



**SLOVENSKI STANDARD**  
**oSIST prEN 16952:2016**  
**01-februar-2016**

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**Kmetijski stroji - Grobe terenske delovne platforme za dejavnosti v sadovnjakih (WPO) - Varnost**

Agricultural machinery - Rough-terrain Work Platforms for Orchard's operations (WPO) - Safety

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**ICS:**

53.020.99	Druga dvigalna oprema	Other lifting equipment
65.060.99	Drugi kmetijski stroji in oprema	Other agricultural machines and equipment

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ICS

English Version

## Agricultural machinery - Rough-terrain Work Platforms for Orchard's operations (WPO) - Safety

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 144.

If this draft becomes a European Standard, 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.

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COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

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prEN 16952:2015 (E)

## European foreword

This document (prEN 16952:2015) 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 document is currently submitted to the CEN Enquiry.

This document 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).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

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## Introduction

This document is a type-C standard as specified in EN ISO 12100.

This document is of relevance, in particular, for the following stakeholder groups representing the market players with regard to machinery safety:

- 1) machine manufacturers (small, medium and large enterprises);
- 2) health and safety bodies (regulators, accident prevention organizations, market surveillance etc.).

Others can be affected by the level of machinery safety achieved with the means of the document by the above-mentioned stakeholder groups:

- 3) machine users/employers (small, medium and large enterprises);
- 4) machine users/employees (e.g. trade unions, organizations for people with special needs);
- 5) service providers, e.g. for maintenance (small, medium and large enterprises);
- 6) consumers (in case of machinery intended for use by consumers).

The above-mentioned stakeholder groups have been given the possibility to participate at the drafting process of this document.

The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this document.

Hazards that are common to all agricultural machines (self-propelled, mounted, semi-mounted and trailed) are dealt with in EN ISO 4254-1.

When provisions of this type C standard are different from those which are stated in type A or B standards, the provisions of this type C standard take precedence over the provisions of the other standards, for machines that have been designed and built according to the provisions of this type C standard.

## 1 Scope

**1.1** This European Standard, when used together with EN ISO 4254-1 and EN 15811, specifies safety requirements and measures for all types and sizes of self-propelled rough-terrain work platforms for orchard's operations (WPO) as defined in 3.1, used in agriculture, designed to work on unimproved natural terrain and/or disturbed terrain and intended to move at least two persons to working positions in an orchard where they are carrying out fruit picking, thinning out, pruning, or other operations related to orchard's upkeep from the work platform with the intention that persons are getting on and off the work platform only at access positions at ground level or on the chassis.

It describes methods for the elimination or reduction of hazards arising from the intended use of these machines by at least two persons (operators) in the course of normal operation and service, except hazards related to conveyor belts and forks. In addition, it specifies the type of information on safe working practices (including residual risks) to be provided by the manufacturer.

When requirements of this document are different from those which are stated in EN ISO 4254-1, the requirements of this document take precedence over the requirements of EN ISO 4254-1 for machines that have been designed and built according to the provisions of this document.

This European Standard, taken together with EN ISO 4254-1 and EN 15811, deals with all the significant hazards, hazardous situations and events (as listed in Table 1) relevant to WPOs, when they are used as intended and under the conditions of misuse foreseeable by the manufacturer.

It does not cover the hazards arising from:

- a) use in potentially explosive atmospheres;
- b) getting on and off the work platform at changing levels.

**1.2** This European Standard does not apply to:

- a) Mobile Elevating Work Platforms (MEWPs) (see EN 280);

NOTE 1 Figure D.4 gives an example of this type of machine.

- b) boom-type MEWPs (see EN 280);

NOTE 2 Figure D.5 and D.6 give examples of this type of machine.

- c) tail lifts (see EN 1756-1 and EN 1756-2);
- d) mast climbing work platforms (see EN 1495);
- e) lifting tables (see EN 1570);
- f) aircraft ground support equipment (see e.g. EN 1915-1 and EN 1915-2);
- g) elevating operator positions on industrial trucks (see EN 1726-2);
- h) unguided work cages suspended from lifting appliances (see e.g. EN 1808).



## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN ISO 4254-1:2015, *Agricultural machinery — Safety — Part 1: General requirements (ISO 4254-1:2013)*

EN ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100:2010, EN ISO 4254-1:2015 and the following apply.

