



# SLOVENSKI STANDARD

## SIST EN 861:2008+A2:2012

01-september-2012

Nadomešča:

SIST EN 861:2008+A1:2009

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**Varnost lesnoobdelovalnih strojev - Kombinirani in debelinski skobeljni stroji  
(vključno z dopolnili do A2)**

Safety of woodworking machines - Surface planing and thicknessing machines

Sicherheit von Holzbearbeitungsmaschinen - Kombinierte Abricht- und  
Dickenhobelmaschinen

Sécurité des machines pour le travail du bois - Machines combinées à raboter et à  
dégauchir

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**Ta slovenski standard je istoveten z: EN 861:2007+A2:2012**

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25.080.25 Stroji za ploščinsko obdelavo Planing machines

79.120.10 Lesnoobdelovalni stroji Woodworking machines

**SIST EN 861:2008+A2:2012**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 861:2007+A2**

June 2012

ICS 79.120.10

Supersedes EN 861:2007+A1:2009

English Version

**Safety of woodworking machines - Surface planing and  
thicknessing machines**

Sécurité des machines pour le travail du bois - Machines  
combinées à raboter et à dégauchir

Sicherheit von Holzbearbeitungsmaschinen - Kombinierte  
Abricht- und Dickenhobelmaschinen

This European Standard was approved by CEN on 10 May 2007 and includes Amendment 1 approved by CEN on 16 July 2009 and Amendment 2 approved by CEN on 20 May 2012.

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## EN 861:2007+A2:2012 (E)

## Foreword

This document (EN 861:2007+A2:2012) 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of an identical text or by endorsement, at the latest by December 2012, and conflicting national standards shall be withdrawn at the latest by December 2012.

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 2009-07-16, Corrigendum 1, issued by CEN on 2008-10-29 and Amendment 2, issued by CEN on 2012-05-20.

This document supersedes A2 EN 861:2007+A1:2009 A2.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 A1 and A2 A2.

The modifications of the related CEN Corrigendum have been implemented at the appropriate places in the text and are indicated by the tags AC AC.

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.

A2 For relationship with EU Directive(s), see informative Annexes ZA, which is an integral part of this document. A2



Organisation contributing to the preparation of the European Standard include the European Association of Manufacturer of Woodworking Machines "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 A2 EN ISO 12100:2010 A2 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, Croatia, 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, Turkey and the United Kingdom.

## 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 stated 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 surface planing and thicknessing machines. They are 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+A1:2007 .

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## EN 861:2007+A2:2012 (E)

## 1 Scope

This document <sup>A1</sup> specifies all significant <sup>A1</sup> hazards, hazardous situation and events as listed in Clause 4 relevant to stationary and displaceable surface planing and thicknessing machines with an integrated feed in thicknessing mode, (with or without demountable power feed unit in planing mode) and with manual loading and unloading of the work-piece, hereinafter referred to as "machines". The cutterblock is fixed in position and for thicknessing an integrated feed is provided. The machines are designed to cut solid wood, chipboard, fibreboard and plywood when they are used as intended and under the conditions foreseen by the manufacturer <sup>A2</sup> including reasonably foreseeable misuse <sup>A2</sup>.

<sup>A2</sup> Machines which are designed to work wood based materials may also be used for thicknessing hardened plastic materials with similar physical characteristics as wood. <sup>A2</sup>

This document does not deal with any hazards which result from the attachment of an optional mortising unit. These hazards are covered by <sup>A2</sup> EN 940:2009+A1:2012 <sup>A2</sup>.

This document does not apply to:

- a) machines set up on a bench or a table similar to a bench, which are intended to carry out work in a stationary position, capable of being lifted by one person by hand;

NOTE 1 Transportable motor-operated electric tools are covered by the requirements of <sup>A2</sup> EN 61029-1:2009 <sup>A2</sup> together with <sup>A2</sup> EN 61029-2-3:2011 <sup>A2</sup>.

- b) surface planing and thicknessing machines where the cutterblock is adjustable for depth of cut setting in thicknessing mode;
- c) machines where the conversion from planing to thicknessing mode or vice versa is achieved by mounting or demounting parts/units;
- d) machines where surfacing and thicknessing can be performed at the same time.

This document is not applicable to surface planing and thicknessing machines which are manufactured before the date of its publication as EN.

NOTE 2 Machines covered by this document are listed under A.5 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.

