SLOVENSKI STANDARD
SIST EN 13118:2001+A1:2009

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Kmetijski stroji - Stroji za spravilo krompirja - Varnost

Agricultural machinery - Potato harvesting equipment - Safety

Landmaschinen - Kartoffelerntemaschinen - Sicherheit

Matériel agricole - Matériel de récolte de pommes de terre - Sécurité

Ta slovenski standard je istoveten z: **EN 13118:2000+A1:2009**

ICS:

65.060.50 Oprema za spravilo pridelkov Harvesting equipment

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EUROPEAN STANDARD

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ICS 65.060.50

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English Version

Agricultural machinery - Potato harvesting equipment - Safety

Matériel agricole - Matériel de récolte de pommes de terre - Sécurité

Landmaschinen - Kartoffelerntemaschinen - Sicherheit

This European Standard was approved by CEN on 28 July 2000 and includes Amendment 1 approved by CEN on 23 May 2009.

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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 CEN Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Foreword

This document (EN 13118:2000+A1:2009) 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of an identical text or by endorsement, at the latest by January 2010, and conflicting national standards shall be withdrawn at the latest by January 2010.

This document includes Amendment 1, approved by CEN on 2009-05-23.

This European Standard supersedes EN 13118:2000.

The start and finish of text introduced or altered by amendment is indicated in the text by tags ⟨A1⟩ ⟨A1⟩.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

⟨A1⟩ For relationship with EU Directive(s), see informative Annexes ZA and ZB, which are integral parts of this document. ⟨A1⟩

Annexes B, C and D are informative.

Annex A is normative and contains the "List of hazards".

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, 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 United Kingdom.

Introduction

This European standard is a type C standard as stated in EN 1070:1998.

The machinery concerned and the extent to which hazards are covered are indicated in the scope of this standard.

Hazards that are common to all the agricultural machines (self-propelled, mounted, semi-mounted and trailed) are dealt with in EN 1553:1999.

1 Scope

This standard specifies specific safety requirements and their verification for the design and construction of potato harvesting machines trailed, mounted or self-propelled which carry out one or more of the following operations: haulm chopping, lifting, picking-up, cleaning, conveying and unloading of potatoes.

This standard is applicable for machines which can be used without modification for harvesting of other crops.

In addition, it specifies the type of information on safe working practices to be provided by the manufacturer.

The list of significant hazards dealt with in this standard is given in Annex A. Annex A also indicates the hazards which have not been dealt with.

Environmental aspects have not been considered in this standard.

This standard applies primarily to machines which are manufactured after the date of issue of the standard.

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 revisions 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 292-1:1991, *Safety of machinery - Basic concepts, general principles for design - Part 1: Basic terminology, methodology.*

EN 292-2:1991, *Safety of machinery - Basic concepts, general principles for design - Part 2: Technical principles and specifications (including amendment A1:1995).*

EN 294:1992, *Safety of machinery - Safety distances to prevent danger zones being reached by the upper limbs.*

EN 418:1992, *Safety of machinery - Emergency stop equipment, functional aspects - Principles for design.*

EN 547-3:1996, *Safety of machinery – Human body measurements – Part 3: Anthropometric data.*

prEN 620:1998, *Continuous handling equipment and systems – Safety requirements for fixed belt conveyors for bulk material.*

EN 1553:1999, *Agricultural machinery - Agricultural self-propelled, mounted, semi-mounted and trailed machines – Common safety requirements.*

ISO 9533:1989, *Earth-moving machinery – Machine-mounted forward and reverse audible warning alarm – Sound test method.*

3 Terms and definitions

For the purposes of this standard the terms and definitions given in EN 292-1:1991 and EN 292-2:1991 apply together with the following.

NOTE Examples of machines and components, illustrating the following definitions are given in Annex B.

3.1
haulm chopping device
device to remove and to evacuate the haulm prior to lifting the crop

3.2
haulm stripping device
device to separate haulm from the potatoes after lifting

3.3
crop lifting device
device to lift the crop from the soil

3.4
cleaning device
device mainly intended to separate the crop from the soil adhering to it

3.5
clod and stone removal devices
devices to remove unwanted soil, stones and clods from the lifted crop

3.6
sorting platform
workplace for sorting on the machine

3.7
two-way communication
ability to convey a message/sound etc in either direction between sorting platforms and the machine or tractor operator

3.8
conveying device
device which transports the crop from one part of the machine to another

3.9
unloading device
device which transfers the crop out of the machine

3.10
high-tip hopper
hopper equipped with a system to raise the tipping axis in relation to the chassis

4 Safety requirements and/or measures

4.1 General

The machinery shall comply as appropriate with EN 292 for hazards which are not dealt with and especially with Annex A of EN 292-2:1991/A.1:1995 when EN 292 does not give precise requirements.