### 3.1

#### **rough-terrain work platforms for orchard's operations (WPO)**

self-propelled machine used in agriculture, designed to work on unimproved natural terrain and/or disturbed terrain, which consists as a minimum of a work platform with controls, an extending structure and a chassis, where the vertical projection of the center of the area of the platform in all platform configurations at the maximum chassis inclination specified by the manufacturer is always inside the tipping lines, for which travelling is allowed with lowered and with raised work platform and it is controlled from a point of control at the chassis or at the work platform, which is intended to move at least two persons to working positions in an orchard where they are carrying out fruit picking, thinning out, pruning, or other operations related to orchard's upkeep from the work platform with the intention that persons are getting on and off the work platform only at access positions at ground level or on the chassis

Note 1 to entry: See Figure 1.

### 3.2

#### **work platform**

fenced platform or a cage which can be moved under load to the required working position and from which carrying out fruit picking, thinning out, pruning, or other operations related to orchard's upkeep can be carried out

Note 1 to entry: See Figure 1.

### 3.3

#### **platform extension extension**

part of the work platform which can shift laterally in respect of the direction of motion of the WPO, and which extends the work platform in order to facilitate the approach to the orchard to perform the necessary operations

### 3.4

#### **extending structure**

structure which is connected to the chassis and supports the work platform. It allows vertical movement of the work platform to its required position

Note 1 to entry: Example of extending structure: scissors mechanism.

Note 2 to entry: See Figure 1.

**prEN 16952:2015 (E)****3.5****chassis**

base of the WPO

Note 1 to entry: See Figure 1.

**3.6****access position**

position(s) to provide access to and from the work platform

**3.7****transport configuration**

configuration of the WPO prescribed by the manufacturer in which the WPO is intended to be delivered to the place of use

**3.8****lowering**

all operations to move the work platform to a lower level

**3.9****raising**

all operations to move the work platform to a higher level

**3.10****self-levelling rough-terrain work platforms for orchard's operations (self-levelling WPO)**

WPO which can compensate variation of terrain slope with variation of work platform's inclination in respect of a longitudinal or transversal axis, or both

**3.11****rated load**

load for which the WPO has been designed for normal operation and which is composed of persons, tools and material acting vertically on the work platform

Note 1 to entry: A WPO usually has more than one rated load (e.g. for work platform and platform extensions if any, or for transport and working configuration).

**3.12****load cycle**

cycle starting from the access position, carrying out work and returning to the access position

**3.13****type test**

test on the representative model of a new design or one incorporating significant changes to an existing design, carried out by or on behalf of the manufacturer or his authorized representative

**3.14****load sensing system**

system of monitoring the vertical load and vertical forces on the work platform

Note 1 to entry: The system includes the measuring device(s), the way the measuring devices are incorporated in the machinery and the signal processing system.

