
International Standard



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Sowing equipment — Test methods — Part 2 : Seed drills for sowing in lines

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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

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It has been approved by the member bodies of the following countries:

Australia	Finland	Romania
Austria	France	South Africa, Rep. of
Belgium	Germany, F.R.	Spain
Bulgaria	Iran	Sweden
Canada	Italy	Switzerland
China	Korea, Dem. P. Rep. of	Turkey
Denmark	Poland	United Kingdom
Egypt, Arab Rep. of	Portugal	USSR

The member bodies of the following countries expressed disapproval of the document on technical grounds:

India
New Zealand
USA

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Sowing equipment — Test methods — Part 2 : Seed drills for sowing in lines

0 Introduction

The aim of this part of ISO 7256 is to make available to test offices and other interested organizations a standardized test method permitting reproducibility of tests when they are carried out in geographically remote areas and/or in different climatic conditions; the main objective being comparability for any one model of equipment.

This condition of reproducibility limits the number of mandatory tests which can be used and eliminates mandatory tests in the field. However, these tests may be carried out optionally at the instigation of the test office or at the request of the manufacturer.

The test method takes into account the effects of the type of seed, the level of seed in the hopper, the application rate adjustment, the forward speed, the slope of the ground and the condition of the soil surface (bumps).

1 Scope and field of application

This part of ISO 7256 specifies a test method for seed drills for sowing in lines, including seed drills attached to a basic machine.

The test method permits the determination of performance using reproducible tests so that comparable results in numerical or graphical form which take into account the influence of the following can be obtained:

- type of seed;
- the forward speed;
- the level of seed in the hopper;
- the application rate adjustment;
- the slope of the ground;
- the condition of the soil surface (bumps).

Optional tests (see annex B) may supplement the test method by taking into account the effects of products used for treatment and distribution on the sowing site.

The mandatory tests do not give any picture of the true distribution of the seeds on the sowing site.

NOTE — Part 1 of ISO 7256 deals with single seed drills (precision drills). (See ISO 3339/0 for the classification.)

2 References

ISO 3339/0, *Tractors and machinery for agriculture and forestry — Classification and terminology — Part 0: Classification system and classification.*

ISO 3339/4, *Tractors and machinery for agriculture and forestry — Classification and terminology — Part 4: Sowing and planting equipment.*¹⁾

ISO 3534, *Statistics — Vocabulary and symbols.*

ISO 5698, *Agricultural machinery — Hoppers — Manual loading height.*

ISO 5699, *Agricultural machines, implements and equipment — Dimensions for mechanical loading with bulk goods.*

ISO 7424, *Agricultural equipment — Matching of wheeled tractors and rear mounted implements — Code numbering system.*

3 Definitions

For the purpose of this part of ISO 7256, the following definitions apply.

3.1 seed drills for sowing in lines: See ISO 3339/4.

3.2 feed mechanism (for seed): A mechanism which takes seed from a hopper and transfers it at a constant determined flow rate into a furrow created by the coulter.

3.3 flow rate (of seed): The quantity, expressed as mass or volume, of seed sown per unit time.

3.4 application rate (of seed): The quantity, expressed as mass or volume, of seed sown per unit length or unit area.

1) At present at the stage of draft.

3.5 hopper height: The internal height of the hopper, *H*, shall be the vertical distance between the lower edge of the outlets and the lower edge of the top of the hopper.

4 General test conditions

NOTE — The manufacturer or his representative should be entitled to be present at the tests.

4.1 Seed drills

4.1.1 Selection

The seed drill to undergo testing may be selected by the representative of the test office in agreement with the manufacturer.

The seed drills shall, in all respects, conform strictly to the specifications which the manufacturer is required to send to the test office in writing.

The test report (see annex C) shall specify how the seed drill to be tested was chosen.

If the test on the seed drill is associated with a test on a basic machine, the seed drill chosen shall be that attached to the basic machine to be tested.

4.1.2 Manufacturer's instructions¹⁾

Use the seed drill in accordance with the manufacturer's instructions, which shall specify, among other things

- a) the maximum working speed, expressed in kilometres per hour or in metres per second;
- b) the types of seed which the seed drill can sow or discharge;
- c) in the case where the device includes several interchangeable mechanisms, the types of feed mechanism and types of seed which can be sown or discharged by each model;²⁾
- d) the maximum and minimum application rates permitted by the feed mechanism(s) for each type of seed;
- e) any accessories which may be required for distributing certain types of seed;
- f) the inflation pressure, if the seed drill or the basic equipment is fitted with pneumatic tyres.

4.1.3 Checking of specifications

The technical characteristics supplied by the manufacturer shall be checked and shall be noted in the test report. When comparing laboratory test results with application rate and flow rate

data supplied by the manufacturer, it shall be noted that manufacturer's data may have been adjusted for wheel slip-page.

4.2 Seed

4.2.1 Types

Each of the performance tests shall be carried out with the following seeds:

- type a: an average size seed of regular shape, wheat (mandatory);
- type b: a small round seed (for example clover);
- type c: a light bearded seed (for example rye-grass from Italy);
- type d: a large, irregular shaped seed (for example field bean).

If the manufacturer judges his seed drill to be unsuitable for the sowing of one or more types of seed, these types will be excluded from the tests and the fact noted in the test report.

NOTE — For the mandatory reproducible tests, these seeds should not have been subjected to any treatment (with phytosanitary or other products) likely to modify their physical characteristics.

4.2.2 Physical characteristics

The seed used shall be of current commercial quality.

The dimensions, germination percent, bulk density, mass of 1 000 seeds, purity (percentage of foreign bodies, broken seed and bad seed), and the water content of each batch shall be noted in the test report.

4.3 Ambient conditions

The degree of atmospheric humidity shall be noted in the test report.

5 Mandatory tests³⁾

5.1 Nature of tests (see annex A)

The essential aim of these tests is to determine the evenness of the flow rate and the accuracy of metering.

These tests shall be carried according to two methods:

- static tests;
- mobile tests;

to give the appropriate results.

1) These instructions shall be attached to the test report.

2) Applicable to seed drills for ergot.

3) For the optional tests, see annex B.