

INTERNATIONAL STANDARD

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Tractors and machinery for agriculture and forestry — Technical means for ensuring safety —

iTeh **STANDARD PREVIEW**

Part 9:

(Equipment for sowing, planting and distributing
fertilizers)

ISO 4254-9:1992

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*Tracteurs et matériels agricoles et forestiers — Dispositifs techniques
permettant d'assurer la sécurité —*

Partie 9: Matériel de semis, de plantation et de fertilisation

INTERNATIONAL

ISO



Reference number
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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.

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.

International Standard ISO 4254-9 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 3, *Safety and comfort of the operator*.

ISO 4254 consists of the following parts, under the general title *Tractors and machinery for agriculture and forestry — Technical means for ensuring safety*:

- *Part 1: General*
- *Part 2: Anhydrous ammonia applicators*
- *Part 3: Tractors*
- *Part 4: Forestry winches*
- *Part 5: Power-driven soil-working equipment*
- *Part 6: Equipment for crop protection*
- *Part 7: Combine harvesters, forage and cotton harvesters*
- *Part 9: Equipment for sowing, planting and distributing fertilizers*

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Tractors and machinery for agriculture and forestry — Technical means for ensuring safety —

Part 9:

Equipment for sowing, planting and distributing fertilizers

1 Scope

This part of ISO 4254 specifies technical means of improving the degree of personal safety of operators and others involved during normal operation and maintenance involving equipment for sowing, planting and distributing fertilizers. These are additional to the requirements of ISO 4254-1 to which reference should also be made.

b) in the case of machines that are changed by powered assistance, e.g. hydraulic, carry a warning decal adjacent to the trap or shear point.

In both cases a) and b), a device for locking the swivelling component in the transport position shall be provided.

Such trap and shear points shall also be cited in the operator's manual.

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2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 4254. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this part of ISO 4254 are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 4254-1:1989, *Tractors and machinery for agriculture and forestry — Technical means for ensuring safety — Part 1: General*.

3 Requirements

3.1 Swivelling components

Trap and shear points which can arise when changing from working to transport position or vice versa shall

a) in the case of machines changed by hand or with additional mechanical assistance, e.g. springs, be safeguarded at the trap or shear points;

3.2 Hoppers

At any hopper which is situated next to a platform on which an operator rides and which incorporates trap or shear points or moving components such as rotating agitators or feed augers, the safety distances given in ISO 4254-1:1989, subclause 7.1 shall be met, or guards, grilles or a cover shall be fitted. When determining these safety distances, all working positions specified in the operator's manual shall be considered.

This requirement for hoppers does not apply to seed drills or similar machinery with ground-wheel-driven components except that any trap or shear points or moving components that are within 230 mm of the uppermost edge of the hopper sides shall be guarded.

In determining these distances, account can be taken of the arrangement and the range of movement of the cover.

Hopper covers shall be provided with a handle(s) which can be grasped effectively to facilitate opening with an effective means of latching them open.

Where parts are fitted which move inside the hopper when the machine is running, a suitable warning

notice shall be affixed to the cover. Reference shall also be made in the operator's manual.

3.3 Platforms

3.3.1 A suitable platform is required on any machine on which operators may have to stand while the machine is being used.

3.3.2 Trap and nip points adjacent to any platform on which a person has to ride while the machine is working shall be guarded.

3.3.3 Where an operator has to move about on the platform, its minimum area shall be 0,36 m² with a minimum width of 450 mm and located as shown in figure 1.

Platforms and steps used for loading purposes only shall have a minimum width of 300 mm.

3.3.4 Machines with platforms more than 550 mm vertically above the ground shall be fitted with suitable mounting steps and handholds. In the event of the step or platform being used for loading purposes, then it shall not be more than 300 mm vertically above the ground or another step or loading platform (see figure 1, dimension *h*).

3.3.5 A warning decal shall be affixed adjacent to all platforms prohibiting riding on the machine, except as required for machine operation. This shall also be covered in the operator's manual.

