

# **SLOVENSKI STANDARD**

## **SIST EN 13740-1:2004**

**01-januar-2004**

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**Kmetijski stroji – Vrstni trosilniki mineralnih gnojil – Varovanje okolja – 1. del:  
Zahteve**

Agricultural machinery - Solid fertilizer line-distributors - Environmental protection - Part  
1: Requirements

Landmaschinen - Reihen-Mineraldüngerstreuer - Teil 1: Anforderungen

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

**Ta slovenski standard je istoveten z: EN 13740-1:2003**

### **ICS:**

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

**SIST EN 13740-1:2004**

**en**

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EUROPEAN STANDARD

**EN 13740-1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2003

ICS 65.060.25

English version

**Agricultural machinery - Solid fertilizer line-distributors -  
Environmental protection - Part 1: Requirements**Matériel agricole - Distributeurs d'engrais solides en lignes -  
Protection de l'environnement - Partie 1: PrescriptionsLandmaschinen - Reihen-Mineraldüngerstreuer -  
Umweltschutz - Teil 1: Anforderungen

This European Standard was approved by CEN on 28 February 2003.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

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.

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COMITÉ EUROPÉEN DE NORMALISATION  
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## Foreword

This document (EN 13740-1:2003) 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 October 2003, and conflicting national standards shall be withdrawn at the latest by October 2003.

This European Standard consists of the following Parts under the general title *Agricultural machinery – Solid fertilizer line-distributors – Environmental protection*:

— Part 1: Requirements

— Part 2: Test methods

Annex A is informative.

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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 13740-1:2003 (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 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 solid fertilizer line-distributors, including such machines attached to a basic machine, used in agriculture and horticulture. It also gives the requirements for the minimum content of the instruction handbook.

NOTE The standard is also applicable to seed drills if it is stated by the machine manufacturer that the machine is suitable for fertilizer application.

This standard does not apply to machines which are:

- equipment for distributing liquid fertilizer; or
- equipment for distributing liquid or granulated pesticides; or
- solid fertilizer broadcasters and full width distributors (which are dealt with in EN 13739-1 and in EN 13739-2).

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 drilling and spreading line-distributors, except in the 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 applies (including amendments).

EN 13740-2:2003, *Agricultural machinery - Solid fertilizer line-distributors - Environmental protection - Part 2: Test methods*.

### 3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply:

#### 3.1

##### **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

##### **spreading line-distributor**

solid fertilizer line-distributor which spreads fertilizer in bands over the surface

#### 3.3

##### **drilling line-distributor**

solid fertilizer line-distributor which places fertilizer in bands through a coulter into the soil

#### 3.4

##### **solid fertilizer line-distributor attached to a basic machine**

machine which lays down fertilizer in bands on the soil or into the soil and is combined with another machine for example combined grain and fertilizer drill or extra equipment for solid fertilizer distributors

#### 3.5

##### **combined grain and fertilizer drill**

machine which simultaneously applies seed and fertilizer

#### 3.6

##### **working width**

distance between two adjacent tramlines

#### 3.7

##### **application rate**

weight applied in the band of solid fertilizer applied per unit area, in kg/ha

#### 3.8

##### **spillage**

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

#### 3.9

##### **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) × band width (m) × number of bands]: 600

##### 3.9.1

##### **intended flow rate**

flow rate desired by the user

##### 3.9.2

##### **obtained flow rate**

flow rate given by the machine for a certain machine control setting during spreading in simulated conditions as described in EN 13740-2:2003.

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## 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 in 4.2 up to 4.14.

NOTE The manufacturer should also take in 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 transversal distribution in a negative way. This can for example be achieved by a grid.

Hoppers with a volume equal to or greater than 1 000 l shall be so constructed that it is possible to fill the hopper with bulk fertilizer from a bucket, 1,5 m wide or from big bags of 1 000 kg.

### 4.3 Cleaning and emptying of residuals

Emptying and collecting the fertilizer from the hopper shall be possible without spreading or drilling 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

