



SLOVENSKI STANDARD
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Kmetijski stroji - Varnost - 8. del: Trosilniki mineralnih gnojil (ISO/DIS 4254-8:2015)

Agricultural machinery - Safety - Part 8: Solid fertilizer distributors (ISO/DIS 4254-8:2015)

Landmaschinen - Sicherheit - Teil 8: Mineraldüngerstreuer (ISO/DIS 4254-8:2015)

Matériel agricole - Sécurité - Partie 8 : Distributeur d'engrais solides (ISO/DIS 4254-8:2015)

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ICS:

65.060.25	Oprema za skladiščenje, pripravo in razdeljevanje gnojiv	Equipment for storage, preparation and distribution of fertilizers
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Part 8: Solid fertilizer distributors

*Matériel agricole — Sécurité —**Partie 8: Distributeurs d'engrais solides*

ICS: 65.060.25

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ISO/CEN PARALLEL PROCESSING

This draft has been developed within the International Organization for Standardization (ISO), and processed under the **ISO lead** mode of collaboration as defined in the Vienna Agreement.

This draft is hereby submitted to the ISO member bodies and to the CEN member bodies for a parallel five month enquiry.

Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month approval vote in ISO and formal vote in CEN.

To expedite distribution, this document is circulated as received from the committee secretariat. ISO Central Secretariat work of editing and text composition will be undertaken at publication stage.



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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 4254-8 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 3, and by Technical Committee CEN/TC 144, *Tractors and machinery for agriculture and forestry* in collaboration.

This second edition cancels and replaces the first edition (2009), which has been technically revised.

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 mowers and flail mowers

Part 2, *Anhydrous ammonia applicators*, has been withdrawn, Part 3, *Tractors*, has been cancelled and replaced by ISO 26322 (all parts), *Tractors for agriculture and forestry — Safety*, and Part 4, *Forestry winches*, has been cancelled and replaced by ISO 19472, *Machinery for forestry — Winches — Dimensions, performance and safety*.

Introduction

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

- Type-A standards (basis standards) give basic concepts, principles for design, and general aspects that can be applied to machinery.
- Type-B standards (generic safety standards) deal with one or more safety aspects or one or more types 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-hands controls, interlocking devices, pressure sensitive devices, guards);
- Type-C standards (machinery safety standards) deal with detailed safety requirements for a particular machine or group of machines.

This part of ISO 4254 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 part of ISO 4254. These hazards are specific to solid fertilizer distributors.

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

When provisions of this type-C standard are different from those which are stated in type-A or type-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.

Agricultural machinery — Safety — Part 8: Solid fertilizer distributors

1 Scope

This part of ISO 4254, intended to be used together with ISO 4254-1, specifies the safety requirements and their verification for the design and construction of mounted, semi-mounted, trailed or self-propelled fertilizer distributors for solid fertilizer application, i.e. full width solid fertilizer distributors, solid fertilizer broadcasters, distributors with oscillating tube and line-distributors as well as solid fertilizer distributors driven by an auxiliary engine to be used by one operator only, used in agriculture. In addition, it specifies the type of information on safe working practices (including residual risks) to be provided by the manufacturer.

This part of ISO 4254 deals with all the significant hazards (as listed in Annex A), hazardous situations and events relevant to solid fertilizer distributors, when they are used as intended and under the conditions foreseen by the manufacturer (see Clause 4), excepting the hazards arising from:

- inadequate lighting of working area;
- inadequate visibility from drivers/operators position;
- inadequate seating;
- travelling functions (drive, braking etc.);
- rolling over;
- equipment for loading fertilizer into the machine;
- an auxiliary engine.

This part of ISO 4254 is not applicable to electromagnetic compatibility (EMC), nor to environmental hazards (except noise).

This part of ISO 4254 is not applicable to the following:

- combined seed and fertilizer drills which create a soil trench and deposit fertilizer in said trench;
- machines for distributing granulated pesticides;
- pedestrian controlled distributors;
- knapsack distributors.

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

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 requirements of ISO 4254-1 for machines that have been designed and built according to the provisions of this part of ISO 4254.

ISO/DIS 4254-8

2 Normative references

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

ISO 4254-1:2013, *Agricultural machinery — Safety — Part 1: General requirements*

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 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 12100 and ISO 4254-1 together with the following apply.

- 3.1 solid fertilizer distributor**
machine which spreads fertilizer in a continuous way on the soil surface and in the crop
- 3.2 full width solid fertilizer distributor**
solid fertilizer distributor which spreads fertilizer over the whole surface and which has a working width which is roughly the same as the machine width
- 3.3 solid fertilizer broadcaster**
solid fertilizer distributor which spreads fertilizer over the whole surface and which has a working width which is essentially wider than the machine width
- 3.4 solid fertilizer line-distributor**
solid fertilizer distributor which spreads fertilizer in bands separated by bands without fertilizer and which has a working width which is roughly the same as the machine width

4 Safety requirements and protective measures

4.1 General

Machinery shall comply with the safety requirements and protective measures of this clause. Unless otherwise specified in this part of ISO 4254, the machine shall comply with the requirements of ISO 4254-1.

In addition, the machine shall be designed according to the principles of ISO 12100 for relevant but not significant hazards, which are not dealt with by this document.

4.2 Stability when parked and for manual handling

4.2.1 General

The machine shall be designed to be stable as specified in 6.2.1 of ISO 4254-1. This shall be verified according to 5.1.1. See also 6.1 k) and 6.1 q).

4.2.2 Mounted machines fitted with rollers for manual handling when dismantled

Machines equipped with transport rollers for manual handling shall be designed so that they cannot turn over. This shall be verified according to 5.1.2.

4.2.3 Machines with adjustable supporting devices

When the machine is fitted with adjustable supporting devices, it shall be possible for the operator to adjust these supporting devices without going beneath the machine.

This shall be verified by inspection.

4.3 Distributing components

4.3.1 Swivelling and movable components

4.3.1.1 To limit the risk associated with overhead power lines, 8.2.3 p) and 8.3.4 of ISO 4254-1:2013 shall be applied.

4.3.1.2 Swivelling and movable components that can be manually folded/unfolded shall be fitted with two handles located at a distance of at least 300 mm from the nearest articulation. These handles may be integral parts of the components, provided they are ergonomically designed and clearly identified.

In the case of powered operation, the control shall be of the hold-to-run type and the manual control shall be located outside the swivelling zone.

A device shall be provided to prevent the component from moving when it is in the transport position. If this locking device is a hydraulic valve not directly fitted to the cylinder, the bursting pressure of the circuit's components from the valve to the cylinder shall be 4 times its maximum working pressure.

The unlocking and the unfolding of the components shall be controlled by separate actions from the operator.

4.3.2 Spreading plates and oscillating tubes

4.3.2.1 Protection against unintentional contact with distributing components

Machines shall be designed or guarded in such a way that any unintentional contact with the distributing components at the front, at the rear and at the sides is avoided (e.g. a barrier or a part of the machine). This shall not apply to solid fertilizer distributors with ground-wheel-driven distributing components.

This shall be verified by inspection. See also 6.1 e) and 6.1 m).

4.3.2.1.1 For machines where the maximum working height (h) is less than 1 500 mm from the ground, the guarding shall be achieved by:

- a) a barrier located above the distributing components so that the dimensions given in Figure 1 and Table 1 are respected;