

**PÕLLUMAJANDUSMASINAD. OHUTUS. OSA 1:
ÜLDNÕUDED**

**Agricultural machinery - Safety - Part 1: General
requirements (ISO 4254-1:2013 +
ISO 4254-1:2013/Amd 1:2021)**

EESTI STANDARDI EESSÕNA**NATIONAL FOREWORD**

See Eesti standard EVS-EN ISO 4254-1:2015+A1:2021 sisaldab Euroopa standardi EN ISO 4254-1:2015 ja selle muudatuse A1:2021 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 4254-1:2015+A1:2021 consists of the English text of the European standard EN ISO 4254-1:2015 and its amendment A1:2021.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas. Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 14.10.2015, muudatus A1 15.12.2021.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation. Date of Availability of the European standard is 14.10.2015, for A1 15.12.2021.
Muudatusega A1 lisatud või muudetud teksti algus ja lõpp on tekstis tähistatud sümbolitega $\boxed{A1}$ $\langle A1 \rangle$. Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.	The start and finish of text introduced or altered by amendment A1 is indicated in the text by tags $\boxed{A1}$ $\langle A1 \rangle$. 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.

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EUROPEAN STANDARD

EN ISO 4254-1 + A1

NORME EUROPÉENNE

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**Agricultural machinery - Safety - Part 1: General
requirements (ISO 4254-1:2013 +
ISO 4254-1:2013/Amd 1:2021)**

Matériel agricole - Sécurité - Partie 1: Exigences
générales (ISO 4254-1:2013 +
ISO 4254-1:2013/Amd 1:2021)

Landmaschinen - Sicherheit - Teil 1: Generelle
Anforderungen (ISO 4254-1:2013 +
ISO 4254-1:2013/Amd 1:2021)

This European Standard was approved by CEN on 27 September 2015. Amendment A1 was approved by CEN on 8 July 2021.

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This European Standard and its Amendment A1 exist 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.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

European foreword

The text of ISO 4254-1:2013 has been prepared by Technical Committee ISO/TC 23 "Tractors and machinery for agriculture and forestry" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 4254-1:2015 by Technical Committee CEN/TC 144 "Tractors and machinery for agriculture and forestry", the secretariat of which is held by AFNOR.

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 2016, and conflicting national standards shall be withdrawn at the latest by April 2016.

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

This document supersedes EN ISO 4254-1:2013.

This 4th edition cancels and replaces the third edition (EN ISO 4254-1:2013) where the following changes were introduced (compared to EN ISO 4254-1:2009):

- requirements related the protection from moving parts involved in the work have been added in 4.2;
- requirements related to vibration have been added in 4.3;
- requirements related to automatic mode of operation have been added in 4.6;
- requirements related to foldable barriers have been added in 4.9;
- requirements related to operating fluids have been added in 4.15;
- requirements related to emergency stop controls have been added in 4.19;
- requirements related to safety related parts of control systems have been added in 4.20;
- requirements related to roll-over and tip-over hazards have been added in 5.7;
- requirements related to PTO drive shaft guard clearance have been added in 6.4.

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 the Machinery Directive 2006/42/EC. It is intended to be used together with EN 15811: 2014 "Agricultural machinery – Fixed guards and interlocked guards with or without guard locking for moving transmission parts (ISO/TS 28923: 2012 modified)".

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

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Endorsement notice

The text of ISO 4254-1:2013 has been approved by CEN as EN ISO 4254-1:2015 without any modification.

A1 Amendment A1 European foreword

This document (EN ISO 4254-1:2015/A1:2021) has been prepared by Technical Committee ISO/TC 23 "Tractors and machinery for agriculture and forestry" in collaboration with Technical Committee CEN/TC 144 "Tractors and machinery for agriculture and forestry" the secretariat of which is held by AFNOR.

This Amendment to the European Standard EN ISO 4254-1:2015 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2022, and conflicting national standards shall be withdrawn at the latest by June 2022.

