



# SLOVENSKI STANDARD

## SIST EN 860:2000

01-april-2000

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### Safety of woodworking machines - One side thickness planing machines

Safety of woodworking machines - One side thickness planing machines

Sicherheit von Holzbearbeitungsmaschinen - Dickenhobelmaschinen für einseitige Bearbeitung

Sécurité des machines pour le travail du bois - Machines à raboter sur une face

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Ta slovenski standard je istoveten z: **EN 860:1997**

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#### **ICS:**

25.080.25	Stroji za ploščinsko obdelavo	Planing machines
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EUROPEAN STANDARD

EN 860

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 1997

ICS 79.120.10

Descriptors: woodworking machinery, planing machines, safety of machines, dangerous machines, hazards, safety measures, specification, design, safety devices, dimensions, hazardous areas

English version

## Safety of woodworking machines - One side thickness planing machines

Sécurité des machines pour le travail du bois  
- Machines à raboter sur une face

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# CEN

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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## Foreword

This European Standard has been prepared by Technical Committee CEN/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of an identical text or by endorsement, at the latest by November 1997, and conflicting national standards shall be withdrawn at the latest by November 1997.

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 EU Directive(s).

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

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

Normative and informative annexes to this standard are listed in the content list.

The standards prepared by CEN/TC 142 are particular to woodworking machines and compliment the relevant A and B standards on the subject of safety (see introduction of EN 292-1:1991 for description of A, B and C standards).

Common requirements for tooling are given in EN 847-1:1997.

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, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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## 0 Introduction

This European standard has been prepared to be a harmonized standard to provide one means of conforming to the Essential Safety Requirements of the Machinery Directive and associated EFTA Regulations and is a type C standard as defined in EN 292:1991.

The extent to which hazards are covered is indicated in the scope of this standard. In addition, machinery shall comply as appropriate with EN 292 for hazards which are not covered by this standard.

The requirements of this European standard concern designers, manufacturers, suppliers and importers of thickness planing machines.

This European standard also includes information to be provided by the manufacturers to the users.

## 1 Scope

This European standard specifies the requirements and/or measures to remove the hazards and limit the risk on one side thickness planing machines fitted with an integrated feed hereinafter referred to as "machines", designed to cut solid wood, chipboard, fibreboard, plywood and also these materials where they are covered with plastic laminate or edgings.

Electrically driven machines excluded from the scope of this standard are covered by the requirements of EN 61029-1: 1995 or EN 50144-1: 1995 and prEN 61029-2-3: 1996.

This European standard covers all the hazards relevant to this machine. These hazards are listed in clause 4.

This European Standard does not apply to machines set up on a bench or a table similar to a bench which are intended to carry out work in a stationary position and capable of being lifted by hand by one person.

This European standard applies to one side thicknessing machines with manual loading and unloading and with cutterblock fixed in position as defined in 3.1.1.

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. It does not apply to thickness planing machines where the cutterblock is adjustable for depth of cut setting.

This European standard is primarily applicable to machines which are manufactured after the date of issue of this standard.

## 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.

<u>SIST EN 860:2000</u>		
<a href="https://standards.iteh.ai/catalog/standards/sist/346dcffb-1346-48b1-a28f-6b4ff2387e12/sist-en-860-2000">https://standards.iteh.ai/catalog/standards/sist/346dcffb-1346-48b1-a28f-6b4ff2387e12/sist-en-860-2000</a>		
EN 292-1	1991	Safety of machinery - Basic concepts, general principles for design - Part 1: Basic, terminology, methodology.
EN 292-2	1991	Safety of machinery - Basic concepts - General principles
EN 292-2/A1	1995	for design - Part 2: Technical principles and specifications.
EN 294	1992	Safety of machines - Safety distances to prevent danger zones being reached by upper limbs.
EN 847-1	1997	Tools for woodworking - Safety requirements - Part 1: Milling tools, circular saw blades.
prEN 953	1992	Safety of machinery - General requirements for the design and construction of guards (fixed, movable).
EN 982	1996	Safety of machinery - Safety requirements for fluid power systems and their components - Hydraulics.
EN 983	1996	Safety of machinery - Safety requirements for fluid power systems and their components - Pneumatics.
EN 1088	1995	Safety of machinery - Interlocking devices associated with guards - Principles for design and selection

