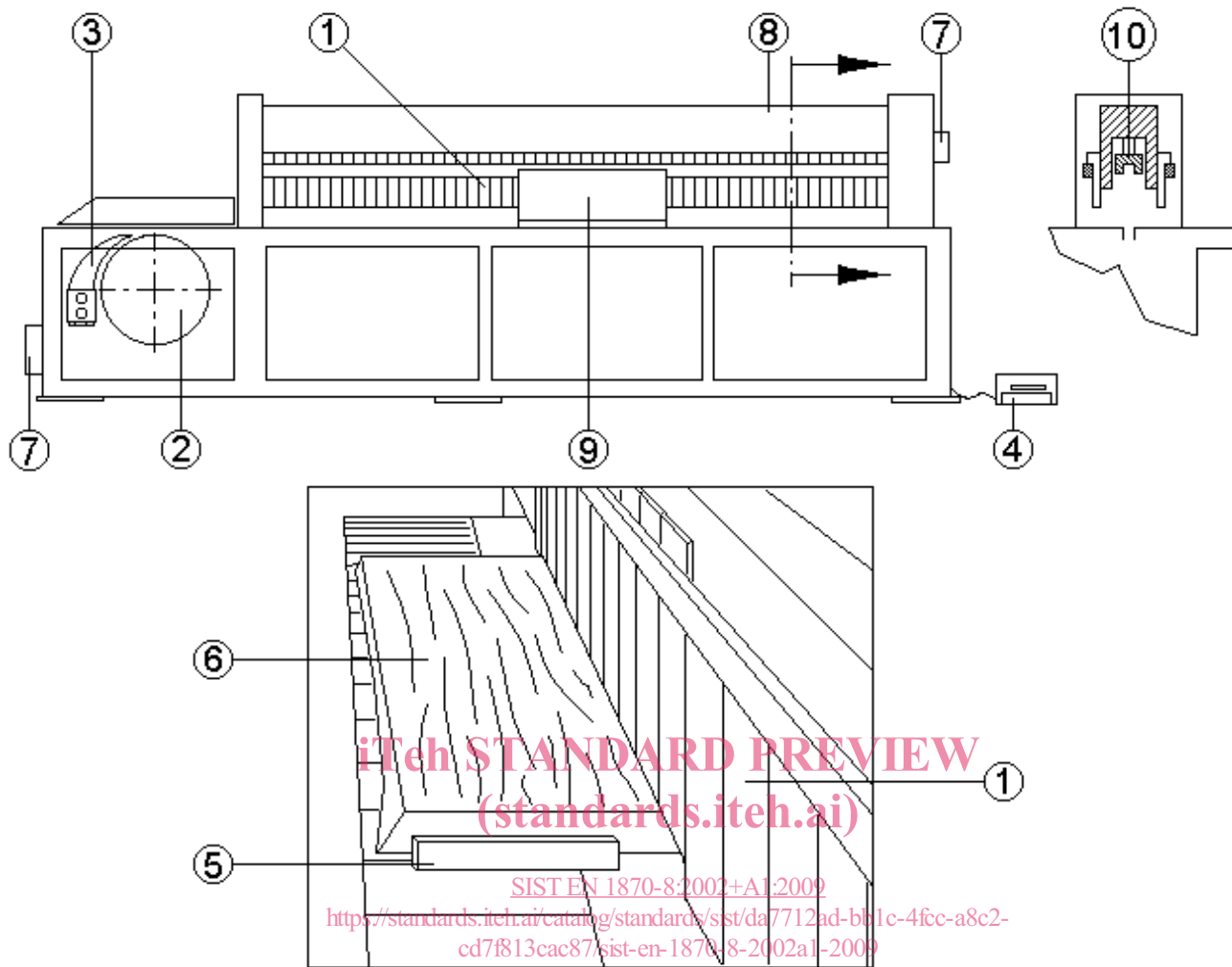
The main parts of manually loaded and/or unloaded single blade edging circular rip sawing machines with power driven saw unit and their terminology are illustrated in Figure 1.

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- Key**
- | | |
|----|--|
| 1 | Sectional safety curtain |
| 2 | Sawblade in rest position |
| 3 | Riving knife |
| 4 | Foot-pedal |
| 5 | Workpiece end stop |
| 6 | Workpiece |
| 7 | Extraction outlet |
| 8 | Sectional safety curtain support |
| 9 | Front deterring/impeding device (on machines with raising and lowering of the saw unit at alternative positions) |
| 10 | Workpiece clamping device (pressure beam) (optional) |

Figure 1 — Terminology

3.2 Definitions

3.2.1

single blade edging circular rip sawing machines with power driven saw unit and manual loading and/or unloading

machine where the workpiece is supported in the horizontal plane during cutting. The saw unit is mounted below the workpiece and the cutting stroke is power driven. The sawblade is automatically raised through the slot in the worktable and is retracted from the workpiece for the return stroke. The machine is designed to cut against the feed in a single straight line only (see Figure 1)

The machine may have any of the following features:

- a) adjustment of the height of the saw unit;
- b) the facility to tilt the sawblade for angled cutting;
- c) limitation of the cutting stroke length;
- d) workpiece clamping;
- e) the facility to vary the feed speed;
- f) powered movement of the fence;
- g) the facility to allow raising and lowering of the saw unit at alternative positions;
- h) the facility for multiple cutting.

