



**SLOVENSKI STANDARD**  
**SIST ISO 4254-7:1995**

**01-september-1995**

---

**Traktorji, kmetijski in gozdarski stroji - Tehnični minimum zagotovitve varnosti - 7. del: Kombajni za spravilo pridelkov, za spravilo bombaža**

Tractors and machinery for agriculture and forestry -- Technical means for ensuring safety -- Part 7: Combine harvesters, forage and cotton harvesters

**iTeh STANDARD PREVIEW**

Tracteurs et matériels agricoles et forestiers -- Dispositifs techniques permettant d'assurer la sécurité -- Partie 7: Moissonneuses-batteuses, récolteuses-hacheuses-chargeuses de fourrage et récolteuses de coton

<https://standards.iteh.ai/catalog/standards/sist/3c69b69c-db9b-4c6e-b989-2517fd186af/sist-iso-4254-7-1995>

**Ta slovenski standard je istoveten z: ISO 4254-7:1995**

---

**ICS:**

65.060.50 Oprema za spravilo pridelkov Harvesting equipment

**SIST ISO 4254-7:1995**

**en**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST ISO 4254-7:1995

<https://standards.iteh.ai/catalog/standards/sist/3c69b69c-db9b-4c6e-b989-2517fdc186af/sist-iso-4254-7-1995>

INTERNATIONAL  
STANDARD

**ISO**  
**4254-7**

First edition  
1995-02-01

---

---

**Tractors and machinery for agriculture and  
forestry — Technical means for ensuring  
safety —**

iTeh **STANDARD PREVIEW**

**Part 7:**

**(Combine harvesters), forage and cotton  
harvesters**

[SIST ISO 4254-7:1995](https://standards.iteh.ai/catalog/standards/sist/3c69b69c-db9b-4c6e-b989-2517fd186af/sist-iso-4254-7-1995)

[https://standards.iteh.ai/catalog/standards/sist/3c69b69c-db9b-4c6e-b989-](https://standards.iteh.ai/catalog/standards/sist/3c69b69c-db9b-4c6e-b989-2517fd186af/sist-iso-4254-7-1995)

[2517fd186af/sist-iso-4254-7-1995](https://standards.iteh.ai/catalog/standards/sist/3c69b69c-db9b-4c6e-b989-2517fd186af/sist-iso-4254-7-1995)

*Tracteurs et matériels agricoles et forestiers — Dispositifs techniques  
permettant d'assurer la sécurité —*

*Partie 7: Moissonneuses-batteuses, récolteuses-hacheuses-chargeuses  
de fourrage et récolteuses de coton*



Reference number  
ISO 4254-7:1995(E)

## 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 4254-7 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 3, *Safety and comfort of the operator*, and Subcommittee SC 7, *Equipment for harvesting and conservation*.

ISO 4254 consists of the following parts, under the general title *Tractors and machinery for agriculture and forestry — Technical means for ensuring safety*:

- Part 1: *General*
- Part 2: *Anhydrous ammonia applicators*
- Part 3: *Tractors*
- Part 4: *Forestry winches*
- Part 5: *Power-driven soil-working equipment*
- Part 6: *Equipment for crop protection*
- Part 7: *Combine harvesters, forage and cotton harvesters*
- Part 9: *Equipment for sowing, planting and distributing fertilizers*

© ISO 1995

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Organization for Standardization  
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

# Tractors and machinery for agriculture and forestry — Technical means for ensuring safety —

## Part 7:

### Combine harvesters, forage and cotton harvesters

#### 1 Scope

This part of ISO 4254 specifies technical means for ensuring the safety of operators and others involved in the course of normal running, maintenance and the use of combine harvesters and self-propelled forage and cotton harvesters. These are additional to the requirements of ISO 4254-1. It also provides guidelines regarding the prevention of accidents arising from the use of combine harvesters, and self-propelled forage and cotton harvesters.

