SLOVENSKI STANDARD
SIST EN 847-1:2014

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Nadomešča:
SIST EN 847-1:2005+A1:2007

Orodja za obdelavo lesa - Varnostne zahteve - 1. del: Rezkalno orodje, listi krožnih žag

Tools for woodworking - Safety requirements - Part 1: Milling tools, circular saw blades

Maschinen-Werkzeuge fur Holzbearbeitung - Sicherheitstechnische Anforderungen - Teil 1: Fas- und Hobelwerkzeuge, Kreissageblätter

Outils pour le travail du bois - Prescriptions de sécurité - Partie 1: Outils de fraisage, lames de scies circulaires

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ICS:

25.100.20	Orodja za frezanje	Milling tools
25.100.40	Žagni listi	Saws
79.120.10	Lesnoobdelovalni stroji	Woodworking machines

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English Version

Tools for woodworking - Safety requirements - Part 1: Milling tools, circular saw blades

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Maschinen-Werkzeuge für Holzbearbeitung - Sicherheitstechnische Anforderungen - Teil 1: Fräs- und Hobelwerkzeuge, Kreissägeblätter

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 847-1:2013) 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of an identical text or by endorsement, at the latest by April 2014, and conflicting national standards shall be withdrawn at the latest by April 2014.

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This document supersedes EN 847-1:2005+A1:2007.

The following table contains a list of modifications from the previous edition.

EN 847-1:2005+A1:2007	EN 847-1:2013	Reason
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4 Symbols and abbreviations	3.2 Symbols and abbreviations	ed
5 List of significant hazards	4 List of significant hazards	ed
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Annex B: Maintenance and modification of milling tools and related components	Annex A: Maintenance and modification of milling tools and related components	ed
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Introduction

The extent to which hazards are covered is indicated in the Scope of this document.

The requirements of this document concern designers, manufacturers, suppliers and importers of tools for woodworking.

This document also includes information which the manufacturer will provide to the user.

1 Scope

This European Standard specifies all hazards arising from the use of tools for woodworking machines, and describes the methods for the elimination or reduction of these hazards by tool design and by the provision of information. This European Standard deals with milling tools (bore mounted, shank mounted), integrated tools and circular saw blades.

This European Standard does not cover any hazard related to the strength of shank of shank mounted milling tools. The hazards are listed in Clause 4. This European Standard does not apply to boring bits, eccentric single router cutters, cutters with cutting circle less than 16 mm and to tools used in rotary knife lathes and copying lathes where the hazard of ejection and contact with the tool is always prevented by a system of fixed guards and/or movable guards interlocked with guard-locking and/or self-closing guards.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 847-2, *Tools for woodworking — Safety requirements — Part 2: Requirements for the shank of shank mounted milling*

EN 23878, *Hardmetals — Vickers hardness test (ISO 3878)*

ISO 286-2, *Geometrical product specifications (GPS) — ISO code system for tolerances on linear sizes — Part 2: Tables of standard tolerance classes and limit deviations for holes and shafts*

ISO 1940-1, *Mechanical vibration — Balance quality requirements for rotors in a constant (rigid) state — Part 1: Specification and verification of balance tolerances*

3 Terms, definitions, symbols and abbreviations

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1.1
milling tools
rotating cutting tool (e.g. milling cutter, planing cutter, thicknessing cutter) normally having its main feed direction perpendicular to the rotation axis, for working various surfaces on wood and similar materials through chip removal

Note 1 to entry: The cutting edge of the cutting part may be

— parallel to the axis of rotation,

— square to the axis of rotation, or

— a profile which is a combination of the two.

The tool may be

— a one piece tool,

— a composite tool,

— a complex tool, or

— in the form of a tool set.

3.1.2
circular saw blade
rotating cutting tool for cross-cutting or ripping wood and similar materials through chip removal

Note 1 to entry: The tools cut on the periphery and on both flanks simultaneously, and may be

— a one piece tool,

— a composite tool, or

— a complex tool.

