SLOVENSKI STANDARD
SIST EN 61029-2-3:2011

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Varnost premičnih električnih orodij - 2-3. del: Posebne zahteve za skobeljnike in debelinske skobeljne stroje (IEC 61029-2-3:1993, spremenjen + A1:2001)

Safety of transportable motor-operated electric tools - Part 2-3: Particular requirements for planers and thicknessers (IEC 61029-2-3:1993, modified + A1:2001)

Sicherheit transportabler motorbetriebener Elektrowerkzeuge - Teil 2-3: Besondere Anforderungen an Abrichthobel und Dickenhobel (IEC 61029-2-3:1993, modifiziert + A1:2001)

Sécurité des machines-outils électriques semi-fixes - Partie 2-3: Règles particulières pour les dégauchisseuses et les raboteuses (CEI 61029-2-3:1993, modifiée + A1:2001)

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English version

Safety of transportable motor-operated electric tools - Part 2-3: Particular requirements for planers and thicknessers

(IEC 61029-2-3:1993, modified + A1:2001)

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CENELEC

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

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Foreword

The text of the International Standard IEC 61029-2-3:1993 + A1:2001, prepared by SC 61F (transformed into TC 116, Safety of hand-held motor-operated electric tools), together with the common modifications prepared by the Technical Committee CENELEC TC 116 (former TC 61F), Safety of hand-held motor-operated electric tools, was submitted to the CENELEC Formal Vote and was approved by CENELEC as EN 61029-2-3 on 2011-02-14.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

The following dates are proposed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2012-02-14
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2014-02-14

This European Standard is divided into two parts:

Part 1 General requirements that are common to most transportable electric motor operated tools (for the purpose of this European Standard referred to simply as tools) which could come within the scope of this European Standard;

Part 2 Requirements for particular types of tool which either supplement or modify the requirements given in Part 1 to account for the particular hazards and characteristics of these specific tools.

This European Standard has been prepared under Mandate M/396 given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EU Directive 2006/42/EC. See Annex ZZ.

Compliance with the relevant clauses of Part 1 together with this Part 2-3 provides one means of conforming with the specified essential requirements of the Directives. The requirements defined in EN ISO 12100 are also dealt with in this European Standard.

For noise and vibration this European Standard covers the requirements for their measurement, the provision of information arising from these measurements and the provision of information about the personal protective equipment required. Specific requirements for the reduction of the risk arising from noise and vibration through the design of the tool are not given as this reflects the current state of the art.

Warning: Other requirements arising from other European Directives can be applicable to the products falling within the scope of this European Standard.

This Part 2-3 is to be used in conjunction with EN 61029-1:2009. This Part 2-3 supplements or modifies the corresponding clauses of EN 61029-1, so as to convert it into the European Standard: “Safety of transportable motor-operated electric tools – Part 2-3: Particular requirements for planers and thicknessers”.

Where a particular clause or subclause of Part 1 is not mentioned in this Part 2-3, that clause or subclause applies as far as is reasonable. Where this Part 2-3 states "addition", "modification" or "replacement", the relevant text of Part 1 is to be adapted accordingly.

Clauses, subclauses, notes, tables and figures which are additional to those in Part 1 are numbered starting from 101.

Clauses, subclauses, notes, tables and figures which are additional to those in EN 61029-2-3 are prefixed “Z”.

NOTE In this standard the following print types are used:
- requirements proper: in roman type
- *test specifications: in italic type;*
- explanatory matter: in smaller roman type.

1 Scope

This clause of Part 1 is applicable except as follows:

1.1 *Addition:*

This European Standard applies to planers, thicknessers and combined planers and thicknessers intended for cutting wood and analogous materials with a maximum planing width of 330 mm.

1.2 *Addition:*

This European Standard does not apply to planers other than transportable.

NOTE Z101 EN 859 gives requirements for planers other than transportable.

This European Standard does not apply to thicknessers other than transportable.

NOTE Z102 EN 860 gives requirements for thicknessers other than transportable.

This European Standard does not apply to planing and thicknessing machines other than transportable.

NOTE Z103 EN 861 gives requirements for planing and thicknessing machines other than transportable.