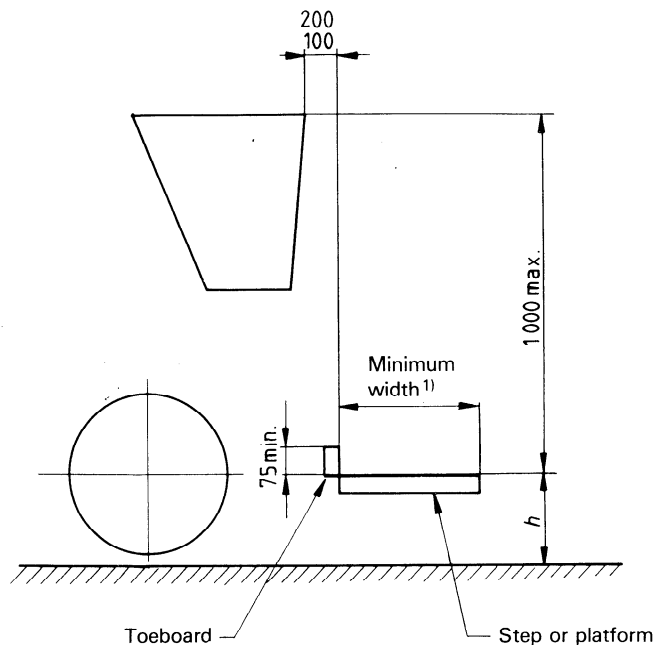
3.3.6 On seed drills on which an operator has to ride and which have a rear platform, there shall be toeboards along the leading edge (see figure 1) with suitable handrails fitted in front of the operator's position and within reach from any part of the platform.

3.4 Loading

3.4.1 The maximum loading height above a stated datum level [either the ground reference plane (GRP), steps or a loading platform] shall be such that an operator carrying bagged goods (e.g. a sack of fertilizer) may conveniently empty them into the machine hopper.

This height shall not exceed 1 000 mm (see figure 1).

Dimensions in millimetres



Loading purposes, *h* = 300 max.

Other purposes, *h* = 500 max.

1) See subclause 3.3.3.

Figure 1 — Implements equipped with platforms without steps

3.4.2 In the case of mounted fertilizer spreaders, which are often loaded from stacks or bagged fertilizer placed at intervals round the perimeter of the field, it is recommended that the datum level in this case should be GRP. Where the top of the hopper of a fertilizer spreader is higher than the recommended level when the machine is in its working position, it should be possible to lower the machine in the three-point-linkage of the tractor, until the hopper height complies with these requirements.

3.5 Bout markers or row markers

For road transport, bout markers or row markers shall not protrude beyond the machine fixed profile. In addition, such markers should either be lockable in the transport position or be in such position that gravity prevents unintentional unfolding.

4 Specific machines

4.1 Single seed (precision) drills

Any components facing outwards in the outside seeding units, which are in motion when the machine is in use, shall be guarded. Where seeding units are interchangeable, the operator's manual

shall specify that only those units that have guarded driving components shall be fitted on the outside.

4.2 Planting and sowing machines

If an operator rides on the machine, a seat or platform shall be provided. For standing operators, the platform shall be in accordance with 3.3. For seated operators, seats and footrests shall be provided. Any drive components on the outside of the machine and those within the reach of the operator station shall be guarded. Hoppers and their loading heights shall be in accordance with 3.2 and 3.4. Communication between the tractor operator and any other operator shall be feasible.

4.3 Fertilizer distributors

Hoppers, platforms and loading heights shall be in accordance with 3.2 to 3.4.

To prevent the agitator causing a hazard for the fertilizer distributor types shown in figure 2, they may alternatively be designed so that the dimension $a + b$ is equal to or greater than 1 800 mm.

With the spreader at its normal working position (as specified in the operator's manual), there shall be a

horizontal overlap between the side of the hopper or structural framework of the machine at a height of 1 500 mm and the path of motion of the spreading components tip of

- a) 200 mm min. in the case of rotary spreaders; or
- b) 50 mm min. in the case of oscillating spreaders.

See figure 2.