#### 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 4254. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 4254 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 3767-1:1991, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays — Part 1: Common symbols.*

ISO 3767-2:1991, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment*

— *Symbols for operator controls and other displays — Part 2: Symbols for agricultural tractors and machinery.*

ISO 4254-1:1989, *Tractors and machinery for agriculture and forestry — Technical means for ensuring safety — Part 1: General.*

ISO 6689-1:—<sup>1)</sup>, *Equipment for harvesting — Combines and functional components — Part 1: Vocabulary.*

ISO 8909-1:1994, *Forage harvesters — Part 1: Vocabulary.*

#### 3 Definitions

For the purposes of this part of ISO 4254, the definitions given in ISO 6689-1 and ISO 8909-1 apply.

#### 4 Technical means

##### 4.1 Operator's workplace

###### 4.1.1 Internal clearance dimensions

Minimum clearance dimensions inside the cab shall conform to figure 1. Dimensions in figure 1 shall apply with the seat at the maximum height, mid-suspension and in the middle position horizontally.

1) To be published. (Revision of ISO 6689:1981)

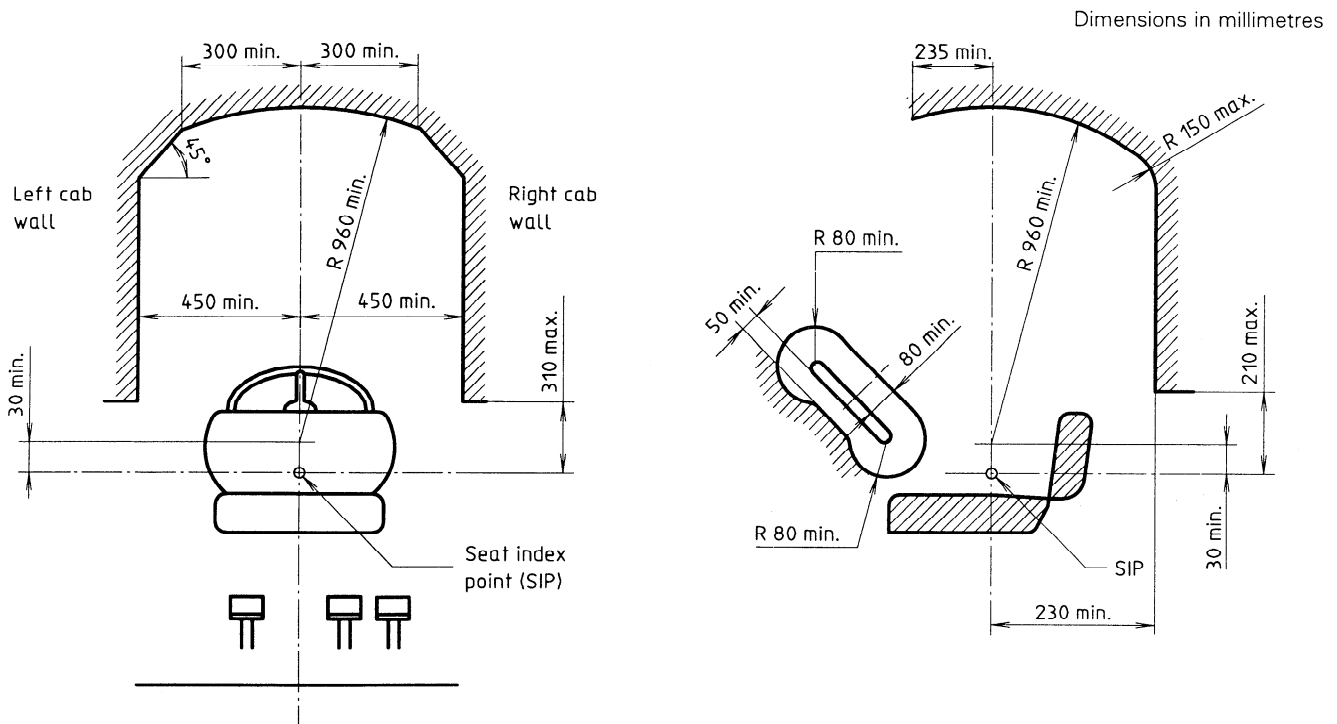


Figure 1 — Cab minimum internal clearance dimensions

(standards.iteh.ai)

#### 4.1.2 Seat dimensions and arrangement

The seat shall give a comfortable sitting position and allow the operator to change position. Dimensions shall be in accordance with figure 2.

