

PUIDUTÖÖTLEMISMASINAD. OHUTUS. OSA 1: ÜHTSED
NÕUDED

Woodworking machines - Safety - Part 1: Common
requirements (ISO 19085-1:2021)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 19085-1:2021 sisaldab Euroopa standardi EN ISO 19085-1:2021 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 19085-1:2021 consists of the English text of the European standard EN ISO 19085-1:2021.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 07.04.2021.	Date of Availability of the European standard is 07.04.2021.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 13.110

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardimis- ja Akrediteerimiskeskusele. Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardimis- ja Akrediteerimiskeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardimis- ja Akrediteerimiskeskusega: Koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation and Accreditation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation and Accreditation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation and Accreditation:

Homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

EUROPEAN STANDARD

EN ISO 19085-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2021

ICS 13.110

Supersedes EN ISO 19085-1:2017

English Version

Woodworking machines - Safety - Part 1: Common requirements (ISO 19085-1:2021)

Machines à bois - Sécurité - Partie 1: Exigences communes (ISO 19085-1:2021)

Holzbearbeitungsmaschinen - Sicherheit - Teil 1: Gemeinsame Anforderungen (ISO 19085-1:2021)

This European Standard was approved by CEN on 13 February 2021.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

This document (EN ISO 19085-1:2021) has been prepared by Technical Committee ISO/TC 39 "Machine tools" in collaboration with 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 October 2021, and conflicting national standards shall be withdrawn at the latest by October 2021.

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

This document supersedes EN ISO 19085-1:2017.

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).

For the relationship with EU Directive, see informative Annex ZA, which is an integral part of this document.

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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 19085-1:2021 has been approved by CEN as EN ISO 19085-1:2021 without any modification.

Annex ZA (informative)

Relationship between this European Standard and the essential requirements of Directive 2006/42/EC aimed to be covered

This European Standard has been prepared under a Commission's standardization request "M/396 Mandate to CEN and CENELEC for Standardisation in the field of machinery" to provide one voluntary means of conforming to essential requirements of Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (recast).

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding essential requirements of that Directive, and associated EFTA regulations.

Table ZA.1 — Correspondence of this European Standard with Annex I of Directive 2006/42/EC

The relevant Essential Requirements of Directive 2006/42/EC	Clauses/sub-clauses of this EN	Remarks/Notes
		<i>To confer a presumption of conformity with the relevant essential requirements of Directive 2006/42/EC, this standard (providing common requirements for a whole machine family) has to be applied together with one of those standards as specified in the scope (providing specific requirements for a particular category of machinery within this family), once this standard is cited in the Official Journal of the European Communities under Directive 2006/42/EC.</i>
1.1.2 Principles of safety integration		
a) fitted for its function	Clauses 4, 5, 6, 7	
b) eliminate or reduce the risks, give measures, inform	Clauses 4, 5, 6, 7	
c) intended use and reasonably foreseeable misuse	Clauses 4, 5, 6, 7	
d) constraints in use	6.5, 7.3	
e) equipment	5.1, 7.3	
1.1.3 Materials and products	5.2, 6.3	
1.1.4 Lighting	6.6, 7.3	
1.1.5 Design of machinery to facilitate its	6.5	

handling		
1.1.6 Ergonomics	6.5	
1.2.1 Safety and reliability of control systems	4.1, 6.7, 6.8	
1.2.2 Control devices	4.2, 4.3, 4.4, 4.6, 4.7	
1.2.3 Starting	4.3	
1.2.4.1 Normal stop	4.4.1, 4.4.2	
1.2.4.2 Operational stop	4.4.1, 4.4.3	
1.2.4.3 Emergency stop	4.4.1, 4.4.4	
1.2.5 Selection of control or operating mode	4.6	
1.2.6 Failure of the power supply	4.8, 6.7, 6.8	
1.3.1 Risk of loss of stability	5.1, 7.3	
1.3.2 Risk of break-up during operation	5.2, 7.3	
1.3.3 Risks due to falling or ejected objects	5.2, 5.3, 5.5, 5.8, 5.9, 7.3	
1.3.4 Risk due to surfaces, edges or angles	6.15	
1.3.6 Risks relating to variations in the operating conditions	4.7	
1.3.7 Risks related to moving parts	5.6, 5.7, 7.3	
1.3.8 Choice of protection against risks related to moving parts	5.5, 5.6	
1.4.1 General requirements	5.2, 5.5, 5.6, 5.9, 6.3	
1.4.2.1 Fixed guards	5.5.1	
1.4.2.2 Interlocking movable guards	5.5.2	
1.4.2.3 Adjustable guards restricting access	5.6	
1.4.3 Special requirements for protective devices	5.5.3, 5.5.4, 5.5.5, 5.5.6	
1.5.1 Electricity supply	6.4, 6.13	
1.5.2 Static electricity	6.11	
1.5.3 Energy supply other than electricity	6.7, 6.8	
1.5.4 Errors of fitting	6.12	
1.5.6 Fire	6.1, 6.10	
1.5.8 Noise	6.2	
1.5.11 External radiation	6.9	
1.5.12 Laser equipment	6.10	