Unless otherwise specified in this standard, the machine shall comply with the requirements of EN 1553:1999 and to Tables 1, 3, 4 and 6 of EN 294:1992.

4.2 Controls

On self-propelled machines, the starting and the stopping of the moving parts shall be controlled only from the operator's station. On trailed and mounted machines, the starting and the stopping of moving parts shall be controllable only from the driver's station of the towing machine.

On machines with a sorting platform, emergency stop equipment complying with EN 418 shall be accessible from each workplace to stop the conveyor of the sorting platform. The accessibility shall be determined according to EN 547-3.

The controls for the adjustment of moving parts shall be located so that they can be operated from the driver's station and/or the sorting platform and with the guards in place.

Tipping and/or high-tip controls shall be of the hold-to-run type and shall be operated from the driver's station.

4.3 Rear-view

Self-propelled machines shall be fitted with an audible warning alarm complying with ISO 9533. This alarm shall be automatically engaged during reversing manoeuvres.

This alarm is not required if the machine is equipped with a closed circuit television (CCTV) which permits the driver to have a clear view on the rear of the machine.

4.4 Haulm chopping device

4.4.1 Protection against unintentional contact with the tools

Machines shall be designed or guarded in such a way that any unintentional contact with the tools at the front, at the rear and at the sides and on the top is avoided.

On the top, an imperforate guard shall cover the tools at least up to the outer points of their path.

At the front, at the rear and at the sides of the accessible zones, the protective devices shall be:

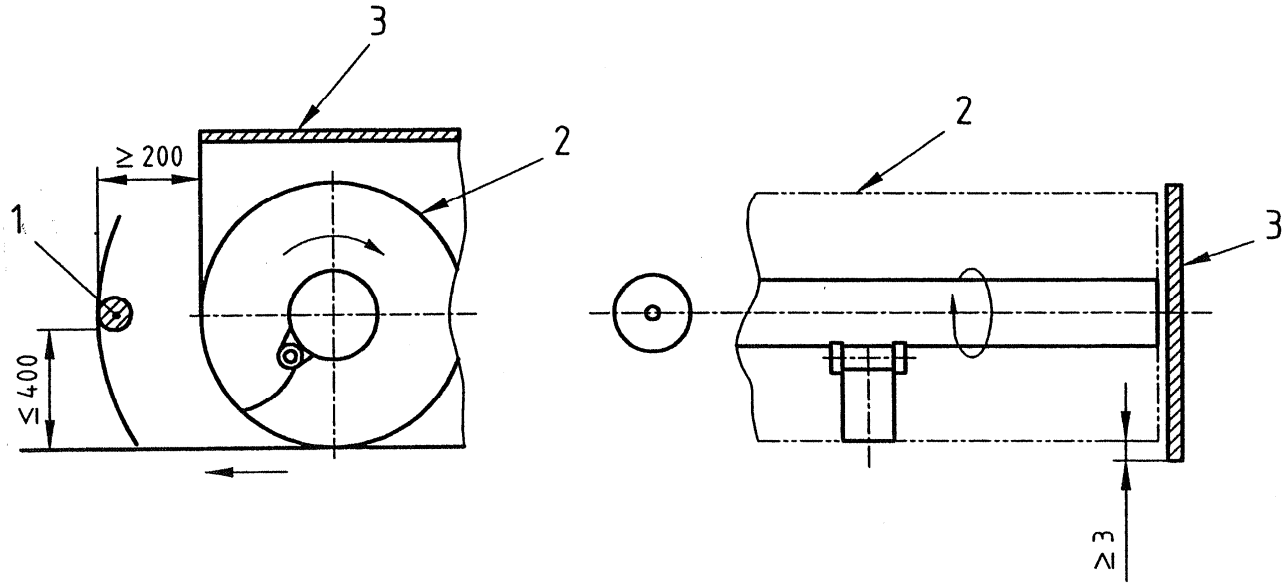
— a barrier located at a maximum height of 400 mm from the lowest point of the tools path and at a minimum horizontal distance of 200 mm from the tools path (see Figure 1a). It shall be possible to fold the lateral barriers for transport. They shall remain attached to the machine and be secured in position; or

— an imperforate guard, located near the tools and in such a way that its lower edge extends by a minimum of 3 mm below the tools path (see Figure 1b); or

— a combination of these two previous protective devices.