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 9614-1	1995	Acoustics - Determination of sound power levels of noise sources using sound intensity - Part 1: Measurement at discreet 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).
EN ISO 11204	1995	Acoustics - Noise emitted by machinery and equipment - Measurement of emission sound pressure levels at a work station and at other specified positions - Method requiring environmental corrections (ISO 11204:1995)
EN 50144-1	1995	Safety of hand held electric motor operated tools - Part 1: General requirements.
EN 60204-1	1992	Safety of machinery - Electrical equipment of machines - Part 1: General requirements (IEC 204-1:1992, modified)
prEN 60227-1		Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V - Part 1: General requirements.
prEN 60245-1		Rubber insulated cables of rated voltages up to and including 450/750 V - Part 1: General requirements.
EN 60439-1 prA11	1995	Low voltage switchgear and control gear assemblies - Part 1: Type tested and partially type tested assemblies.
EN 60529	1991	Degree of protection provided by enclosure (IP code).
EN 60947-4-1	1992	Low voltage switch gear and control gear - Part 4: Contractors and motors starters - Section 1: Electromechanical contactors and motor starters.
EN 60947-5-1	1991	Low voltage switch gear and control gear - Part 5: Control circuits devices and switching elements - Section 1: Electromechanical control circuit devices.
EN 61029-1	1995	Safety of transportable motor operated electric tools - Part 1: General requirements (IEC 1029-1:1990, modified)
prEN 61029-2-3	1996	Safety of transportable motor operated electric tools - Part 2 - Section 3: Particular requirements for planers and thicknessers
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).

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EN ISO 3743-2	1996	Acoustics - Determination of sound power levels of noise sources - 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).
ISO 3745	1977	Acoustics - Determination of sound power levels of noise sources - Precision methods for anechoic and semi-anechoic rooms
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.
ISO TR 11688-1	1995	Acoustics - Recommended practice for the design of low-noise machinery and equipment - Part 1: Planning

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<b>3</b>	<b>Definitions and Terminology</b>	<small>SIST EN 860:2000 <a href="https://standards.iteh.ai/catalog/standards/sist/346dcffb-1346-48b1-a28f-6b4ff2387e12/sist-en-860-2000">https://standards.iteh.ai/catalog/standards/sist/346dcffb-1346-48b1-a28f-6b4ff2387e12/sist-en-860-2000</a></small>
<b>3.1</b>	<b>Definitions</b>	

For the purposes of this standard the following definition apply :

### **3.1.1 one side thickness planing machines**

A machine designed to plane wood to a set thickness by means of a horizontally rotating tool. The distance between the cutting circle diameter and the surface of the table supporting the workpiece is adjustable.

The upper surface of the workpiece is planed.



**3.1.2 table**

Table may comprise an assembly of rollers, belts or other fixed or moving mechanical elements which are used to support the workpiece at the machine.

**3.1.3 cutterblock**

The machine component designed to hold the cutting knives or cutting blades.

**3.1.4 tool**

A complex tool as defined in EN 847-1:1997 which consists of the cutterblock, the cutting blades and their fixings.

**3.1.5 integrated feed**

A feed mechanism for the workpiece which is integrated with the machine and where the workpiece is held and controlled mechanically during the machining operation.

**3.1.6 loading the machine**

The manual or automatic placing of the workpiece on to a carriage, magazine, lift, hopper, moveable bed, conveyor or the presentation of the workpiece to an integrated feed device.

**3.1.7 ejection**

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

**3.1.8 kickback**

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

**3.1.9 anti kickback device**

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

**3.1.10 run up time**

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

### **3.1.11 run down time**

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

### **3.1.12 confirmation**

Statement, sales literature, leaflet or other documents where a manufacturer or (supplier) declares either the characteristics or the compliance of the material or product to a relevant standard.

### **3.1.13 machine actuator**

A power mechanism used to effect motion of the machine.