<sup>A1</sup> *deleted text* <sup>A1</sup>

<sup>A2</sup> EN 847-1:2005+A1:2007 <sup>A2</sup>, *Tools for woodworking — Safety requirements — Part 1: Milling tools, circular saw blades*

<sup>A2</sup> *deleted text* <sup>A2</sup>

<sup>A2</sup> EN 1005-2:2003+A1:2008 <sup>A2</sup>, *Safety of machinery — Human physical performance — Part 2: Manual handling of machinery and component parts of machinery*

<sup>A2</sup> EN 1005-4:2005+A1:2008 <sup>A2</sup>, *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 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<sup>1)</sup>, *Low-voltage switchgear and controlgear assemblies — Part 1: Type-tested and partially type-tested assemblies (IEC 60439-1:1999)*

EN 60529:1991<sup>2)</sup>, *Degree of protection provided by enclosures (IP code) (IEC 60529:1989)*

EN 61496-1:2004, *Safety of machinery — Electro-sensitive protective equipment — Part 1: General requirements and tests (IEC 61496-1:2004, modified)*

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)*

EN ISO 3743-2:2009, *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 3744:2010, *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 3745:2009, *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 3746:2010, *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)*

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

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

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EN ISO 4871:2009 <sup>A2</sup>, *Acoustics — Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)*

EN ISO 9614-1:2009 <sup>A2</sup>, *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 <sup>A2</sup>, *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)* <sup>A2</sup>

EN ISO 11204:2010 <sup>A2</sup>, *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)* <sup>A2</sup>

EN ISO 11688-1:2009 <sup>A2</sup>, *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)* <sup>A2</sup>

EN ISO 13849-1:2008 <sup>A1</sup><sup>3)</sup>, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2006)*

EN ISO 13849-2:2008 <sup>A1</sup>, *Safety of machinery — Safety-related parts of control systems — Part 2: Validation (ISO 13849-2:2003)*

EN ISO 13857:2008, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857:2008)* <sup>A1</sup>

ISO 7568:1986, *Woodworking machines — Thickness planing machines with rotary cutterblock for one-side dressing — Nomenclature and acceptance conditions*

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

HD 22.4 S4:2004; *Cables of rated voltages up to and including 450/750 V and having crosslinked insulation — Part 4: Cords and flexible cables*

### 3 Terms and definitions

#### 3.1 General

For the purposes of this document, the terms and definitions given in EN ISO 12100:2010 <sup>A2</sup> and the following apply:

#### 3.2 Definitions

##### 3.2.1



##### **surface planing and thicknessing machine**

combined machine designed to plane a surface of a work-piece and to give it in a following operation a set thickness by means of a horizontally rotating cutterblock, a cylindrical shaped complex tool equipped with blades with horizontal straight cutting line that cuts while rotating (see for a description of the complex tool also EN 847-1:2005+A1:2007 <sup>A2</sup>)

<sup>3)</sup> EN ISO 13849-1:2008 replaces EN 954-1:1997. <sup>A2</sup>

NOTE The work-piece is fed into the machine against the direction of the cut.

When surfacing, the work-piece is passed over the cutterblock located between two tables which are used to position and support the work-piece and the lower surface is planed. The infeed table of the surface planing unit is adjustable in height.

 When thickening, both of the surfacing tables can be raised.  The work-piece rests on the thickening table the distance between it and the cutting circle diameter is adjustable. The upper surface of the work-piece is planed

### 3.2.2

#### **thickening table**

table used to support the work-piece during thickening at the machine which may comprise an assembly of rollers, belts or other fixed or moving mechanical elements

### 3.2.3

#### **surface planing tables**

tables in front and behind the cutterblock used to support the work-piece at the machine during planing the lower surface

### 3.2.4

#### **integrated feed**

feed mechanism for the work-piece which is integrated with the machine and where the work-piece is held and controlled mechanically during the machining operation

### 3.2.5

#### **loading of a surface planing and thickening machine in the thickening mode**

manual placing of the work-piece on the thickening table at the infeed side with the following presentation to the integrated feed device

### 3.2.6

#### **stationery 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

### 3.2.7

#### **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

### 3.2.8

#### **safety appliance**

additional device which is not an integral part of the machine but which assists the operator in the safe feeding of the work-piece e.g. push block or push stick

### 3.2.9

#### **demountable power feed unit**

feed mechanism which is mounted on the machine so that it can be moved from its working position to a rest position and vice versa without the use of a spanner or similar additional device

### 3.2.10

#### **kickback**

particular form of ejection describing the uncontrolled movement of the work-piece or parts of it or parts of the machine opposite to the direction of feed during processing

### 3.2.11

#### **anti-kickback device**

device which either reduces the possibility of kickback or arrests the motion during kickback of the work-piece parts of it

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## 3.2.12

**run-down time**

elapsed time from the actuation of the stop control device to spindle stand still

## 3.2.13

**run-up time**

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

## 3.2.14

**information from the supplier**

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

## 3.2.15

**operator position**

position in which the operator stands to feed the work-piece to the tool

## 3.2.16

**machine actuator**

power mechanism used to effect motion of the machine

**A2** deleted text **A2**

**A2** 3.2.17**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 Firmware or system software are examples of embedded software (EN ISO 13849-1:2008, 3.1.37). **A2**

NOTE 2 Manufacturer means manufacturer of the system.  
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EXAMPLE The operating system of a speed monitoring device.