The projection on a horizontal plane of these protective devices shall be continuous.

Dimensions in millimetres



1 – barrier
2 – tools path
3 – imperforate guard

Figure 1 a – Protection ensured by a barrier

Figure 1 b – Protection ensured by an imperforate guard

Figure 1 — Haulm chopping device – Protective devices

4.4.2 Conveyor

Any mobile elements of the conveyor located less than 850 mm from the outer contour of the machine shall be guarded except the ejection outlet.

This ejection outlet shall be fitted with:

— a protective device composed of:

a) on the top, an imperforate guard which extends beyond the outer part of the conveyor by a minimum of 150 mm (see Figure 2). When a conveyor belt is used, the lower edge of the top guard shall be placed at 200 mm maximum above the upper plane of the conveyor belt (see Figure 3);

b) at the outer point of the conveyor:

— when an auger is used, a fixed guard, the lower end of which shall extend at least 50 mm below the axis of the screw (see Figure 2);

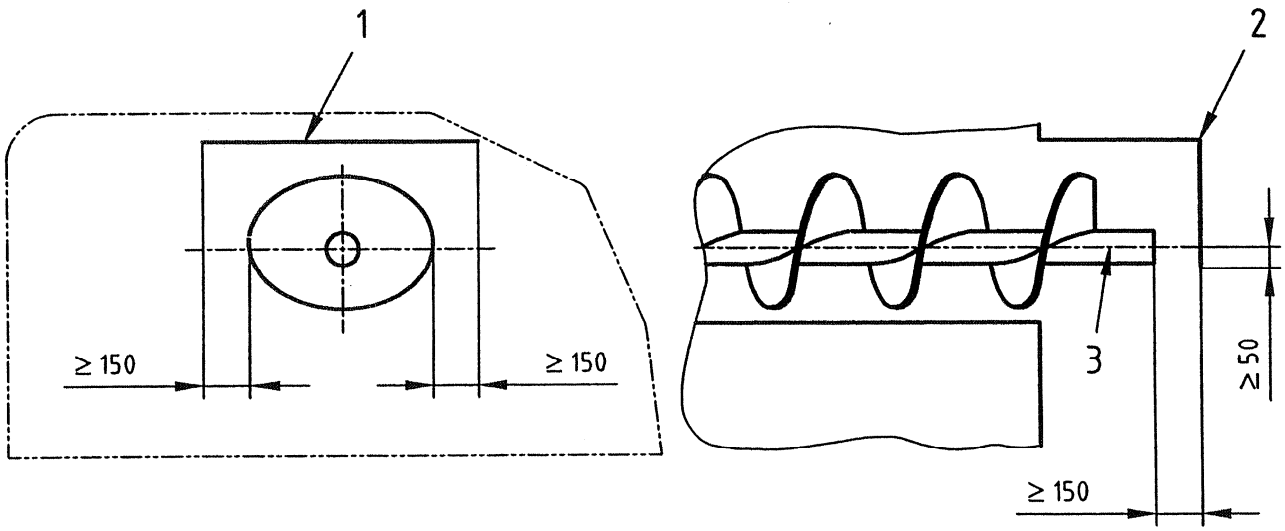
— when a conveyor belt is used, a barrier located in the horizontal plane at 150 mm minimum from any mobile part of the conveyor and in the vertical plane at 200 mm maximum above the upper plane of the conveyor belt (see Figure 4).

The lateral part of the conveying belt shall be guarded against unintentional contact in accordance with 5.1 of prEN 620:1998.

or

— a mobile guard which completely seals the ejection outlet and automatically returns to the closed position when no more material is ejected (see Figure 5).