### **3.1.14 transportable machine**

A 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 Terminology**

The name of the main parts of the machine are shown in table 1 and figure 1.

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**4 List of hazards**

This standard deals with all the hazards 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.

- for hazards which are not significant e.g. general minor or secondary hazards see relevant type A standards especially parts 1 and 2 of EN 292:1991.

These hazards are listed in table 1 in accordance with annex A of EN 292-2:1991/A1:1995.

**Table 1 : List of hazards**

HAZARD	Relevant clause of this standard
<b>1. Mechanical hazards</b> (caused for example by : . shape . relative location . mass and stability (potential energy of elements) . mass and velocity (kinetic energy of elements) . inadequacy of the mechanical strength . accumulation of Potential energy by : . elastic elements (springs), or . liquids or gases under pressure, or . vacuum of the machine parts or workpieces)	
1.1 Crushing hazard	5.2.7
1.2 Shearing hazard	Not relevant
1.3 Cutting or severing hazard	5.2.3, 5.2.7.2
1.4 Entanglement hazard	5.2.7
1.5 Drawing in or trapping hazard	5.2.7.2
1.6 Impact hazard	5.2.5
1.7 Stabbing or puncture hazard	Not relevant
1.8 Friction or abrasion hazard	Not relevant
1.9 High pressure fluid injection hazard	Not relevant
1.10 Ejection of parts (of machinery and processed materials/workpieces)	5.2.2, 5.2.3, 5.2.5
1.11 Loss of stability of machinery and machine parts	5.2.1
1.12 Slip, trip and fall hazards in relationship with machinery (because of their mechanical nature)	Not relevant

(continued)

HAZARD	Relevant clause of this standard
<p><b>2. Electrical hazards</b>, caused for example by :</p> <p>2.1 Electrical contact (direct or indirect)</p> <p>2.2 Electrostatic phenomena</p> <p>2.3 Thermal radiation or other phenomena such as ejection of molten particles, and chemical effects from short circuits, overloads, etc.</p> <p>2.4 External influences on electrical equipment</p>	<p>5.3.4</p> <p>Not relevant</p> <p>Not relevant</p> <p>5.3.12</p>
<p><b>3. Thermal hazards</b> resulting in :</p> <p>3.1 Burns and scalds, by a possible contact of persons, by flames or explosions and also by the radiation of heat sources</p> <p>3.2 Health damaging effects by hot or cold work environment</p>	<p>Not relevant</p> <p>Not relevant</p>
<p><b>4. Hazards generated by noise</b>, resulting in :</p> <p>4.1 Hearing loss (deafness), other physiological disorders (e.g. loss of balance, loss of awareness)</p> <p>4.2 Interference with speech communication, acoustic signals, etc.</p>	<p>5.3.2</p> <p>Not relevant</p>
<p><b>5. Hazards generated by vibration</b> (resulting in a variety of neurological and vascular disorders)</p>	<p>Not relevant</p>
<p><b>6. Hazards generated by radiation</b>, especially by :</p> <p>6.1 Electrical arcs</p> <p>6.2 Lasers</p> <p>6.3 Ionising radiation sources</p> <p>6.4 Machines making use of high frequency electro magnetic fields</p>	<p>Not relevant</p> <p>Not relevant</p> <p>Not relevant</p> <p>Not relevant</p>
<p><b>7. Hazards generated by materials and substances processed</b>, used or exhausted by machinery for example</p> <p>7.1 Hazards resulting from contact or inhalation of harmful fluids, gases, mists, fumes and dusts</p> <p>7.2 Fire and explosion hazard</p> <p>7.3 Biological and microbiological (viral or bacterial) hazards</p>	<p>5.3.3</p> <p>5.3.1</p> <p>Not relevant</p>
<p><b>8. Hazards generated by neglecting ergonomic principles in machine design</b> (mismatch of machinery with human characteristics and abilities) caused for example by :</p> <p>8.1 Unhealthy postures or excessive efforts</p> <p>8.2 Inadequate consideration of human hand/arm or foot/leg anatomy</p>	<p>5.1.2</p> <p>Not relevant</p>

(continued)