It shall be possible to adjust the seat manually without tools by a minimum of  $\pm 30$  mm vertically and a minimum of  $\pm 50$  mm horizontally (fore and aft). The aim shall be to achieve the greatest possible adjustment range:  $\pm 75$  mm is recommended. The vertical adjustment shall be independent of the horizontal adjustment.

#### 4.1.3 Steering-wheel

The steering-wheel shall be comfortably positioned and the position may be adjustable. It is preferred that the centre of the steering-wheel is on the longitudinal centreline of the seat. In any case however, the maximum offset shall not exceed 50 mm. Clearance between fixed parts and the steering-wheel shall be in accordance with figure 1.

#### 4.1.4 Operator controls

The operator controls and their different positions shall be identified with clear and permanent symbols in accordance with ISO 3767-1 and ISO 3767-2, or corresponding text in the language(s) of the user(s).

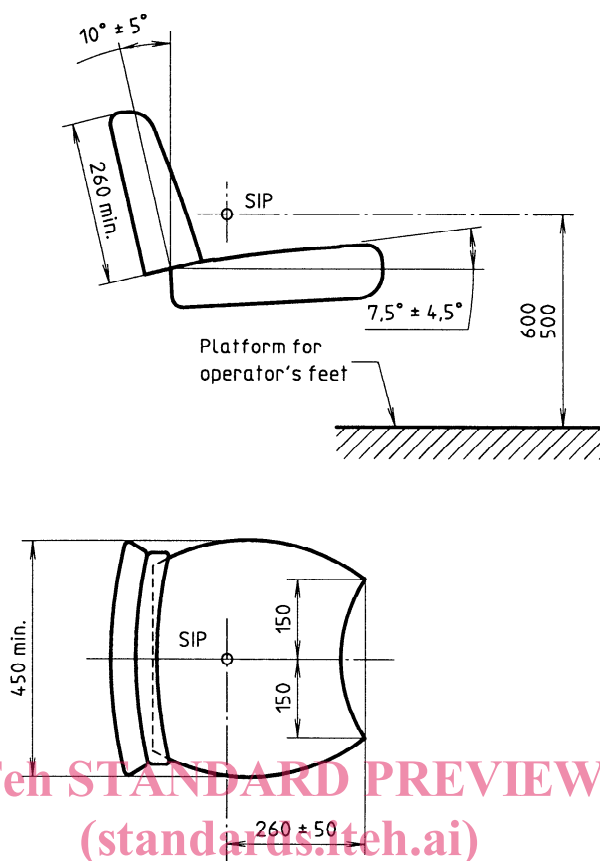
For controls which require an operating force of more than 50 N, a minimum clearance of 50 mm shall be maintained.

For controls which require an operating force of less than 50 N, a minimum clearance of 25 mm shall be maintained; fingertip operation controls are excluded from this requirement, providing there is no risk of inadvertent operation of adjacent controls.

#### 4.1.5 Shearing and pinching points

No shearing or pinching points shall be permitted within reach of the operator's hands or feet when he is seated.

Dimensions in millimetres



**Figure 2 — Operator's seating accommodation**  
<https://standards.iteh.ai/catalog/standards/sist/3c69b69c-db9b-4c6e-b989-2517fd186af/sist-iso-4254-7-1995>

No hazard is deemed to exist between the seat backrest and adjoining components behind it if the adjoining components have a smooth surface and the seat backrest itself has no sharp edges in the interface zone.

#### 4.1.6 Access to operator's workplace

Cab openings shall conform with the dimensions in figure 3. The dimensions in figure 3 relate to

- the minimum size of aperture which shall be achieved both in the door framework and in the "door open" position;
- where the operator foot platform and related door sill are higher than 550 mm and 650 mm respectively above the ground so that additional access steps are required.

