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**Agricultural machinery — Safety —**  
**Part 17:**  
**Root crop harvesters**

*Matériel agricole — Sécurité —*

*Partie 17: Matériel de récolte de racines et tubercules*



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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 7, *Equipment for harvesting and conservation*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 144, *Tractors and machinery for agriculture and forestry*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

A list of all parts in the ISO 4254 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

This document is a type-C standard as stated in ISO 12100:2010.

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

- machine manufacturers (small, medium and large enterprises);
- health and safety bodies (regulators, accident prevention organisations, 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:

- machine users/employers (small, medium and large enterprises);
- machine users/employees (e.g. trade unions, organizations for people with special needs);
- service providers, e.g. for maintenance (small, medium and large enterprises);
- 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 or hazardous events are covered are indicated in the Scope of this document.

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

NOTE Examples of machine and components, illustrating the terms and definitions in [Clause 3](#), are given in [Annex B](#).

# Agricultural machinery — Safety —

## Part 17: Root crop harvesters

### 1 Scope

This document, intended to be used together with ISO 4254-1, specifies the safety requirements and their verification for the design and construction of the following types of root crop harvesting machines trailed, mounted or self-propelled:

- sieving harvesters,
- root lifting harvesters,
- top lifting harvesters,

which carry out more than one of the following operations: haulm/leaf topping, digging/taking-in/lifting, cleaning, conveying and unloading of root crops.

This document is also applicable for haulm/leaf toppers used individually.

This document is not applicable to cleaner-loaders which operate from a heap of beet. For these type of machines, additional hazards are, at present, not dealt with in this document.

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

The list of significant hazards covered in this document is given in [Annex A](#). It also indicates the hazards which have not been dealt with.

Environmental aspects have not been considered in this document. Noise has been considered partly in this document.

This document applies primarily to machines which are manufactured after the date of its publication.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ISO 4254-1:2013, *Agricultural machinery — Safety — Part 1: General requirements*

ISO 4254-1:2013/AMD 1:2021, *Agricultural machinery — Safety — Part 1: General requirements*

ISO 9533:2010, *Earth-moving machinery — Machine-mounted audible travel alarms and forward horns — Test methods and performance criteria*

ISO 11684:1995, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Safety signs and hazard pictorials — General principles*

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

ISO 13850:2015, *Safety of machinery — Emergency stop function — Principles for design*

ISO 13857:2019, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs*

ISO 15534-3:2000, *Ergonomic design for the safety of machinery — Part 3: Anthropometric data*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4254-1:2013, ISO 4254-1:2013/AMD 1:2021, ISO 12100:2010 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

#### 3.1

##### **sieving harvester**

harvesting machine which digs the crops together with a bed of soil and which separates the crops from the soil by sieving

Note 1 to entry: These machines are typically used for harvesting of potatoes.

#### 3.2

##### **root lifting harvester**

harvesting machine which lifts individual crops of a row and which separates remaining adhering soil from the crops

Note 1 to entry: These machines are typically used for harvesting of beets.

#### 3.3

##### **top lifting harvester**

harvesting machine which lifts crops of a row mainly by the leaf or haulm by using a clamping belt and which separates remaining adhering soil from the crops

Note 1 to entry: These machines are typically used for harvesting of carrots or leeks.

#### 3.4

##### **haulm/leaf conveying device**

device for transport of haulms/leaves to haulm/leaf spreader or to the loading device, if any, or to the outside of the machine

#### 3.5

##### **cleaning device**

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

#### 3.6

##### **crop conveying device**

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

#### 3.7

##### **unloading device**

device which transfers the crop out of the machine

#### 3.8

##### **bunker**

device to collect the crop on the machine which can be equipped with a system to raise and combined with an *unloading device* (3.7)