3.1.3
one piece tool (solid tool)
tools without bonded or detachable parts: the body and the cutting parts are one piece

3.1.4
composite tool (tipped tool)
tools where the cutting parts (tips) are firmly connected by bonding to the body, e.g. welding, brazing, adhesive fixing

3.1.5
complex tool
tools where one or more cutting parts (inserts, blades) are exchangeably mounted in a body through detachable fixing elements

Note 1 to entry: The cutting parts may be one piece or composite.

3.1.6
tool set
number of individual tools clamped together on a tool carrier designed to function as one tool

3.1.7
integrated tools
tools where the body is part of the machine and only the cutting parts are exchangeable

3.1.8
body
part of the tool which holds the cutting blades or inserts, or on which the cutting parts are formed

[SOURCE: ISO 3002-1:1982, 3.2.1]

3.1.9
cutting part
functional part or parts of the tool each comprised of chip producing elements

Note 1 to entry: The cutting edges, face and flank are therefore elements of the cutting part. In the case of a multi-toothed cutter, each tooth has a cutting part.

[SOURCE: ISO 3002-1:1982, 3.2.5]

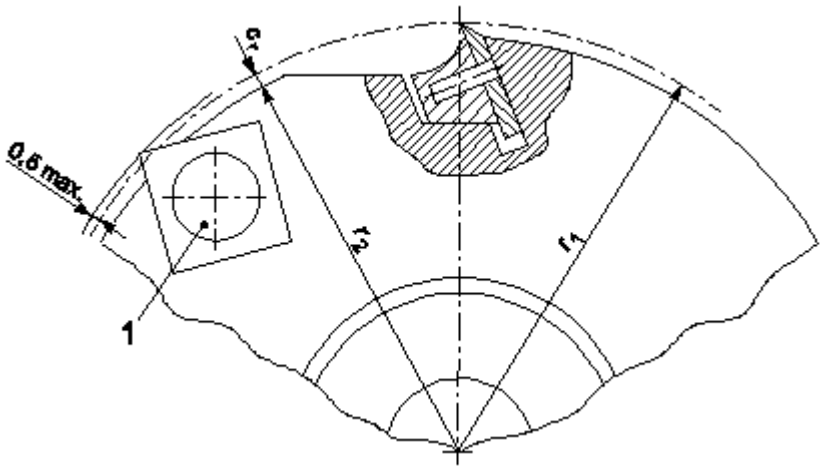
3.1.10
auxiliary cutting parts
auxiliary cutting parts are additional cutting parts with a cutting width of less than or equal to 12 mm and a radial cutting edge projection to the body of less than or equal to 13 mm

EXAMPLE Grooving inserts, bevelling inserts, chamfering inserts.

3.1.11
spur
cutting part which operates both on its periphery and on its flank

Note 1 to entry: The spur projects from the major cutting edge in radial, and if applicable, in axial direction. A spur is either a separate cutting part (see Figure 1) or a part of the major cutting edge.