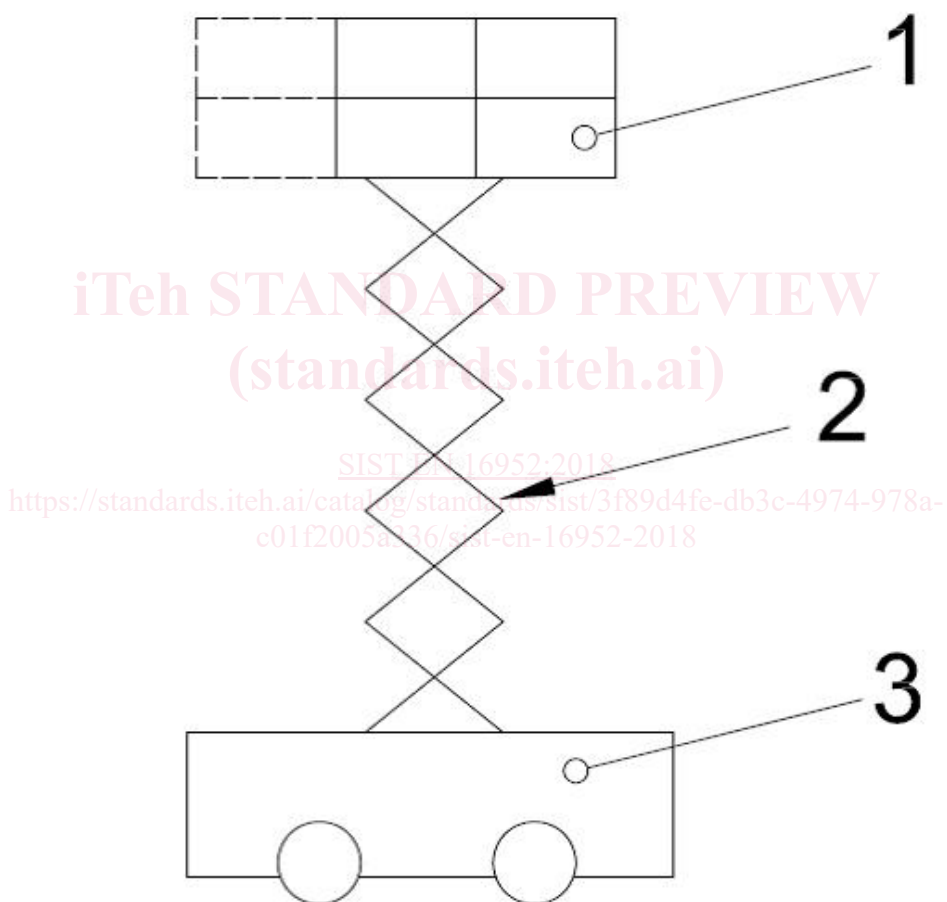
**3.15****wireless control**

means by which the WPO operator's commands are transmitted without any physical connection for at least part of the distance between the control console and the rest of the control system

**3.16****working space**

area in which the work platform is designed to work within the specified loads and forces under normal operating conditions

Note 1 to entry: WPO usually have more than one working space.

**Key**

- |   |                               |
|---|-------------------------------|
| 1 | work platform (see 3.2)       |
| 2 | extending structure (see 3.3) |
| 3 | chassis (see 3.4)             |

**Figure 1 — Illustration of some definitions**

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#### 4 List of hazards

The hazards have been identified by the risk assessment procedure and the corresponding requirements formulated.

A hazard which is not significant and for which, therefore, no requirements are formulated, is shown in the Corresponding Requirements column as NS (not significant).

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Table 1 — List of significant hazards

No. <sup>a</sup>	Hazard	Hazardous situation and event	Clause/subclause of EN ISO 4254-1:2015	Clause/subclause of this Standard
<b>A.1</b>	<b>Mechanical hazard</b>			
A.1.1	Crushing hazard	<ul style="list-style-type: none"> <li>— Controls</li> <li>— Boarding means</li> <li>— Platforms</li> <li>— Power transmission</li> <li>— Working tools</li> <li>— Service/maintenance</li> <li>— Roll-over</li> <li>— Shearing/pinching points</li> <li>— Moving the machine</li> <li>— Stability</li> <li>— Mounting of machines</li> </ul>	4.5.3; 5.1.3.2; 5.1.8; 6.1 4.7.1.1.2; 4.7. 1.2.5; 4.7. 2; 4.8 4.7. 2 6.4 4.10 4.11; 4.17.1; 4.17. 3; 4.9.2; 4.9.3 5.1.2.3; 5.7 5.1.4 5.2 6.2 6.2.2; 6.2.3; 6.3	5.4.3.2; 5.7 - 5.4, 5.5, 5.6.16 NS NS 5.4.4, 7.2.15 NS - 5.3; 5.4.3; 5.4.5 5.2; 5.3; 5.4.1, 5.4.2 5.6.14
A.1.2	Shearing hazard	<ul style="list-style-type: none"> <li>— Controls</li> <li>— Boarding means</li> <li>— Platforms</li> <li>— Power transmission</li> <li>— Working tools</li> <li>— Service/maintenance</li> <li>— Roll-over</li> <li>— Shearing/pinching points</li> <li>— Moving the machine</li> <li>— Stability</li> <li>— Mounting of machines</li> </ul>	4.5.3; 5.1.3.2; 5.1.8; 6.1 4.7.1.1.2; 4.7. 1.2.5; 4.7. 2; 4.8 4.7.2.2 6.4 4.10 4.11; 4.17.1; 4.17. 3; 4.9.2; 4.9.3 5.1.2.3; 5.7 5.1.4 5.2 6.2 6.2.2; 6.2.3; 6.3	5.4.3.2; 5.7 - 5.4, 5.5, 5.6.16 NS NS 5.4.4, 7.2.15 NS 5.4.3 - 5.6.14
A.1.3	Cutting or severing hazard	<ul style="list-style-type: none"> <li>— Working tools</li> </ul>	4.9.2; 4.9.3	NS
A.1.4	Entanglement hazard	<ul style="list-style-type: none"> <li>— Power transmission</li> <li>— Working tools</li> <li>— Starting/stopping the engine</li> </ul>	6.4 4.9.2; 4.9.3 5.1.8	- NS NS
A.1.5	Drawing-in or trapping hazard	<ul style="list-style-type: none"> <li>— Power transmission</li> <li>— Working tools</li> <li>— Starting/stopping the engine</li> </ul>	6.4 4.9.2; 4.9.3 5.1.8	NS NS NS
A.1.6	Impact hazard	<ul style="list-style-type: none"> <li>— Boarding means</li> <li>— Folding elements</li> <li>— Steering</li> </ul>	4.7. 1.2.5 4.9.2; 4.9.3 5.1.3.1	5.6.3 5.6.16 NS
A.1.7	Stabbing or puncture hazard	<ul style="list-style-type: none"> <li>— Working tools</li> </ul>	4.9.2; 4.9.3	NS
A.1.8	Friction or abrasion hazard	<ul style="list-style-type: none"> <li>— Controls</li> <li>— Electrical equipment</li> <li>— Boarding means</li> </ul>	4.5.3; 5.1.3.2 4.12 4.7.1.1.2	5.7 5.8 -