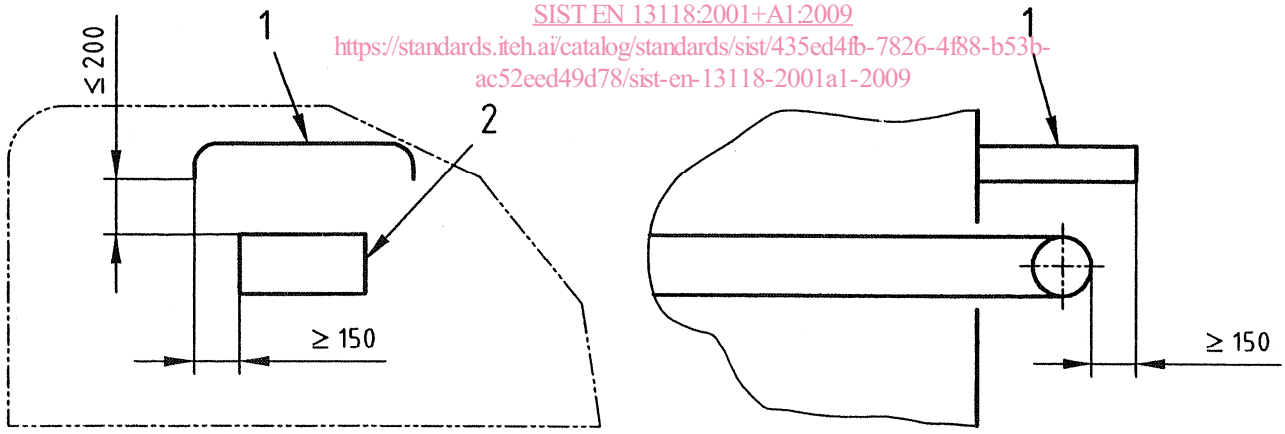
Dimensions in millimetres



1 – imperforate top guard
2 – fixed guard
3 – axis of the screw

Figure 2

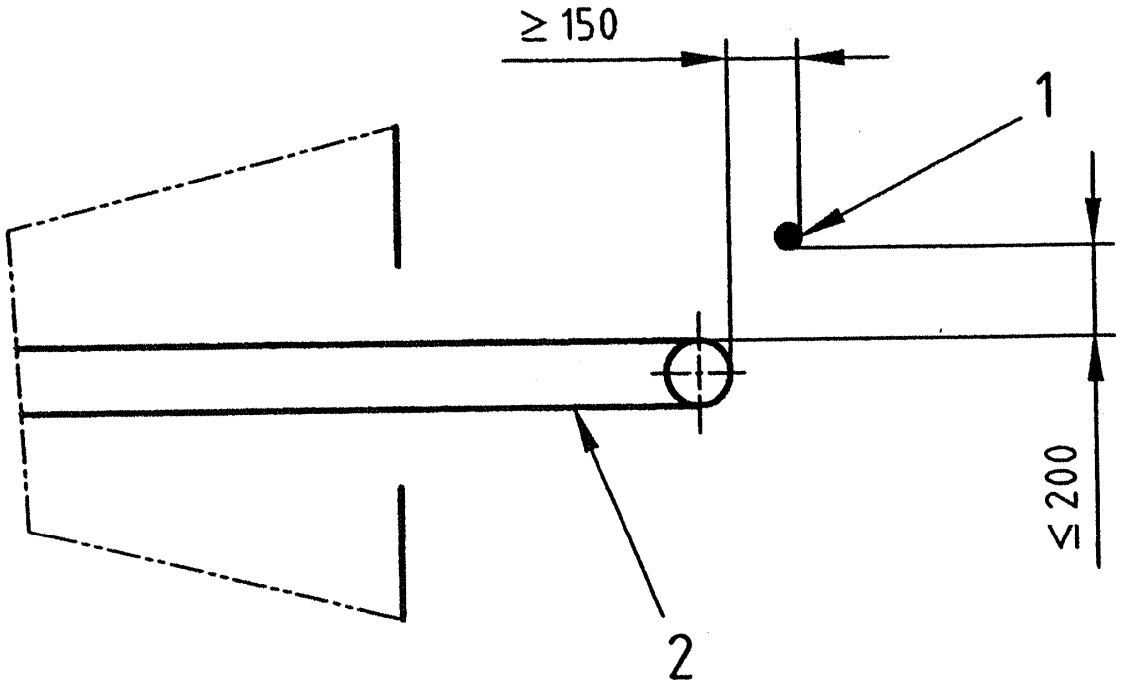
Dimensions in millimetres

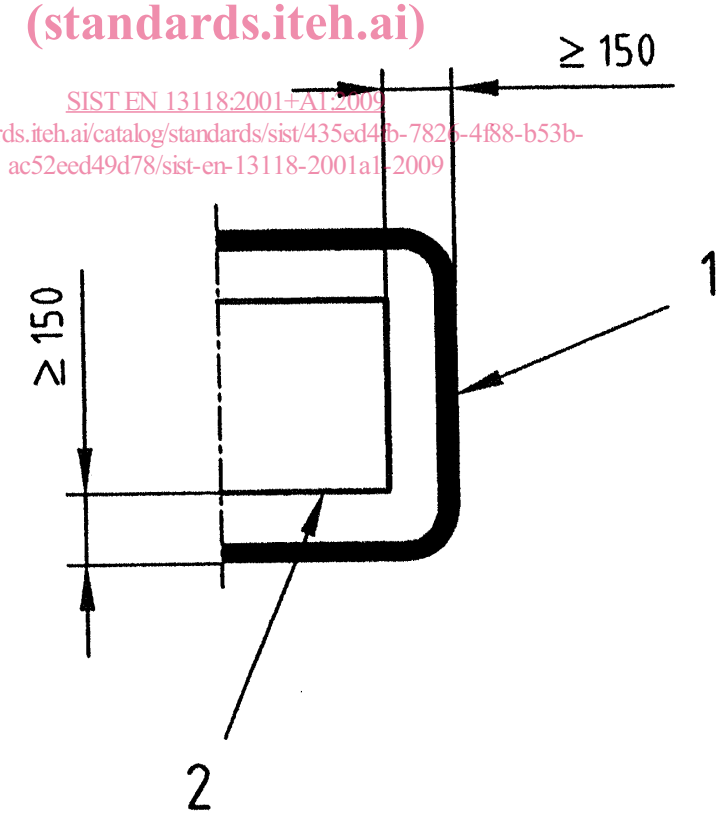


1 – imperforate top guard
2 – conveyor belt

Figure 3

Dimensions in millimetres

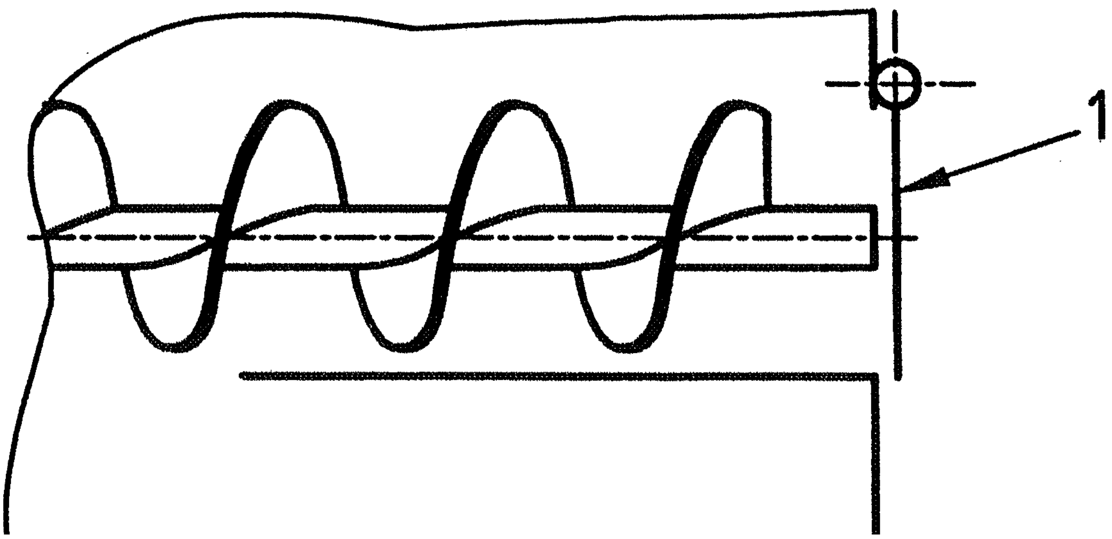




1 – barrier
2 – conveyor belt

Figure 4

Dimensions in millimetres



1 – barrier

Figure 5

4.5 Crop lifting devices

The rotating parts of the power crop lifting devices shall stop when the crop lifting devices are in a raised position.

4.6 Cleaning and conveying devices

4.6.1 Belts

The entry and contact points of the bottom run of the cleaning and conveying belts shall be guarded.

The lateral part of conveying belts shall be guarded against unintentional contact in accordance with 5.1 of prEN 620:1998.

4.6.2 Rollers

The rotating parts of cleaning rollers, haulm stripping devices, clod and stone removal devices shall be guarded against contact from above and on the sides by:

— fixed guards (according to 3.22.1 of EN 292-1:1991) if they do not need to be opened for cleaning and for clearing blockages; or

— fixed guards needing a tool for their opening. These guards shall remain attached to the machine when opened (for example by means of hinges) and automatically lock in the closed position without the use of a tool; or

— interlocking movable guards (according to 3.22.4 of EN 292-1:1991); or

— movable guards fitted with a device which prevents their opening so long as the parts are moving.

The side guards shall extend below the moving parts for a distance of at least 120 mm.

NOTE Requirements for removing blockages will be added in a future revision of this standard. Some suggestions for the prevention of hazards related to blockages and removal of blockages are given in Annex C for information.

4.7 Sorting platform

The sorting platform shall fulfil the requirements of 4.1.5.3 of EN 1553:1999.