1.5.13 Emission of hazardous materials and substances	6.3	
1.6.1 Machinery maintenance	6.14, 7.3	
1.6.2 Access to operating position and servicing points	4.2, 6.14, 7.3	
1.6.3 Isolation of energy sources	6.13, 7.3	
1.6.4 Operator intervention	7.3	
1.6.5 Cleaning of internal parts	6.14, 7.3	
1.7.1.1 Information and information devices	6.10, 7.2	
1.7.1.2 Warning devices	6.10, 7.1	
1.7.3 Marking of machinery	7.2	
1.7.4 Instructions	6.10, 7.3, Annex F	
2.3 Machinery for working wood and analogous materials		
a) guiding	5.10	
b) ejection	5.2, 5.3, 5.5, 5.9, 7.3	
c) brake	4.5, 5.4	
d) accidental tool contact	5.5, 5.6, 7.3	

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

Contents

	Page
Foreword	v
Introduction	vii
1 Scope	1
2 Normative references	1
3 Terms and definitions	3
4 Safety requirements and measures for controls	6
4.1 Safety and reliability of control systems.....	6
4.2 Control devices.....	7
4.3 Start.....	7
4.3.1 Direct start.....	7
4.3.2 Start via control power-on.....	7
4.4 Safe stops.....	8
4.4.1 General.....	8
4.4.2 Normal stop.....	8
4.4.3 Operational stop.....	9
4.4.4 Emergency stop.....	9
4.5 Braking function of tools.....	9
4.6 Mode selection.....	10
4.7 Tool speed changing.....	10
4.7.1 Speed changing by shifting the belts on the pulleys.....	10
4.7.2 Speed changing by incremental speed change motor.....	11
4.7.3 Infinitely variable speed by frequency inverter.....	11
4.8 Failure of any power supply.....	11
4.9 Manual reset control.....	11
4.10 Standstill detection and monitoring.....	12
4.11 Machine moving parts speed monitoring.....	12
4.12 Time delay.....	12
4.13 Teleservice.....	12
5 Safety requirements and measures for protection against mechanical hazards	13
5.1 Stability.....	13
5.2 Risk of break-up during operation.....	13
5.3 Tool and tool fixing design.....	14
5.3.1 General.....	14
5.3.2 Spindle locking.....	14
5.3.3 Circular saw blade fixing device.....	14
5.3.4 Flange dimension for circular saw blades.....	14
5.4 Braking.....	14
5.4.1 Braking of tools.....	14
5.4.2 Maximum run-down time.....	15
5.4.3 Brake release.....	15
5.5 Safeguards.....	15
5.5.1 Fixed guards.....	15
5.5.2 Interlocking movable guards.....	15
5.5.3 Hold-to-run control.....	16
5.5.4 Two-hand control.....	16
5.5.5 Electro-sensitive protective equipment (ESPE).....	17
5.5.6 Pressure-sensitive protective equipment (PSPE).....	17
5.5.7 Enabling control.....	17
5.6 Prevention of access to hazardous moving parts.....	17
5.7 Impact hazard.....	18
5.8 Clamping devices.....	18
5.9 Measures against ejection.....	18