2 Definitions

This clause of Part 1 is applicable except as follows:

2.21 *Replacement:*
normal load
load to obtain rated input

2.101
planer
machine designed to plane the surface of wood by means of a cutter block rotating about a horizontal axis and located between two frames used to position and support the work piece. The lower surface of the work piece is planed

2.102
thicknesser
machine designed to plane wood to a set thickness by means of a cutter block rotating about a horizontal axis with mechanical feed, the distance between the knives and the surface of the table supporting the work piece being adjustable. The upper surface of the work piece is planed (see Figure Z101)

2.103
combined planer and thicknesser
machine designed to carry out the functions of both a planer and a thicknesser (see Figure Z102)

2.104
cutter block
rotating assembly consisting of the drum, the blades, the blade fixing system and the spindle

3 General requirement

This clause of Part 1 is applicable.

4 General notes on tests

This clause of Part 1 is applicable.

5 Rating

This clause of Part 1 is applicable.

6 Classification

This clause of Part 1 is applicable.

7 Marking and information for use

This clause of Part 1 is applicable except as follows:

7.1 *Addition:*

– no-load speed of the cutter block;
– indication of direction of rotation of the cutter block;
– planing width.

7.6 *Addition:*

The direction of rotation of the cutter block shall be indicated on the tool by an arrow raised or sunk, or by any other means not less visible and indelible.

7.13 *Addition:*

The instruction handbook shall contain a repeat of the warnings affixed to the tool. The substance of the following instructions shall also be given:

c) Safety precautions

– instruction how to check the guard adjusting arrangements and return springs, when fitted, for faultless condition before use;

– instruction to use blades which are well sharpened and maintained. If blades are re-sharpenable: information about the limits of re-sharpening;

– instruction to use only cutting blades designed for this machine;

– instruction how the blades shall be assembled and adjusted, if applicable;

– instruction that any portion of the cutter block not being used for planing shall be adjusted to be guarded;

– instruction how to inspect the anti-kickback devices and feed speed spindles to ensure safe operation;

– instruction to wear suitable protective equipment, this could include

  i) hearing protection, to reduce the risk of induced hearing loss,

  ii) respiratory protection, to reduce the risk of inhalation of harmful dust,

  iii) gloves for handling the cutter block and rough material, to reduce injuries from sharp edges;

– for cutting wood: description of the correct assembly of a dust-collecting device.

e) Safe operation

– information what kind of work can be performed safely;

– for those machines designed for rebating: instruction for the safe operation;

– information about the location where the push-stick shall be stored when not in use;

– instruction, in which situations the push-stick is to be used;

– instructions how to adjust the guards and fence in relation to the different work;

– information about the effects caused by metal parts penetrated into the work piece and splintery work pieces;

– instruction how correctly to use roller tables when cutting long work pieces;

– warning not to do the following operations:

  i) stopped work (i.e. any cut which does not involve the full work piece length);

  ii) recesses, tenons or moulds;

  iii) planing of badly bowed wood where there is inadequate contact on the infeed table.

NOTE Sketches may be used to illustrate the modes of operation.

8 Protection against electric shock

This clause of Part 1 is applicable.

9 Starting

This clause of Part 1 is applicable.

10 Input and current

This clause of Part 1 is applicable.

11 Heating

This clause of Part 1 is applicable.

12 Leakage current

This clause of Part 1 is applicable.

13 Environmental requirements

This clause of Part 1 is applicable except as follows:

13.2.1 *Addition:*

The most important sources of noise of planers and thicknessers are:

– the cutting blades;
– the infeed table.

NOTE For general information concerning the reduction of noise see EN ISO 11688-1.

13.2.4 *Replacement of paragraphs 1, 2 and 3:*

Planers and thicknessers are tested under the conditions shown in Table Z101.

Table Z101 – Noise test conditions for planers and thicknessers

Material	Beech – minimum dimensions 20 mm × 50 mm × 400 mm
Feed-speed	(4 ± 0,5) m/min for planing, maximum feed speed for thicknessing
Depth of cut	1 mm
Width of cut-off	50 mm for planing and thicknessing with parallel guide set for maximum width
Tool bit/cutter/ abrasive	New blades, as recommended by the manufacturer for solid wood.
Work cycle	Five passes, each following the other, to be done on one workpiece

13.3 *Modification:*

This subclause is not applicable.

14 Protection against ingress of foreign bodies and moisture resistance

This clause of Part 1 is applicable.

15 Insulation resistance and electric strength

This clause of Part 1 is applicable.

16 Endurance

This clause of Part 1 is applicable.

