
Kmetijski stroji – Odlagalni in metalni trosilniki mineralnih gnojil – Varovanje okolja – 1. del: Zahteve

Agricultural machinery - Solid fertilizer broadcasters and full width distributors - Environmental protection - Part 1: Requirements

Landmaschinen - Ausleger- und Wurf-Mineraldüngerstreuer - Umweltschutz - Teil 1: Anforderungen

Matériel agricole - Distributeurs d'engrais solides en nappe et centrifuges - Protection de l'environnement - Partie 1: Prescriptions

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Ta slovenski standard je istoveten z: EN 13739-1:2003

ICS:

13.020.99	Drugi standardi v zvezi z varstvom okolja	Other standards related to environmental protection
65.060.25	U] ^ { ¨ Á ¨ Á ¨ ¨ ¨ ^ } ¨ Ê] ¨ ¨ [¨ Á ¨ ¨ ¨ ^ ¨ ¨ ¨ ¨ * } [¨ ¨	Equipment for storage, preparation and distribution of fertilizers

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EUROPEAN STANDARD

EN 13739-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2003

ICS 65.060.25

English version

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This European Standard was approved by CEN on 20 December 2002.

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This European Standard exists 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This document (EN 13739-1:2003) has been prepared 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of an identical text or by endorsement, at the latest by September 2003, and conflicting national standards shall be withdrawn at the latest by September 2003.

This European Standard consists of the following parts under the general title *Agricultural machinery – Solid fertilizer broadcasters and full width distributors – Environmental protection*:

— *Part 1: Requirements*

— *Part 2: Test methods*

Annex A is informative.

This document includes a Bibliography.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

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EN 13739-1:2003 (E)**Introduction**

The objective of this European Standard is to specify requirements for fertilizer distributors used according to the instruction handbook, so that:

- unintentional spreading of fertilizers is avoided;
- an even distribution of fertilizer with the desired application rate is achieved.

This standard does not include any direct requirements for the longitudinal distribution. The requirements for evenness of flow rate will partly cover that subject.

1 Scope

This European Standard specifies requirements for the environmental protection for design and construction of mounted, trailed and self-propelled full width solid fertilizer distributors and solid fertilizer broadcasters used in agriculture and horticulture. It also gives the requirements for the minimum content of the instruction handbook.

The standard does not apply to machines which are:

- combined grain and fertilizer drills; or
- equipment for distributing granulated pesticides; or
- solid fertilizer line-distributors (which are dealt with in prEN 13740-1 and in prEN 13740-2).

Personal safety aspects have not been considered in this standard; they are dealt with in prEN 14017.

If the term 'machine' is used it covers both full width distributors and broadcasters, except in the terms and definitions.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revision of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to apply (including amendments).

EN 13739-2:2003, *Agricultural machinery – Solid fertilizer broadcasters and full width distributors - Environmental protection – Part 2: Test methods.*

3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply (see Figure 1).

3.1

solid fertilizer distributor

machine which spreads fertilizer in a continuous way on the soil surface and in the crop

3.1.1

solid full width 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

3.1.2

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

3.1.3

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

3.2

combined grain and fertilizer drill

machine which simultaneously applies seed and fertilizer

3.3

border

line that surrounds the area within which fertilizer is to be applied

3.4

working width

distance between two adjacent tramlines

3.5

throwing width

distance between the left and the right end of a single pattern

3.6

border distance

distance selected from the border to the edge tramline

3.7

edge width

first five meters from the border inside the area within which fertilizer is to be applied

3.8

transition width

distance from the border to the centre between the first and second field spreading tramline