There shall be a clear unimpeded path (min. 250 mm width) to the operator's seat into which no controls

impinge, to enable foot placing step by step. This shall apply to all positions of the controls except those used as operator presence controls.

Inadvertent restraint by protrusions, controls, steps or handles catching or holding the operator or his clothes should be minimized.

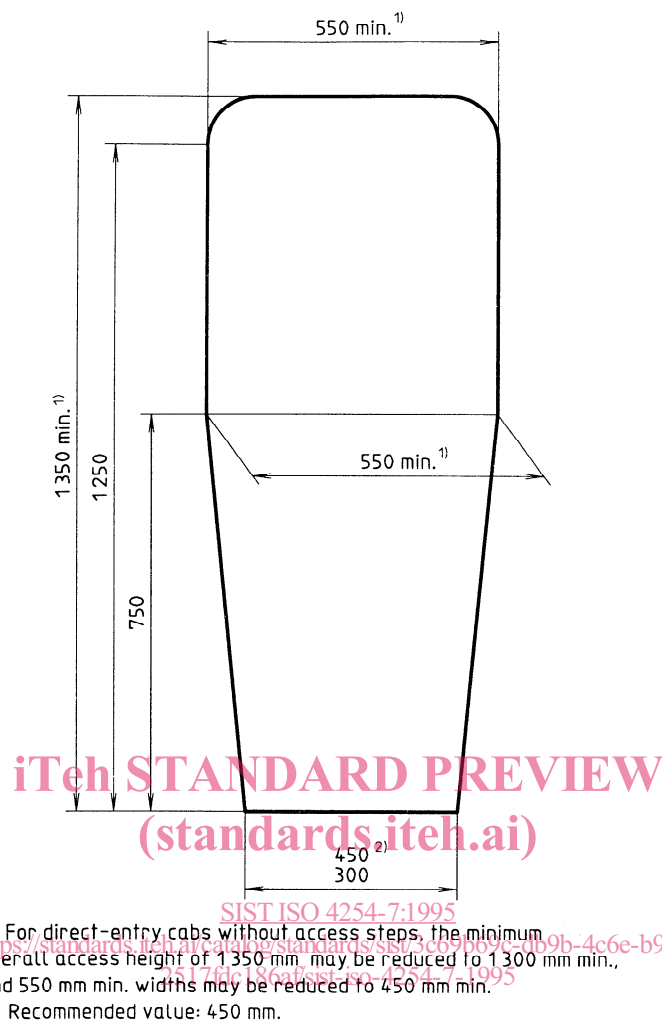
For safe manoeuvring of the machine, as a minimum, two adequately large rearview mirrors shall be provided, one on each side.

If there is a cab, it shall have a means of holding the door open. Closed cabs shall have fan-assisted ventilation with an adequate filter.

#### 4.1.7 Emergency exits from cabs

There shall be at least two exits, on different sides of the cab. (The front, rear and roof may also be considered as sides for this purpose.) The exit shall be designed to be easily opened, normally without tools, from inside the cab.

Dimensions in millimetres



**Figure 3 — Dimensions for main door and access facilities**

The cross-sectional dimensions of emergency exits shall be large enough to enclose an ellipse with principal axes of 640 mm and 440 mm.

- c) A stair inclination is recommended so that the outer edge of the next step down is visible when dismounting from the machine.
- d) Upward or downward movement of the steps shall not create a shearing, pinching or shock situation for the operator or bystander.

#### 4.1.8 Steps to operator's platform/seat

**4.1.8.1** In addition to the requirements of ISO 4254-1:1989, subclause 10.1, the following shall apply.

- a) Steps shall be designed to prevent the build-up of a layer of mud.
- b) In special cases (rice harvesting, track-running gear, slope compensation) the dimension from the ground to the tread surface of the lowest step may be 700 mm.