17 Abnormal operation

This clause of Part 1 is applicable, except as follows:

All machines covered by this particular part are considered to be machines in which moving parts are liable to be jammed.

18 Stability and mechanical hazards

This clause of Part 1 is applicable, except as follows:

18.1 *Addition:*

Blades shall be changeable without detachment of the guard over the cutter block. The guard shall remain permanently attached to the tool, but it may be moved to enable the changing of the blades.

18.1.101 All machines covered by this European Standard

18.1.101.1 The cutter block shall have a circular shape in any cross section perpendicular to the axis of the cutter block which performs the function of chip thickness limitation.

Compliance is checked by inspection.

18.1.101.2 The cutting edge of the blades shall not extend more than 1,1 mm (see dimension *a* in Figure Z103) past the surface of the cutter block.

Compliance is checked by measurement.

18.1.101.3 There shall be no recess in the cutter block except for the cutting blades and their fastening devices (see Figure Z103).

The chip groove in front of the blade shall have a maximum depth (*d*) measured radially to the cutter block in accordance with Figure Z104.

Compliance is checked by inspection and measurement.

18.1.101.4 The blades shall be fixed to the cutter block in such a way that friction alone is not relied upon to prevent ejection of the blades.

The clamping screws, if any, shall engage for a minimum of six full threads when fitted to a steel cutter block. When the cutter block is made of material other than steel the clamping arrangement shall have the same degree of strength as that provided by the requirement for the clamping screw for steel block. The cutter block shall ensure that blade(s) are clamped over their total length.

Compliance is checked by inspection and by the following test:

The blades are fitted to the cutter block in accordance with the manufacturer's instructions. The projection of the blades is measured and the cutter block is run at maximum speed n_{max} for 5 min, after this test the projection of the blades is measured again and the displacement shall not exceed 0,15 mm.

The cutter block is then run at the test speed n_p for 5 min, the projection of the blades is measured and the displacement from the previous shall not exceed 0,15 mm.

where

n_{max} = *maximum no-load speed in revolutions per minute of the cutter block at rated voltage or at the upper limit of the rated voltage range; and*

n_p = *1,5 ×* n_{max}.

18.1.101.Z1 Handles and levers shall not impede the operator when feeding or loading the work piece.

Compliance is checked by inspection.

18.1.102 Planers

18.1.102.1 The dimensions of the tables supporting the work piece shall comply with Table Z102.

Table Z102 – Table sizes

Working width (*W*) in millimetres	Minimum length of the tables in millimetres measured from the cutter block axis to the end of the table (in-feed and out-feed table)
$W \leq 200$	1,5 × *W*
$W > 200$	1,75 × *W*

The outfeed table surface, if not adjustable, shall be in line with the cutting circle diameter, as illustrated in Figure Z103.

If the outfeed table height is adjustable, it shall not be possible to adjust it more than 1,1 mm below the cutting circle diameter.

At any depth of cut, the distance "*b*" (see Figure Z.103) between the cutting circle and the lips of the tables shall not exceed 5 mm measured radially.

18.1.102.2 Recesses in the lips of the planer tables provided in order to reduce the noise shall not exceed a width of 6,0 mm.

Holes to obtain the same effect shall have diameters not exceeding 6,0 mm.

18.1.102.3 The lip of the infeed table shall be strong enough to prevent deformation or damage.

Compliance is checked by the following test:

Blows are applied on the lip with a spring-operated impact test apparatus (mass of 250 g with an energy of 1,0 J). Three blows are applied to every point of the lip supposed to be weak. After testing, the lip shall remain intact without visible fissure or deformation prejudicial to the correct operating of the machine.

18.1.102.4 Cutting blades for planers designed for rebating shall extend over the edge of the cutter block by not more than 5,0 mm.

The thickness of the body of such blades shall be not less than 3,0 mm.

For tools designed for rebating the side of the cutting blades shall be guarded when not being used for rebating and the guard shall be lockable in the closed position without the aid of a tool. This guard shall be adjustable or self-closing and shall be not more than 3,0 mm from the cutting blade.

The guard shall be designed so it cannot touch the blades.

The part of the cutter block not used during the rebating operation shall be completely guarded.

Machines not intended for rebating shall be so designed that this operation is not possible.

18.1.102.5 Planers shall have guards covering the cutter block on both sides of the parallel guide.

The cover of the cutter block behind the parallel guide shall be fixed to the parallel guide so that the cutter block is automatically protected when moving the parallel guide.

