



SLOVENSKI STANDARD
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Safety of woodworking machines - Tenoning machines - Part 3: Hand fed tenoning machines with sliding table for cutting structural timbers

Sicherheit von Holzbearbeitungsmaschinen - Zapfenschneid- und Schlitzmaschinen - Teil 3: Abbundmaschinen mit von Hand bewegtem Schiebetisch

Sécurité des machines à bois - Tenonneuses - Partie 3: Machines à avance manuelle et à table roulante pour la coupe des éléments de charpente de toit en bois

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Ta slovenski standard je istoveten z: **EN 1218-3:2001+A1:2009**

ICS:

79.120.10 Lesnoobdelovalni stroji Woodworking machines

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Safety of woodworking machines - Tenoning machines - Part 3: Hand fed tenoning machines with sliding table for cutting structural timbers

Sécurité des machines à bois - Tenonneuses - Partie 3:
Machines à avance manuelle et à table roulante pour la
coupe des éléments de charpente de toit en bois

Sicherheit von Holzbearbeitungsmaschinen -
Zapfenschneid- und Schlitzmaschinen - Teil 3:
Abbundmaschinen mit von Hand bewegtem Schiebetisch

This European Standard was approved by CEN on 30 September 2001 and includes Amendment 1 approved by CEN on 21 May 2009.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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EN 1218-3:2001+A1:2009 (E)**Foreword**

This document (EN 1218-3:2001+A1:2009) 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of an identical text or by endorsement, at the latest by December 2009, and conflicting national standards shall be withdrawn at the latest by December 2009.

This document includes Amendment 1, approved by CEN on 2009-05-21.

This document supersedes EN 1218-3:2001.

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

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).

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

$\boxed{A_1}$ EN 1218, *Safety of woodworking machines — Tenoning machines* consists of the following parts:

Part 1: Single end tenoning machines with sliding table

Part 2: Double end tenoning and/or profiling machines fed by chain or chains

Part 3: Hand fed tenoning machines with sliding table for cutting structural timbers

Part 4: Edge banding machines fed by chain(s)

Part 5: One side profiling machines with fixed table and feed rollers or fed by chain $\boxed{A_1}$

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

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

This standard includes a Bibliography.

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 $\boxed{A_1}$ EN ISO 12100-1:2003 $\boxed{A_1}$ 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.

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 ISO 12100-1:2003](#).

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 hand fed tenoning machines with sliding table for cutting structural timbers.

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

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

1 Scope

This document deals with all the significant hazards, hazardous situations and events as listed in Clause 4 which are relevant to hand fed tenoning machines with sliding table for cutting structural timbers, hereinafter referred to as "machines".

This European Standard does not apply to:

- machines where the tenon is produced by means of milling tools;
- machines designed for a tool spindle speed exceeding 6000 min⁻¹;
- machines where the cuts are made on both ends of the workpiece during one cycle;
- combined machines used for tenoning (see [EN 940:2008](#));
- the tenoning attachment on a vertical spindle moulding machine (see [EN 848-1:2007](#)).

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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 to machines which are manufactured after the date of issue of this European Standard.

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 1218-3:2001+A1:2009~~

[EN 614-1:2006](#), *Safety of machinery — Ergonomic design principles — Part 1: Terminology and general principles*

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

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* **A1**

A1 *deleted text* **A1**

EN 982:1996, *Safety requirements for fluid power systems and components – Hydraulics*

EN 983:1996, *Safety requirements for fluid power systems and components – Pneumatics*

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* **A1**

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

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* **A1**

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

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

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

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

A1 EN 60947-4-1:2001 **A1**, *Low voltage switchgear and control gear — Part 4: Contactors and motor starters — Section 1: Electromechanical contactors and motor starters* **A1** (IEC 60947-4-1:2000) **A1**

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

■_{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, moveable sources in reverberant fields — Part 1: Comparison method for hard wall test rooms (ISO 3743-1:1994)*

EN ISO 3743-2:1996, *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)*

EN ISO 3744:1995, *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)*

■_{A1} 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)* ■_{A1}

EN ISO 3746:1995, *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)*

EN ISO 4871:1996, *Acoustics — Determination 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: Measurement at discrete points (ISO 9614-1:1993)*

EN ISO 11202:1995, *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)*

EN ISO 11204:1995, *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)*

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)*

■_{A1} EN ISO 12100-1:2003, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology (ISO 12100-1:2003)* ■_{A1}

■_{A1} EN ISO 12100-2:2003, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles (ISO 12100-2:2003)* ■_{A1}