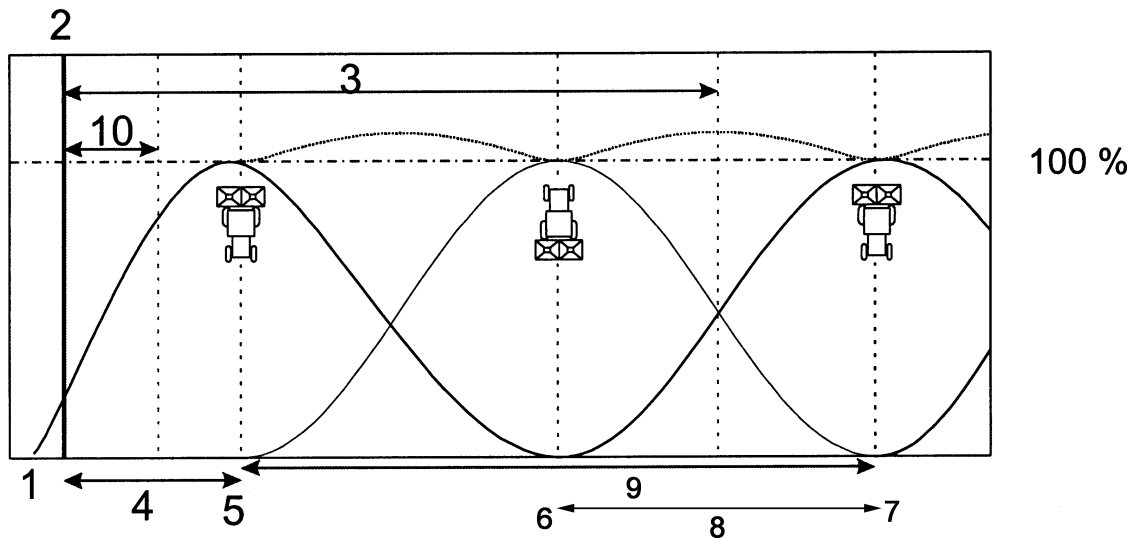
3.9

fertilizer limit

line measured from the border beyond which no fertilizer is found continuously

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Key

- | | |
|--------------------|-----------------------------------|
| 1 Fertilizer limit | 6 First field spreading tramline |
| 2 Border | 7 Second field spreading tramline |
| 3 Transition width | 8 Working width |
| 4 Border distance | 9 Throwing width |
| 5 Edge tramline | 10 Edge width |

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Figure 1 — Illustration of definitions related to border spreading

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3.10

application rate

mass of solid fertilizer applied per unit area, in kg/ha

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3.11

flow rate

amount of solid fertilizer leaving the feeding system(s), in kg/min

NOTE The relation between the flow rate and the application rate is given by the following formula:
Flow rate (kg/min) = [application rate (kg/ha) × travelling speed (km/h) × working width(m)] :600

3.11.1

intended flow rate

flow rate desired by the user

3.11.2

obtained flow rate

flow rate given by the machine for a certain machine control setting during spreading in simulated conditions as described in EN 13739-2.

3.12

spillage

fertilizer which falls uncontrolled from the machine to the ground when the feeding device is closed or disengaged

4 Requirements

4.1 General

The machine shall be designed to allow easy handling and adjustments for different types of fertilizers to be used, in order to ensure that the chosen amount of fertilizer per unit area is spread evenly and on the surface at which it is aimed. The machine shall fulfil at least the requirements given 4.2 up to 4.13.

NOTE The manufacturer should also take into consideration that the machine may work in a corrosive environment.

4.2 Hopper filling opening

The machine shall be designed to minimize the risk that undesirable materials will cause blockages and influence the flow rate or the distribution spreading pattern in a negative way. This can for example be achieved by a grid.

4.3 Cleaning and emptying of residuals

Emptying and collecting the fertilizer from the hopper shall be possible without spreading and without unintentional flow to the ground. If tools are necessary to empty the hopper they shall be delivered with the machine and a place shall be provided on the machine for their storage.

It shall be possible for a person, standing on the ground or on the existing access means to clean the machine.

4.4 Contact with obstacles

On a full width distributor fitted with a boom with a working width more than 10 m, the outer end of the boom shall be able to move backwards in case of contact with obstacles in the field. If the full width distributor is moved forwards at 8 km/h and the obstacle is within 90 % to 100 % of half the boom width measured from the middle of the track, the boom or sections of the boom shall be able to give way without being damaged (see Figure 2).

The boom sections shall return automatically to their original position after contact with the obstacle.

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