**A2** 3.2.18**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

[EN ISO 13849-1:2008, 3.1.36] **A2**

**A2** 3.2.19 **A2****safety related part of a control system (SRP/CS)**

part or subpart(s) of a control system that responds to **A2** safety related **A2** input signals and generates safety-related output signals


**A2** NOTE 1 **A2** 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). **A2** deleted text **A2**

**A2** NOTE 2 If monitoring systems are used for diagnostics, they are also considered as SRP/CS.

[EN ISO 13849-1:2008, 3.1.1] **A2**

**A2** 3.2.20**performance level PL**

discrete level used to specify the ability of safety-related parts of control systems to perform a safety function

[EN ISO 13849-1:2008, 3.1.23] 

### 3.3 Terms

The names of the main parts of the machine are shown in Figures 1 a) and 1 b).

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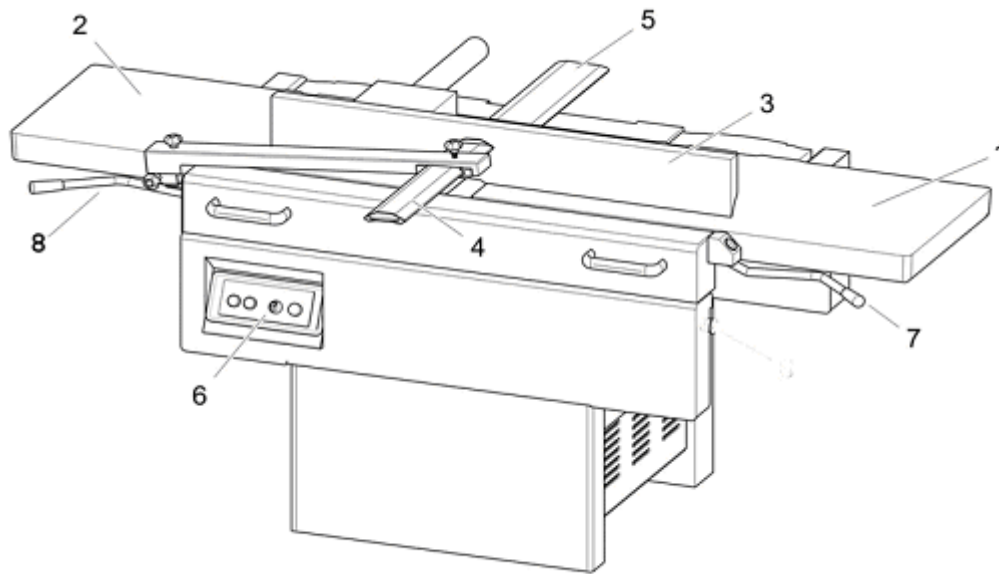


Figure 1 a) — Example of surface planing and thicknessing machine (set up for planing)