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

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN websites.

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Endorsement notice

The text of ISO 4254-1:2013/Amd 1:2021 has been approved by CEN as EN ISO 4254-1:2015/A1:2021 without any modification. **A1**

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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. 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. 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.

The committee responsible for this document is ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 3, *Safety and comfort*.

This fifth edition of ISO 4254-1 cancels and replaces the fourth edition (ISO 4254-1:2008), which has been technically revised. In particular, requirements relating to the following have been introduced:

- vibrations;
- protection of moving parts;
- operation of machine parts;
- operating fluids;
- foldable barriers;
- PTO drive shaft guard clearance;
- emergency stop controls;
- safety related parts of control systems;
- roll-over and tip-over hazards.

ISO 4254 consists of the following parts, under the general title *Agricultural machinery — Safety*:

- *Part 1: General requirements*
- *Part 5: Power-driven soil-working machines*
- *Part 6: Sprayers and liquid fertilizer distributors*
- *Part 7: Combine harvesters, forage harvesters and cotton harvesters*
- *Part 8: Solid fertilizer distributors*
- *Part 9: Seed drills*
- *Part 10: Rotary tedders and rakes*
- *Part 11: Pick-up balers*

— *Part 12: Rotary disc and drum mowers and flail mowers*

— *Part 13: Large rotary mowers*

ISO 4254-2, *Anhydrous ammonia applicators*, has been withdrawn.

ISO 4254-3, *Tractors*, has been cancelled and replaced by ISO 26322 (all parts), *Tractors for agriculture and forestry — Safety*.

ISO 4254-4, *Tractors and machinery for agriculture and forestry — Technical means for providing safety — Part 4: Forestry winches*, has been cancelled and replaced by ISO 19472, *Machinery for forestry — Winches — Dimensions, performance and safety*.

A1 Amendment A1 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.

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This document was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 3, *Safety and comfort*, in collaboration with CEN/TC 144, *Tractors and machinery for agriculture and forestry*, in accordance with the agreement on technical cooperation between ISO and CEN (Vienna Agreement).

A list of all parts in the ISO 4254 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. **A1**

Introduction

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

The machinery concerned and the extent to which hazards, hazardous situations and 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.

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Agricultural machinery — Safety —

Part 1: General requirements

1 Scope

This part of ISO 4254 specifies the safety requirements and the means of their verification for the design and construction of self-propelled ride-on machines, mounted, semi-mounted and trailed machines used in agriculture in order to deal with the hazards which are typical for most of the machines. In addition, it specifies the type of information on safe working practices including information about residual risks to be provided by the manufacturer.

This document deals with significant hazards, hazardous situations and events, as listed in Annex A, relevant to this agricultural machinery when used as intended and under the conditions of misuse foreseeable by the manufacturer during normal operation and service.

This part of ISO 4254 is not applicable to

- agricultural or forestry tractors,
 - aircraft and air-cushion vehicles used in agriculture,
 - lawn and garden equipment,
 - machine-specific components or functions (e.g. working tools and/or processes).
- ▣_{A1} — machine-specific performance levels (PL or AgPL).

NOTE Machine-specific standards can give the required PL or AgPL. ▣_{A1}

This part of ISO 4254 is not applicable to hazards related to periodic service, machine conversion and repairs intended to be carried out by professional service personnel, environmental hazards, road safety (e.g. steering, braking), or to the power take-off (PTO) drive shaft; neither is it applicable to guards of moving parts for power transmission except for strength requirements for guards and barriers.

This part of ISO 4254 is not applicable to machines which are manufactured before the date of its publication.

Not all of the hazards dealt with by this part of ISO 4254 are necessarily present on a particular machine. A risk assessment should be carried out by the manufacturer to determine the hazards that are applicable and any hazards in addition to those dealt with by this part or a relevant machine-specific part. The requirements of a machine-specific part of ISO 4254 take precedence over the requirements of this part.

2 Normative references

The following referenced 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.