■_{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}

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

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

■_{A1} HD 21.1 S4:2002, *Cables of rated voltages up to and including 450/750 V and having thermoplastic insulation — Part 1: General requirements* ■_{A1}

■_{A1} 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* ■_{A1}

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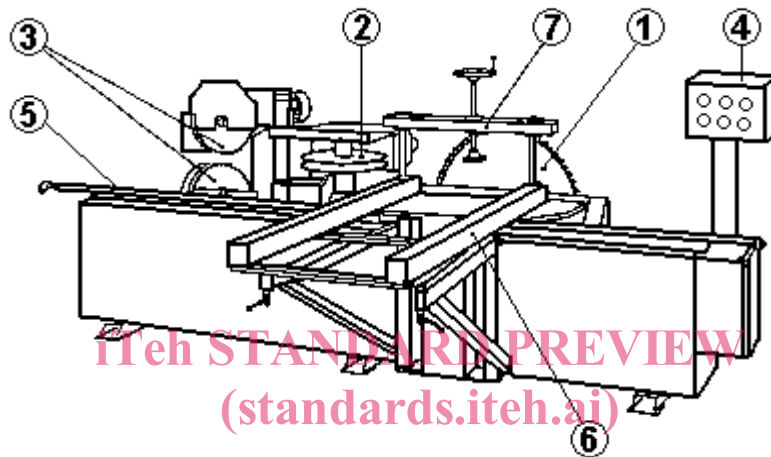
A1 HD 22.4 S4:2004, *Cables of rated voltages up to and including 450/750 V and having crosslinked insulation — Part 4: Cords and flexible cables* **A1**

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.



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Key	1	Main saw blade
	2	Horizontal saw blades
	3	Vertical saw blades
	4	Controls
	5	Sliding table guide
	6	Sliding table
	7	Workpiece clamping bridge

NOTE This figure is intended only to illustrate terms. For clarity not all necessary guards are shown

Figure 1 — Terminology

3.2 Definitions

3.2.1

hand fed tenoning machine with sliding table for cutting structural timbers

machine designed for the production of cuts, for jointing structural timbers, on one end of a workpiece during one cycle. The cuts are made by means of saw blade(s) mounted on one or more spindles (see Figure 1)

3.2.2

cuts for jointing structural timber

machined projections including tenons on the end of a workpiece to facilitate the joining of workpieces (see Figure 2)

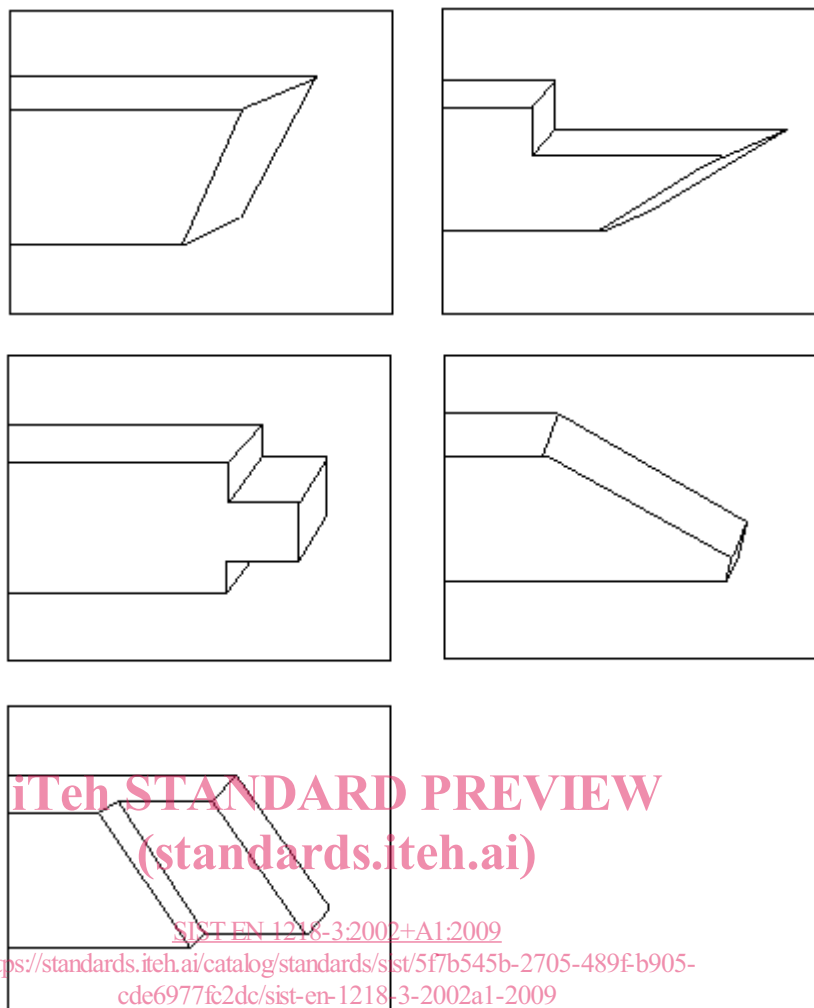


Figure 2 — Examples of saw cuts for joining structural timber

3.2.3

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.