3.2.2

workpiece end stop

adjustable end stop to hold the workpiece in the direction of the line of cut (see Figure 1)

3.2.3

saw unit rest position

position to which the saw unit returns at the end of each cutting cycle (see Figure 1)

3.2.4

sectional safety curtain

device to prevent inadvertent access to the sawblade during the cutting stroke (see Figure 1)

3.2.5

workpiece clamping device

optional device which extends over the full cutting length of the machine. Clamping can be achieved either by a pressure beam between the sectional safety curtains (see Figure 1) or the sectional safety curtain support is designed to also be the clamping device

3.2.6

multiple cutting

where the fence position is under numeric control to allow several cutting strokes for the same workpiece

3.2.7

machine actuator

power mechanism used to effect motion of the machine

3.2.8

integrated feed

feed mechanism for the workpiece or tool which is integrated with the machine and where the workpiece or machine element with incorporated tool are held and controlled mechanically during the machining operation

3.2.9

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 2

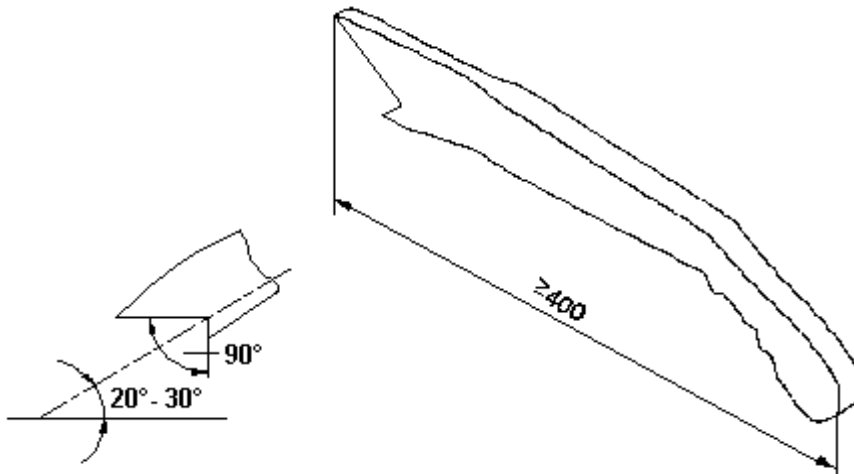


Figure 2a) — Example of push stick



Figure 2b) — Example of push block

Figure 2 — Examples of a push stick and push block

3.2.10**ejection**

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

3.2.11**run-up time**

time elapsed from the actuation of the start control device until the spindle reaches the intended speed

3.2.12**run-down time**

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

3.2.13**manual loading of edging circular rip saws**

operation, where the operator positions the workpiece on the workpiece support at the cutting position i.e. there is no intermediate loading device to receive and transfer the workpiece from the operator to the cutting position

3.2.14**manual unloading of edging circular rip saws**

operation, where the operator removes the workpiece from the workpiece support at the cutting position, i.e. there is no intermediate unloading device to transfer the workpiece from the cutting position to the operator

3.2.15**speed range**

speeds within which the saw spindle or integrated feed are designed to operate

3.2.16**information from the supplier**

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

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4 **information from the supplier** List of significant hazards

This clause contains all significant hazards, hazardous situations and events (see EN 1050:1996) as far as they are dealt with in this document, identified by risk assessment as significant for the machines as defined in the scope and which require action to eliminate or reduce the risk. This document deals with these significant hazards by defining safety requirements and/or measures or by reference to relevant standards.

These hazards are listed in Table 1 in accordance with Annex A of EN 1050:1996.

Table 1 — List of significant hazards

No	Hazards, hazardous situations and hazardous events	EN ISO 12100		Relevant sub-clause of this document
		Part 1: 2003	Part 2: 2003	
1	Mechanical hazards related to:			
	- machine parts or workpieces:			
	a) shape;	4.2	4.2.1, 4.2.2, 5	5.1.11, 5.2.3, 5.2.5, 5.2.7, 5.2.8, 5.2.9
	b) relative location;			5.1.2, 5.1.3, 5.2.5, 5.2.7, 5.2.8
	c) mass and stability (potential energy of elements which may move under the effect of gravity)			5.2.6
	d) mass and velocity (kinetic energy of elements in controlled or uncontrolled motion);			5.2.6