**4.1.8.2** Handrails or handholds on both sides of the access steps shall be provided. These shall be so designed that the operator can maintain three-point contact at all times. The handrail/handhold cross-section shall be between 25 mm and 35 mm. The lower end of the handrail/handhold shall be located not higher than 1 600 mm from the ground and a minimum clearance of 50 mm shall be provided for hand clearance behind the handrail/handhold. A handrail/handhold grab shall be provided at a height of 1 000 mm above the upper step of any stairway or ladder. The handhold shall be at least 150 mm long.



## 4.2 Other steps, ladders and platforms

**4.2.1** Steps, ladders and access ways for service and maintenance areas shall conform with the requirements in 4.1.8. In special cases (height restrictions), handrails or handholds may be less than 1 000 mm high but not less than 650 mm.

Service platforms shall have guard-rails 1 000 mm high to prevent personnel falling from the machine. In special cases (height restrictions), guard-rails/handholds may be less than 1 000 mm high but not less than 650 mm.

**4.2.2** Appropriate handholds shall be provided. Step-type tread surfaces are not regarded as appropriate handholds.

## 4.3 Header, feed auger and reel

In the operator's manual and at relevant positions on the machine, attention shall be drawn to functional related shearing locations at gathering and/or cutting devices (e.g. header, reel, cutter-bar, pick-up device, auger stripper).

A clearance of 25 mm shall exist between the uppermost part of the reel and adjacent stationary parts.

The header drive disengagement system shall be designed to prevent accidental re-engagement.

A feeder reverser is recommended.

## 4.4 Grain tank and augers

### 4.4.1 Grain tank

A suitable warning note and safety sign shall be included in the operator's manual and on the machine respectively, indicating that entering the grain tank when the machine is running is strictly forbidden.

The grain tank shall be designed to minimize the bridging of grain.

Steps and handholds outside the grain tank shall be provided for safe inspection.

Means to take a sample safely shall be provided.

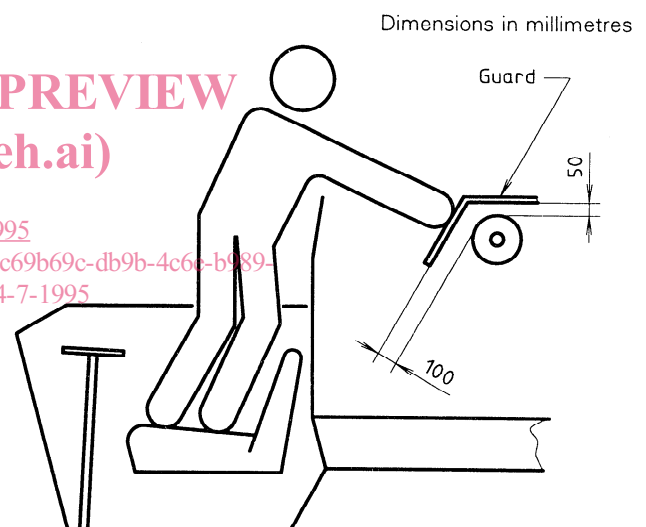
### 4.4.2 Distributor and levelling augers, unloading augers

Augers shall be guarded to prevent unintentional

contact. The cover of the grain tank is not considered to be a safety device unless the operation of the augers is prevented by an interlock device when the cover is open.

Guarding requirements may also be fulfilled if the augers are fitted with screening which

- prevents unintentional contact from the operating position or from other standing locations on the machine (see ISO 4254-1 for safety distances);
- is securely mounted and, if it can be pushed or swung open, takes up its protective position during operation;
- may have maximum openings of 80 mm × 80 mm, provided the apertures are spaced at least 100 mm from the auger circumference within the direct reach zone and at least 50 mm in the remaining reach zone (see figure 4).



**Figure 4 — Guarding of augers**

## 4.5 Maize picker head

**4.5.1** Attention shall be drawn in the operator's manual, supported by a suitable safety sign on the machine, to crushing and shearing points arising on gathering devices or picking rollers within the picking area (working tools) due to the operating conditions. The requirements of 4.3 apply to the transverse auger conveyor.