
Agricultural machinery — Safety —

**Part 13:
Large rotary mowers**

Matériel agricole — Sécurité —

Partie 13: Grandes faucheuses rotatives



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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 4254-13 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 7, *Equipment for harvesting and conservation*.

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

- *Part 1: General requirements*¹⁾
- *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, *Tractors and machinery for agriculture and forestry — Technical means for providing safety — Part 2: Anhydrous ammonia applicators*, has been withdrawn; ISO 4254-3, *Tractors and machinery for agriculture and forestry — Technical means for providing safety — Part 3: Tractors*, has been cancelled and is to be replaced by ISO 26322 (all parts), *Tractors for agriculture and forestry — Safety*; and 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*.

¹⁾ For the purposes of global relevance, the requirements related to the guarding of moving parts for power transmission have been transferred and published as two separate Technical Specifications: ISO/TS 28923, *Agricultural machinery — Guards for moving parts of power transmission — Guard opening with tool*, and ISO/TS 28923, *Agricultural machinery — Guards for moving parts of power transmission — Guard opening without tool*.

Introduction

The structure of safety standards in the field of machinery is as follows:

- type-A standards (basis safety standards) giving basic concepts, principle for design, and general aspects that can be applied to machinery;
- type-B standards (generic safety standards) dealing with one safety aspect or one type of safeguards that can be used across a wide range of machinery;
 - type-B1 standards on particular safety aspects (e.g. safety distances, surface temperature, noise);
 - type-B2 standards on safeguards (e.g. two-hand control devices, interlocking devices, pressure-sensitive devices, guards);
- type-C standards (machinery safety standards) dealing with detailed safety requirements for a particular machine or group of machines.

This document is a type-C standard as stated in ISO 12100:2010.

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

The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this part of ISO 4254. These hazards are specific to large rotary mowers.

Significant hazards that are common to all agricultural machines (self-propelled ride-on, mounted, semi-mounted and trailed) are dealt with in ISO 4254-1.

Agricultural machinery — Safety —

Part 13: Large rotary mowers

1 Scope

This part of ISO 4254, when used together with ISO 4254-1, specifies the safety requirements and their verification for the design and construction of towed, semi-mounted, or mounted large rotary mowers with single or multiple cutting elements which have a cutting diameter of 1 000 mm or greater for any single cutting element assembly, mounted on a propelling tractor or machine, intended for agricultural mowing equipment and designed for shredding crop residue, grass and small brush by impact. It describes methods for the elimination or reduction of hazards arising from the intended use and reasonable foreseeable misuse of these machines by one person (the operator) in the course of normal operation and service. In addition, it specifies the type of information on safe working practices to be provided by the manufacturer.

NOTE 1 These machines can be used for shredding grass. When used outside agriculture, additional requirements not specified in this part of ISO 4254 can be applicable.

This part of ISO 4254 is not applicable to:

- rotary disc mowers, rotary drum mowers, and flail mowers designed for forage crop harvesting as covered by ISO 4254-12;
- arm-type large rotary mowers.
- pedestrian-controlled motor mowers;
- lawn mowers covered by ISO 5395.

When requirements of this part of ISO 4254 are different from those which are stated in ISO 4254-1, the requirements of this part of ISO 4254 take precedence over the provisions of ISO 4254-1 for machines that have been designed and built according to the provisions of this part of ISO 4254.

This part of ISO 4254, taken together with ISO 4254-1, deals with all the significant hazards, hazardous situations and events relevant to large rotary mowers used as intended and under the conditions foreseen by the manufacturer. (A list of significant hazards is provided in Annex A.)

NOTE 2 Example illustrations of two mowers (a rigid-deck large rotary mower and a trail-type multi-section foldable-wing large rotary mower) dealt with in this part of ISO 4254 are shown in C.1.

NOTE 3 Example illustrations of mowers not dealt with in this part of ISO 4254 are shown in C.2.

This part of ISO 4254 is not applicable to environmental hazards, road safety, electromagnetic compatibility, vibration and hazards related to moving parts for power transmission. It is also not applicable to hazards related to maintenance or repairs to be carried out by professional service personnel.

NOTE 4 ISO 14982 specifies test methods and acceptance criteria for evaluating the electromagnetic compatibility of all kinds of mobile agricultural machinery.

This part of ISO 4254 is not applicable to large rotary mowers which are manufactured before the date of publication of this document by ISO.

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.

ISO 148-1:2009, *Metallic materials — Charpy pendulum impact test — Part 1: Test method*

ISO 730:2009, *Agricultural wheeled tractors — Rear-mounted three-point linkage — Categories 1N, 1, 2N, 2, 3N, 3 and 4N, 4*

ISO 3600:1996, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Operator's manual — Content and presentation*

ISO 4254-1, *Agricultural machinery — Safety — Part 1: General requirements*

ISO 4254-12:2012, *Agricultural machinery — Safety — Part 12: Rotary disc and drum mowers and flail mowers*

ISO 5673-1:2005, *Agricultural tractors and machinery — Power take-off drive shafts and power-input connection — Part 1: General manufacturing and safety requirements*

ISO 6508-1:2005, *Metallic materials — Rockwell hardness test — Part 1: Test methods (scales A, B, C, D, E, F, G, H, K, N, T)*

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

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

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4254-1, ISO 4254-12, ISO 12100, and the following apply.

3.1 Rotary mowers

3.1.1

large rotary mower

mower, which may include mulching, with single or multiple cutting-element assemblies which have a cutting diameter of 1 000 mm or greater powered by a propelling machine in which one or more functional components rotate(s) about a vertical axis to cut or shear crop residue, grass and small brush by impact

3.1.1.1

rigid-deck large rotary mowers

large rotary mowers with single or multiple cutting-element assemblies on a common rigid deck

3.1.1.2

multi-section, foldable-wing large rotary mowers

large rotary mowers with multiple cutting-element assemblies and with a single wing or multiple wings that are capable of following the terrain

NOTE The wings are foldable for transport and to clear obstacles, but are intended to operate only with all sections in close proximity to the ground surface when mowing.