On fertilizer distributors with spreading components located between 1 500 mm and 2 500 mm above GRP in the normal working position, a deflector bar shall be fitted. It shall be located below and as close as possible to the spreading components without interfering with the flow of fertilizer. The bar shall also extend horizontally, by not less than 150 mm beyond the outside edge of the spreading component(s) (see figure 3), in any direction where adequate guarding is not provided by the superstructure of the machine or attachments. When the spreading components are located closer than 1 500 mm from the ground, the deflector bar shall be similarly located above the spreading components.

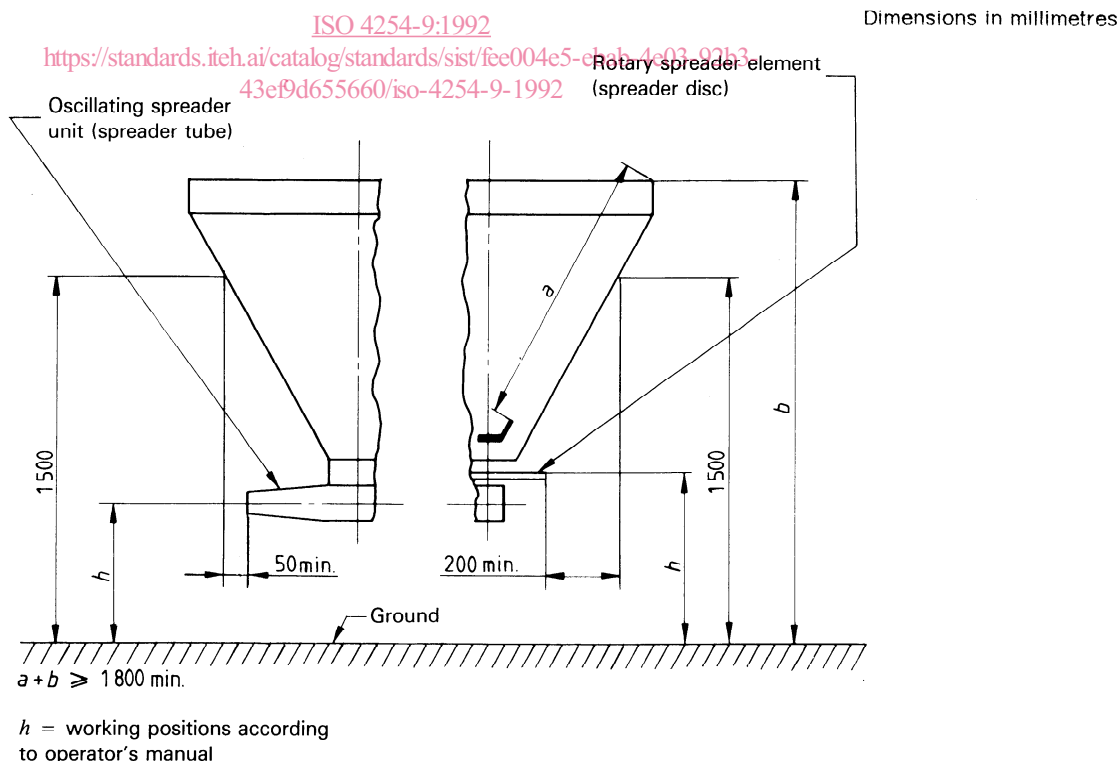


Figure 2 — Hoppers and spreading components — Safety dimensions

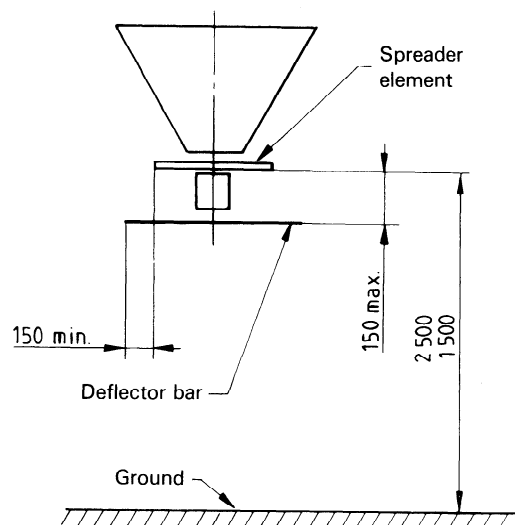


Figure 3 — Location of deflector bar

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