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No. <sup>a</sup>	Hazard	Hazardous situation and event	Clause/subclause of EN ISO 4254-1:2015	Clause/subclause of this Standard
A.1.9	High-pressure fluid injection or ejection hazard	— Hydraulic components	4.13; 6.5	5.9; 5.10
<b>A.2</b>	<b>Electrical hazards</b>			
A.2.1	Contact of persons with live parts (direct contact)	— Electrical equipment	4.12; 5.3; 6.5	5.8
A.2.2	Contact of persons with parts which have become live under fault y conditions (indirect contact)	— Electrical equipment	4.12.1	5.8
A.2.3	Approach to live parts under high voltage	— Overhead power lines	8.2.3; 8.3.4	NS
A.2.4	Thermal radiation or other phenomena such as the projection of molten particles and chemical effects from short circuits, overloads, etc.	— Electrical equipment	4.12.2; 5.3.1	5.8
A.2.5	Electromagnetic phenomena	— Electrical equipment	4.18	5.8.6
<b>A.3</b>	<b>Thermal hazards</b>			
	Burns, scalds and other injuries by possible contact of persons with objects or materials with an extreme high or low temperature, by flames or explosions and also by the radiation of heat sources	— Operating fluids — Cab material — Hot surfaces	4.15 5.1.6 5.5	5.3.10 5.6.2 5.3.8

No. <sup>a</sup>	Hazard	Hazardous situation and event	Clause/subclause of EN ISO 4254-1:2015	Clause/subclause of this Standard
<b>A.4</b>	<b>Hazards generated by noise</b>			
	Hearing loss (deafness), other physiological disorders (e.g. loss of balance, loss of awareness) Accidents due to interference with speech communication and acoustic warning signals	— Noise	4.3	7.1.1.2
<b>A.5</b>	<b>Vibration hazards</b>			
A.5.1	Discomfort, low-back morbidity	— Machine design — Seat	4.4 5.1.2	5.2 (A.5.3.3); 5.4.6; 5.6.10; 5.6.12; 7.1.1.2 NS
<b>A.6</b>	<b>Hazards generated by materials and substances</b>			
A.6.1	Hazards from contact with, or inhalation, of harmful fluids, gases, mists, fumes and dusts	— Operating fluids — Cab material — Battery — Exhaust gases	4.15; 5.4 5.1.6 5.3.1 5.6	5.9; 5.10 NS 5.3.12; 5.8.4; 7.1.1.2 5.3.9
A.6.2	Fire or explosion hazard	— Cab material	5.1.6	5.3.10;
<b>A.7</b>	<b>Hazards generated by neglecting ergonomic principles in machinery design</b>			
A.7.1	Unhealthy postures or excessive effort	— Controls — Boarding means — Service and maintenance — Operator station	4.5 4.7; 4.8 4.11; 4.17.4 5.1.1; 5.1.3; 5.1.5.2	NS - NS 5.6.2
A.7.2	Inadequate consideration of hand-arm or foot-leg anatomy	— Controls — Boarding means — Operator station	4.5 4.7; 4.8 5.1	NS NS NS
A.7.3	Neglected use of personal protective equipment	— Operator's manual	8.2.3	5.6.11
A.7.4	Inadequate local lighting	— Visibility	5.1.7.3	NS
A.7.5	Mental overload and under load, stress	— Controls	4.5	NS