18.1.102.5.1 Parts not used during work (behind the parallel guide)

Access to blades shall be prevented by a guard, the dimensions of which are such as to cover the cutter block, located behind the guide, whatever the position of the guide, e.g. by extended part of the guide.

If the guide is adjustable in position (transverse adjustment or inclination) the guard displacement shall be associated with the guide displacement.

18.1.102.5.2 Parts used during work (in front of the parallel guide)

Access to blades usable during work shall be prevented by a device rigidly locked with the frame of the machine, which allows only the used part of the cutter block to be uncovered. This device shall be:

– a bridge-type guard or swivel-type guard for planing machines with a planing width not greater than 100 mm;

– a bridge-type guard for planing machines with a planing width greater than 100 mm.

18.1.102.5.2.1 Bridge-type guard

a) The bridge guard shall be able to lie flat on at least one of the machine tables, when planing is not carried out (rest position).

b) The bridge length, intended to prevent access to the blades, shall be at least equal to the working width.

c) In the rest position, the bridge shall cover the slot and extend on the tables on both sides, over a distance at least equal to 10 mm from the lips when the slot width, see Figure ZA.1, is maximum.

d) When the bridge is set at any height, the front part of the bridge shall cover at least the area in the vertical plane passing through the edge of the infeed table lip, for the maximum slot width.

e) At any height, the differences of level between the front part and the rear part of the bridge shall not exceed 5,0 mm.

f) During the transverse adjustment, the bridge shall move in a direction parallel with the cutter block axis.

g) It shall be possible to lock the horizontal adjustment of the bridge type guard in any position without the aid of a tool and the bridge type guard shall remain in its locked position.

h) It shall be adjustable in height from 0 mm to maximum 85 mm above the outfeed table and this adjustment shall be stepless and it shall return automatically to its pre-set position (for example by spring loading) after being pressed down.

i) The upper surface of the bridge shall be smooth, rounded and free of projection.

j) Its lower surface shall be so designed that there is no obstruction to the passage of the work piece through the machine. The leading edge of the guard at the infeed side shall be shaped in such a way that one of the requirements of Figure Z105 is met.

The guard shall have sufficient stability and shall be in compliance with the tests as described in the Annex ZA.

18.1.102.5.2.2 Swivel-type guard

Figure Z110 illustrates an example of swivel-type guard.

a) When planing is not carried out, the guard shall cover the whole cutter block whatever the parallel guide adjustment is.

b) Whatever the used working width is, the guard shall cover the part of the cutter block which is not being used and shall open on contact with the work piece.

c) It shall remain in contact with the work piece during the whole planing action and there shall be no means to lock it in the open position.

d) It shall return automatically to the closed position with a maximum time of 0,2 s for the maximum working width and the maximum open position.

e) The gap between lower surface of the guard and outfeed table shall be not greater than 4,0 mm.

18.1.102.5.2.3 The bridge or swivel type guard shall be made from a material such that any unintended contact with the rotating cutter block does not cause any of the following:

– damage prejudicial to the functioning of the guard such as breaking or partial rupture;
– damage to blades;
– damage to the guard in case of shock with the work piece.

Compliance is checked by applying blows on the guard with a spring-operated impact test apparatus (mass of 250 g with energy of 1,0 J). Three blows are applied to every point of the guard supposed to be weak. After testing, the guard shall remain intact without visible fissure or deformation prejudicial to the correct operating of the machine.

18.1.102.6 Planers shall be provided with a parallel guide. The parallel guide shall comply with the dimensions specified in Table Z103.

Table Z103 – Parallel guide sizes

Working width (*W*) in millimetres	Minimum length of the guide on both sides of the cutter block in millimetres. The whole length shall not exceed the table length	Height of the guide in millimetres
$W \leq 200$	2,3 × *W*	0,4 × *W*
$W > 200$	2,5 × *W*	0,5 × *W*

The guiding surface as well as its upper surface shall have no gaps.

If there is no specific compliance statement, compliance with 18.1.102.1 to 18.1.102.6 is checked by measurement and inspection.

18.1.103 Thicknessers

18.1.103.1 Thicknessers shall be designed to prevent kickback by:

a) arrangement of the cutter block between barriers on the infeed and outfeed side designed according to Figure Z106; or

b) providing anti-kickback devices; or

c) other designs.