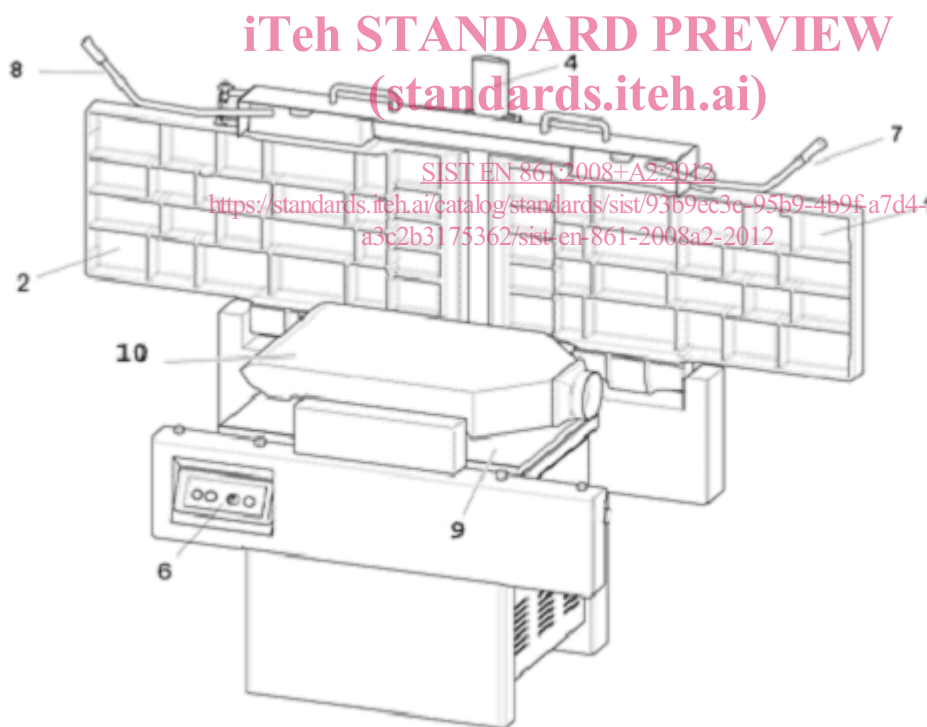
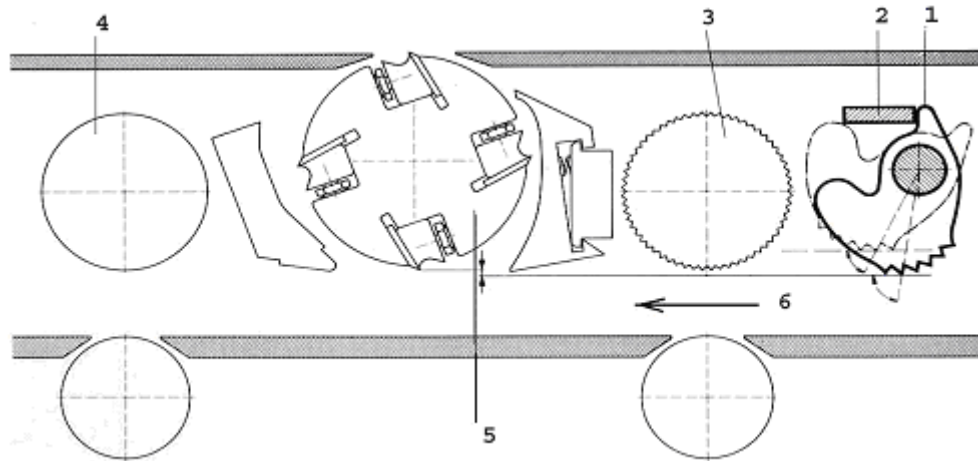


Figure 1 b) — Example of surface planing and thicknessing machine (set up for thicknessing)

**Key**

- |   |                      |    |                                |
|---|----------------------|----|--------------------------------|
| 1 | infeed table         | 6  | controls                       |
| 2 | outfeed table        | 7  | infeed table height adjustment |
| 3 | tiltable fence       | 8  | bridge guard adjustment        |
| 4 | bridge guard         | 9  | thicknessing table             |
| 5 | guard rear the fence | 10 | guard for thicknessing mode    |

Figure 1 — Example of surface planing and thicknessing machine



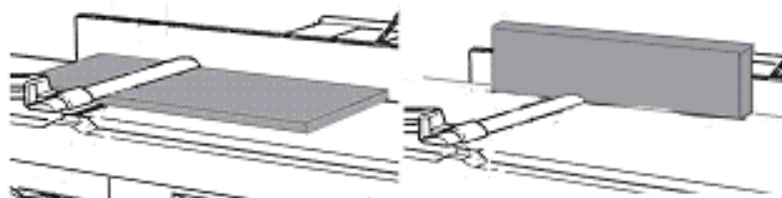
#### Key

- 1 anti kickback fingers
- 2 stop for the rotation of the finger
- 3 infeed roller
- 4 outfeed roller
- 5 cutterblock
- 6 direction of feed

**Figure 2 — Example of internal of a one side planing and thicknessing machine**  
(standards.iteh.ai)

The most usual working operations when using the machine in the surface planing mode are shown in Figure 3.

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**Figure 3 — Planing (left) and edging (right)**

## 4 List of significant hazards

This clause contains **[A<sub>1</sub>]** all significant **[A<sub>1</sub>]** hazards, hazardous situations and events (see **[A<sub>2</sub>]** EN ISO 12100:2010 **[A<sub>2</sub>]**), **[A<sub>2</sub>]** *deleted text* **[A<sub>2</sub>]** 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.

**[A<sub>2</sub>]** These hazards are listed in Table 1: **[A<sub>2</sub>]**.