SLOVENSKI STANDARD
SIST EN 13739-1:2011

01-december-2011

Nadomešča:
SIST EN 13739-1:2004
SIST EN 13739-1:2004/AC:2004

Kmetijski stroji - Odlagalni in metalni trosilniki mineralnih gnojil - Varstvo 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

Ta slovenski standard je istoveten z: **EN 13739-1:2011**

ICS:

13.020.99	Drugi standardi v zvezi z varstvom okolja	Other standards related to environmental protection
65.060.25	Oprema za skladiščenje, pripravo in razdeljevanje gnojiv	Equipment for storage, preparation and distribution of fertilizers

SIST EN 13739-1:2011 **en,fr**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13739-1

October 2011

ICS 65.060.25

Supersedes EN 13739-1:2003

English Version

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

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

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Contents

Foreword

This document (EN 13739-1:2011) 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of an identical text or by endorsement, at the latest by April 2012, and conflicting national standards shall be withdrawn at the latest by April 2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 13739-1:2003.

This 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*

The following changes were introduced compared to the previous version:

— an update of the normative references.

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

Introduction

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

a) unintentional spreading of fertilizers is avoided;

b) an even distribution of fertilizer with the desired application rate is achieved.

This European 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:

a) combined grain and fertilizer drills; or

b) equipment for distributing granulated pesticides; or

c) solid fertilizer line-distributors (which are dealt with in EN 13740-1:2003 and in EN 13740-2:2003).

Personal safety aspects have not been considered in this standard; they are dealt with in EN 14017:2005+A2:2009.

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

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.

EN 13739-2:2011, *Agricultural machinery — Solid fertilizer broadcasters and full width distributors — Environmental protection — Part 2: Test methods*

3 Terms and definitions

For the purposes of this document, the following 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

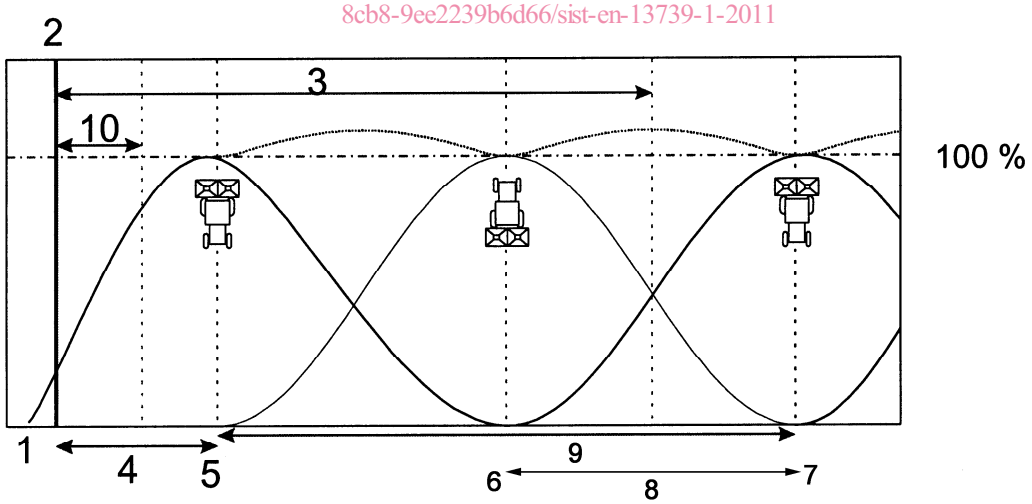
3.5
throwing width
distance between the left and the right end of a single pattern

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



Key

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

Figure 1 — Illustration of definitions related to border spreading

3.10
application rate
weight of solid fertilizer applied per unit area, in kg/ha

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 area is spread evenly and in the area 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