3.2.4

ejection

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

3.2.5

run-up time

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

3.2.6

run-down time

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

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3.2.7

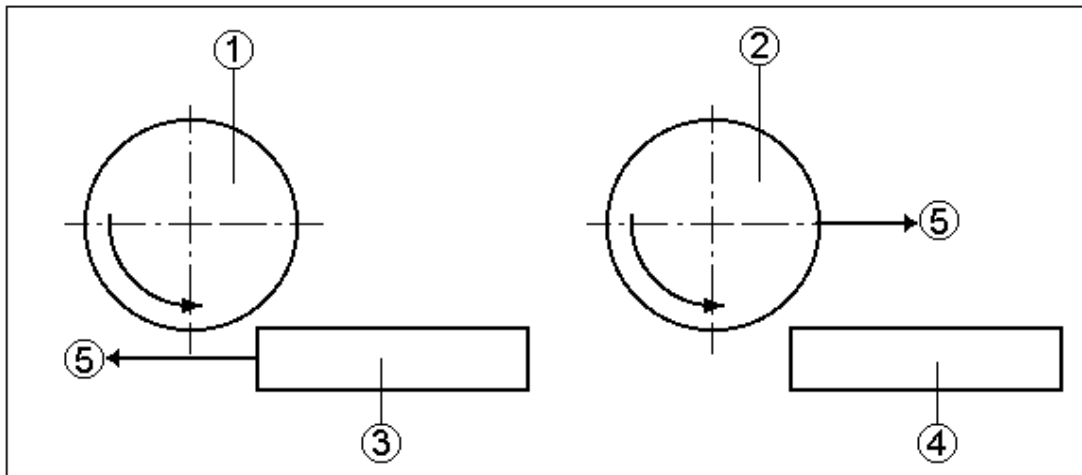
A1) displaceable machine A1)

machine, which is located on the floor, stationary during use and equipped with a device, normally wheels, which allow it to be moved between locations

3.2.8

cutting against the feed

when the relative direction of the tool to the workpiece is as illustrated in Figure 3



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Key	1	Fixed saw blade
	2	Saw blade
	3	Workpiece
	4	Fixed workpiece
	5	Feed direction

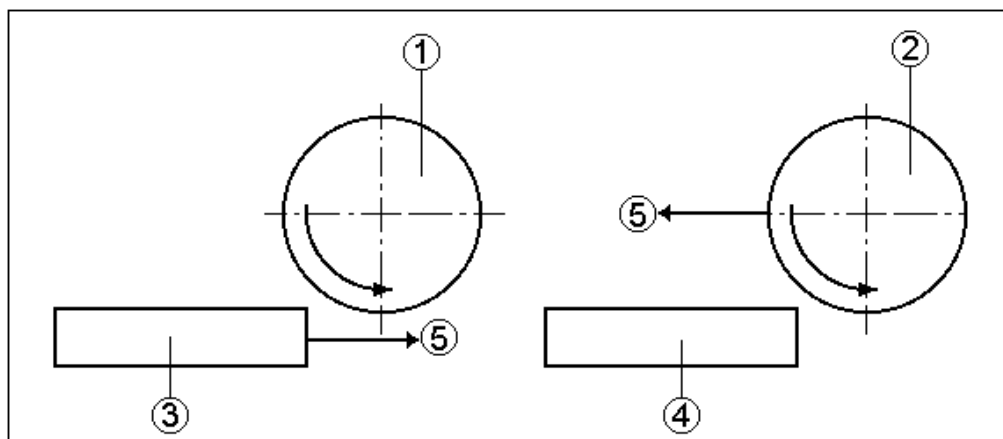
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Figure 3 — Rotational direction of the tool relative to the workpiece feed during cutting against the feed

3.2.9

climb cutting

when the relative direction of the tool to the workpiece is as illustrated in Figure 4