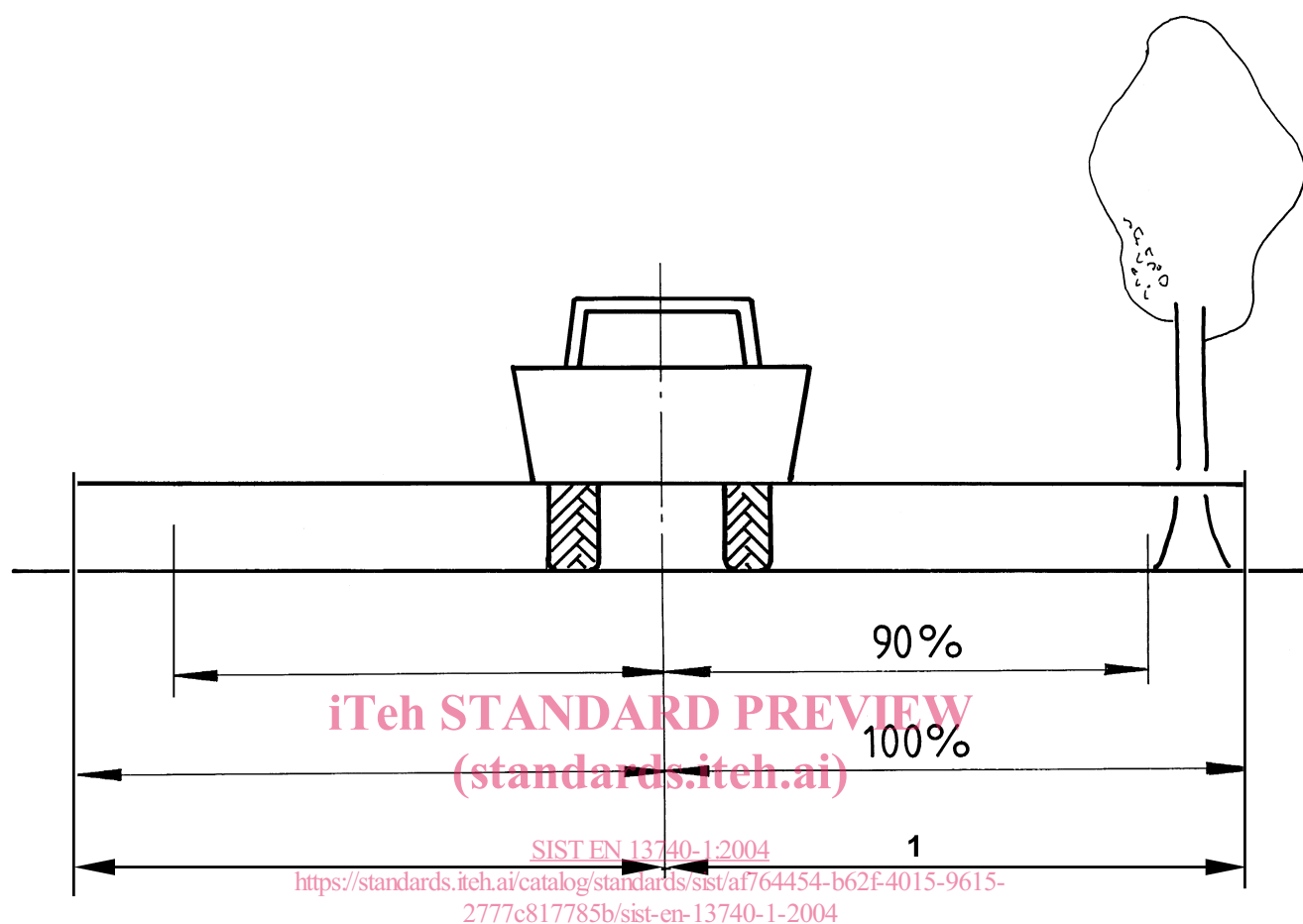
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#### 4.4.1 General

On a spreading line-distributor fitted with booms 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 spreading 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 away without being damaged (see Figure 1).

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

**Key**

1 Half boom width

**Figure 1 — Identification of half boom width****4.4.2 Construction and actions of coulters**

Line-distributors which are designed for drilling fertilizer (drilling line-distributors) shall have coulters which have an overload protection system for each coulter or a group of coulters, to avoid damages caused by objects fixed in the soil.

The working depth of the coulters shall be adjustable.

**4.5 Marker system**

Combined drills wider than 4 m, for drilling fertilizer into the soil, shall be equipped with a marker system which gives the possibility to choose correct distance to next tramline.

**4.6 Estimation of hopper volume**

The basic-hopper of the machine (e.g. the hopper without any extension walls), shall be fitted with a scale in litres by which the volume of fertilizer in the hopper can be determined. In case of an adjustable partition wall of the hopper (for example in combined drills), the hoppers shall be equipped with scales to indicate the actual volume hopper with different adjustments at each position of the partition wall. The scale shall cover at least 10 % to 80 % of the basic-hopper volume and have a graduation for at least each 10 % of the nominal volume of the basic-hopper. The accuracy of the graduations shall be within  $\pm 10$  % of the reading.