ISO 3600:▣_{A1} 2015 ▣_{A1}, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Operator's manuals — Content and presentation*

ISO 3744:2010, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering methods for an essentially free field over a reflecting plane*

ISO 3767-1:1998, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays — Part 1: Common symbols*

ISO 3767-2:2008, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays — Part 2: Symbols for agricultural tractors and machinery*

ISO 3776-1:2006, *Tractors and machinery for agriculture — Seat belts — Part 1: Anchorage location requirements*

ISO 3776-2:2013, *Tractors and machinery for agriculture — Seat belts — Part 2: Anchorage strength requirements*

ISO 3776-3:2009, *Tractors and machinery for agriculture — Seat belts — Part 3: Requirements for assemblies*

ISO 3795:1989, *Road vehicles, and tractors and machinery for agriculture and forestry — Determination of burning behaviour of interior materials*

ISO 4253:1993, *Agricultural tractors — Operator's seating accommodation — Dimensions*

ISO 4413:2010, *Hydraulic fluid power — General rules and safety requirements for systems and their components*

ISO 4414:2010, *Pneumatic fluid power — General rules and safety requirements for systems and their components*

ISO 5008:2002, *Agricultural wheeled tractors and field machinery — Measurement of whole-body vibration of the operator*

ISO 5353:1995, *Earth-moving machinery, and tractors and machinery for agriculture and forestry — Seat index point*

ISO 9533:2010, *Earth-moving machinery — Machine-mounted audible travel alarms and forward horns — Test methods and performance criteria*

ISO 10975:2009, *Tractors and machinery for agriculture — Auto-guidance systems for operator-controlled tractors and self-propelled machines — Safety requirements*

ISO 11201:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions in an essentially free field over a reflecting plane with negligible environmental corrections*

ISO 11204:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions applying accurate environmental corrections*

ISO 11684:1995, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Safety signs and hazard pictorials — General principles*

ISO/TR 11688-1:1995, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 1: Planning*

ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction*

ISO 13849-1:2015 ^{A1}, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design*

ISO 13849-2:2012, *Safety of machinery — Safety-related parts of control systems — Part 2: Validation*

ISO 13850:2015 ^{A1}, *Safety of machinery — Emergency stop — Principles for design*

ISO 13857:2008, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs*

ISO 14982:1998, *Agricultural and forestry machinery — Electromagnetic compatibility — Test methods and acceptance criteria*

ISO 15077:2008, *Tractors and self-propelled machinery for agriculture — Operator controls — Actuating forces, displacement, location and method of operation*

ISO 16231-1:2013, *Self-propelled agricultural machinery — Assessment of stability — Part 1: Principles*

ISO 25119-1:2010, *Tractors and machinery for agriculture and forestry — Safety-related parts of control systems — Part 1: General principles for design and development*

ISO 25119-2:2010, *Tractors and machinery for agriculture and forestry — Safety-related parts of control systems — Part 2: Concept phase*

ISO 25119-3:2010, *Tractors and machinery for agriculture and forestry — Safety-related parts of control systems — Part 3: Series development, hardware and software*

ISO 25119-4:2010, *Tractors and machinery for agriculture and forestry — Safety-related parts of control systems — Part 4: Production, operation, modification and supporting processes*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12100 and the following apply.

3.1

normal operation

use of the machine for the purpose intended by the manufacturer by an operator familiar with the machine characteristics and complying with the information for operation, and safe practices, as specified by the manufacturer in the operator's manual and by signs on the machine

Note 1 to entry: Normal operation includes the preparation and storage of the machine, such as

- mounting and dismounting,
- swinging components into work position and vice versa,
- adding or removing ballast and picking up and setting down attachments,
- filling substances and materials that are needed and consumed during the use of the machine (such as twine spools, seed, fertilizers, water and plant protection products),
- the adjustment and setting of the machine, or the combination tractor-machine for the specific condition of the field and/or the crop, and