Key	1	Fixed saw blade
	2	Saw blade
	3	Workpiece
	4	Fixed workpiece
	5	Feed direction

Figure 4 — Rotational direction of the tool relative to the workpiece feed during climb cutting

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3.2.10

machine actuator

power mechanism used to effect motion of the machine

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3.2.11

A1 information from the supplier **A1**

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

4 **A1** List of significant hazards **A1**

A1 This clause contains all the 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 work-pieces:			
	a) shape;	4.2	4.2.1, 4.2.2, 5	5.2.2, 5.2.3, 5.2.5, 5.2.7, 5.2.8
	b) relative location;			5.1.2, 5.1.5, 5.1.6, 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)			5.2.5
	e) mechanical strength.			5.2.2
	- accumulation of energy inside the machinery:			
	f) elastic elements (springs), or	4.2	4.10, 5.5.4	5.2.7
	g) liquids and gases under pressure,	4.2	4.10, 5.5.4	5.3.7, 5.3.8
	1.1	Crushing hazard	4.2.1	
1.2	Shearing hazard			5.2.7, 5.2.8
1.3	Cutting or severing hazard			5.2.2, 5.2.3, 5.2.4, 5.2.7, 5.2.8
1.4	Entanglement hazard			5.2.3, 5.2.4, 5.2.6, 5.2.7
1.5	Drawing-in or trapping hazard			5.2.7, 5.2.8
1.9	High pressure fluid injection or ejection hazard			5.3.7, 5.3.8
2	Electrical hazards due to:			
2.1	Contact of persons with live parts (direct contact)	4.3	4.9, 5.5.4	5.3.4, 5.3.16, 5.3.17
2.2	Contact of persons with parts which have become live under faulty conditions (indirect contact)	4.3	4.9	5.3.4, 5.3.16, 5.3.17
4	Hazards generated by noise , resulting in:			
4.1	Hearing loss (deafness), other physiological disorders (loss of balance, loss of awareness)	4.5	4.2.2, 5	5.3.2
4.2	Interference with speech communication, acoustic signals.			5.3.2
6	Hazards generated by radiation			
6.5	Lasers	4.7		5.3.13, 6.3
7	Hazards generated by materials and substances (and their constituent elements) processed or used by the machinery			
7.1	Hazards from contact with or inhalation of harmful fluids and dusts	4.8	4.3b, 4.4	5.3.3
7.2	Fire hazard	4.8	4.4	5.3.1, 5.3.3, 6.3

8	Hazards generated by neglecting ergonomic principles in machinery design related to:			
8.1	Unhealthy postures or excessive effort	4.9	4.7, 4.8.2, 4.11.12, 5.5.5, 5.5.6	5.1.2, 6.3
8.2	Hand-arm or foot-leg anatomy	4.9	4.8.3	5.1.2, 6.3
8.3	Neglected use of personal protection equipment		4.8.7	6.3
8.4	Local lighting		4.8.6	6.3
8.6	Human error, human behaviour		4.8, 4.11.8, 4.11.10, 5.5.2, 6	6.3
8.7	Design, location or identification of manual controls		4.8.7, 4.11.8	5.1.2
8.8	Design or location of visual display units		4.8.8, 6.2	5.1.2
10	Unexpected start up, unexpected overrun/overspeed (or any similar malfunction) from:			
10.1	Failure/disorder of the control system		4.11, 5.5.4	5.1.1
10.2	Restoration of energy supply after an interruption		4.11.4	5.1.6, 5.2.5
10.3	External influences on electrical equipment		4.11.11	5.1.1, 5.3.4, 5.3.12
10.6	Errors made by the operator (due to mismatch of machinery with human characteristics and abilities, see 8.6)	4.9	4.8, 4.11.8, 4.11.10, 5.5.2, 6	5.1.1, 5.3.5, 6.3
11	Impossibility of stopping the machine in the best possible conditions		4.11.1, 4.11.3, 5.5.2	5.1.2, 5.1.4, 5.1.5
13	Failure of the power supply		4.11.1, 4.11.4	5.1.6
14	Failure of the control circuit		4.11, 5.5.4	5.1.1
15	Errors of fitting	4.9	4.7, 6.5	5.2.3, 6.3
16	Break-up during operation	4.2.2	4.3	5.2.2
17	Falling or ejected objects or fluids	4.2.2	4.3, 4.10	5.2.2, 5.2.3, 5.2.5, 5.2.6, 5.2.8, 5.3.16
18	Loss of stability / overturning of machinery	4.2.2	5.2.6	5.2.1

A1