Dimensions in millimetres

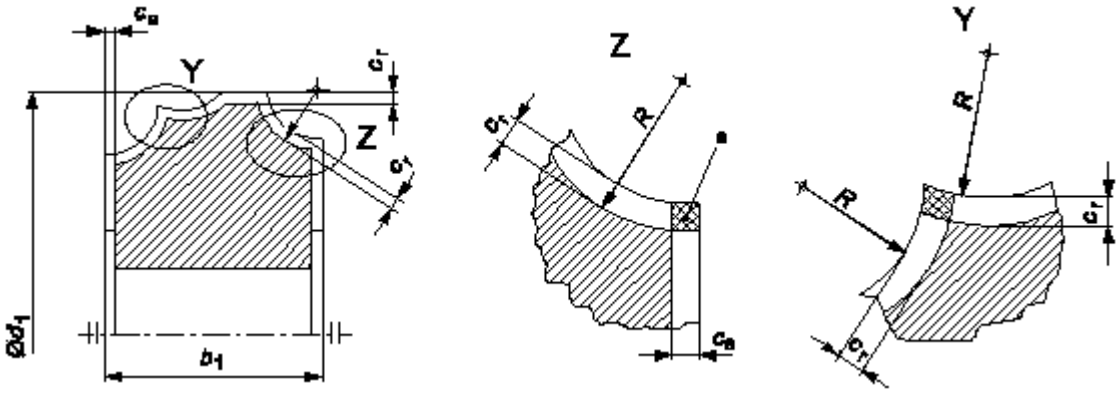


Key
1 screw at the choice of the manufacturer

Figure 1 — Milling tool with a spur

3.1.12
cutting diameter
d_1 (cutting radius r_1)
for tools where various blades can be mounted, the cutting diameter d_1 (cutting radius r_1) is the maximum possible value

Note 1 to entry: See Figure 2.



a Shaded area (see 5.2.1.2)

Figure 2 — Cutting diameter and cutting width

3.1.13
cutting width
b_1
for tools where various blades can be mounted, the cutting width b_1 is the maximum possible value

Note 1 to entry: See Figure 2.

3.1.14
deflector
projecting part exchangeably mounted or firmly connected by bonding to the body or part of the body which performs chip thickness limitation

Note 1 to entry: The deflector can also be called a "counter-knife".

Note 2 to entry: See Figures 3 b), c), d), e) and g).

3.1.15
cutting blade projection
t
difference between the radius r_1 of the cutting circle and the radius r_5 of the back supporting circle where $t = r_1 - r_5$

Note 1 to entry: See Figure 3.

3.1.16
radial cutting edge projection
c_r
difference between the deflector (not round form tools) or the body (round form tools) and the cutting edge measured in the direction of the normal to the profile

Note 1 to entry: See Figures 2 and 3.

3.1.17
axial cutting edge projection
c_a
distance measured axially between the axial cutting edge and the body or the deflector

Note 1 to entry: See Figure 3 a) and Figure 3 d).

3.1.18
round form tool
tool where the body has a circular shape in any cross section perpendicular to the rotational axis of the tool and which performs chip thickness limitation

Note 1 to entry: Auxiliary cutting parts with a deflector or spurs (see 3.1.10 and 3.1.11) are not considered.

Note 2 to entry: See Figures 3 a) and 5.

3.1.19
not round form tool
tool where chip thickness limitation is performed by a deflector (see Figures 3 b), c), d), e) and g)) or where a cross section of the body is not circular

Note 1 to entry: See Figure 3 f).

3.1.20
round form tool set
functional unit consisting of a number of individual not round form and/or round form tools clamped together and forming a round form tool shape with radial gaps of less than 5 mm and axial gaps less than 15 mm and the top and the bottom side is a full round

3.1.21
tool combination
unit consisting of a number of loose tools connectable in a variable sequence or extendable in a variable position

3.1.22
non-separable fixing
bonding of the tool components to the body which prevents their change of position relative to each other

3.1.23
separable fixing
fixing of the tool components to the body which allows their change of position relative to each other

3.1.23.1
friction lock fixing
fixing where the relative change of position in a radial direction during rotation is prevented only by the friction forces

Note 1 to entry: See Figure 4.

3.1.23.2
form lock fixing
fixing where the relative change of position in the radial direction during rotation is prevented by the form and arrangement of the components

Note 1 to entry: See Figure 5.

3.1.24
radial and axial approach flats
flat on the radial and/or axial surface of the deflector or of the body, in front of the deflector edge

Note 1 to entry: See Figure 6.

3.1.25
radial approach angle
τ_r
angle between the approach flat and the tangent to the deflector circle at the deflector edge or to the body circle at the point where the radial approach flat begins

Note 1 to entry: See Figure 6.

3.1.26
axial approach angle
τ_a
angle between a plane perpendicular to the axis of the tool and the axial approach flat

Note 1 to entry: See Figure 6.

3.1.27
basic number of teeth
number of teeth cutting in each part of the profile

3.1.28
woodworking machine
machine or a combination of machines intended for machining of wood and similar materials (see 3.1.29) by chip removal, or chipless cutting, sanding and forming, laminating (including gluing and edging) or joining