5.9.1	General	18
5.9.2	Guards materials and characteristics	19
5.10	Workpiece supports and guides	20
6	Safety requirements and measures for protection against other hazards	21
6.1	Fire	21
6.2	Noise	21
6.2.1	Noise reduction at the design stage	21
6.2.2	Noise emission measurement and declaration	22
6.3	Emission of chips and dust	22
6.4	Electricity	22
6.5	Ergonomics and handling	23
6.6	Lighting	24
6.7	Pneumatics	24
6.8	Hydraulics	24
6.9	Electromagnetic compatibility	24
6.10	Laser	24
6.11	Static electricity	24
6.12	Errors of fitting	24
6.13	Isolation	25
6.14	Maintenance	25
6.15	Relevant but not significant hazards	26
7	Information for use	26
7.1	Warning devices	26
7.2	Marking	26
7.2.1	General	26
7.2.2	Additional markings	27
7.3	Instruction handbook	27
7.3.1	General	27
7.3.2	Additional information	30
	Annex A (informative) List of significant hazards	31
	Annex B (informative) Performance level required	33
	Annex C (normative) Stability test	34
	Annex D (normative) Test for braking function	35
	Annex E (normative) Impact test for guards	37
	Annex F (normative) Noise test code	40
	Bibliography	47

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 39, *Machine tools*, Subcommittee SC 4, *Woodworking machines*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 142, *Woodworking machines - Safety*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition replaces the first edition (ISO 19085-1:2017), which has been technically revised.

The main technical changes compared to the previous edition are as follows:

- in the Scope, “intended for continuous production use” has been added, referring to machines;
- in [Clause 3](#), definitions of “stationary” and “displaceable” machines have been deleted, as well as these terms throughout the document; subclause [5.1](#) was unified, as well as [Annex C](#);
- in [4.3](#), the start via control power-on, used on integrated fed machines, has been added;
- Subclause [4.5](#) has been reordered and clarified;
- in [4.7.3](#), for software parametrization, reference to the relevant B-standard has been added;
- new Subclause [4.13](#) has been added (taken from some specific parts);
- Subclause [5.6](#) has been unified and simplified to better adapt to the different needs of specific parts of the ISO 19085 series;
- in [5.9.2.3](#), light alloy characteristics have been changed, to discern from the other class of guards;
- in [5.10](#), requirements on roller table have been added (taken from some specific parts);
- Subclause [6.2](#) has been updated and a new full noise test code has been added in [Annex F](#).

A list of all parts in the ISO 19085 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

This document is a preview generated by EVS

Introduction

The ISO 19085 series provides technical safety requirements for the design and construction of woodworking machinery. It concerns designers, manufacturers, suppliers and importers of the machines specified in the Scope. It also includes a list of items that the manufacturer need to give to the user.

This document is a type-C standard as stated in ISO 12100.

This document is of relevance, in particular, for the following stakeholder groups representing the market players with regard to machinery safety:

- machine manufacturers (small, medium and large enterprises);
- health and safety bodies (regulators, accident prevention organizations, market surveillance etc.)

Others can be affected by the level of machinery safety achieved with the means of the document by the above-mentioned stakeholder groups:

- machine users/employers (small, medium and large enterprises);
- machine users/employees (e.g. trade unions, organizations for people with special needs);
- service providers, e. g. for maintenance (small, medium and large enterprises);
- consumers (in case of machinery intended for use by consumers).

The above-mentioned stakeholder groups have been given the possibility to participate in the drafting process of this document.

The machinery concerned and the extent to which hazards, hazardous situations or hazardous events are covered are indicated in the Scope of this document.

When requirements of this type-C standard are different from those which are stated in type-A or type-B standards, the requirements of this type-C standard take precedence over the requirements of the other standards for machines that have been designed and built according to the requirements of this type-C standard.

The full set of requirements for a particular type of woodworking machine are those given in the part of the ISO 19085 series applicable to that type, together with the relevant requirements from this document, to the extent specified in the Scope of the applicable part of the ISO 19085 series.

For woodworking machines not covered by a specific applicable part, this document can be used as a guide. However, the designer then needs to perform a full risk assessment according to ISO 12100 and design the means for reducing the risks arising from relevant hazards.

As far as possible, in other parts of the ISO 19085 series, safety requirements have been treated by way of reference to the relevant clauses of this document, to avoid repetition and reduce their length. The other parts contain replacements and additions to the common requirements given in this document.