

### SLOVENSKI STANDARD SIST ISO 5721-2:2017

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Kmetijski traktorji - Zahteve, preskusni postopki in merila sprejemljivosti za vidno polje traktorista - 2. del: Vidno polje s strani in od zadaj

Agricultural tractors - Requirements, test procedures and acceptance criteria for the operator's field of vision - Part 2: Field of vision to the side and to the rear

### iTeh STANDARD PREVIEW

Tracteurs agricoles - Exigences, modes opératoires d'essai et critères d'acceptation relatifs au champ de visibilité du conducteur - Partie 2: Champ de visibilité latéral et vers l'arrière

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65.060.10 Kmetijski traktorji in prikolice Agricultural tractors and trailed vehicles

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# INTERNATIONAL STANDARD

ISO **5721-2** 

First edition 2014-02-01

Agricultural tractors — Requirements, test procedures and acceptance criteria for the operator's field of vision —

Part 2:

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Tracteurs agricoles — Exigences, modes opératoires d'essai et critères d'acceptation relatifs au champ de visibilité du conducteur —

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Reference number ISO 5721-2:2014(E)

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#### ISO 5721-2:2014(E)

#### **Foreword**

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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).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 4, *Tractors*.

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This first edition of ISO 5721:25ttogether with ISO 5721-15 cancels and replaces the second edition of ISO 5721 (ISO 5721:1989), which has been technically revised.1-2-2017

ISO 5721 consists of the following parts, under the general title *Agricultural tractors* — *Requirements, test procedures and acceptance criteria for the operator's field of vision*:

- Part 1: Field of vision to the front
- Part 2: Field of vision to the side and to the rear

## Agricultural tractors — Requirements, test procedures and acceptance criteria for the operator's field of vision —

### Part 2:

### Field of vision to the side and to the rear

#### 1 Scope

This part of ISO 5721 specifies the requirements, test procedures, and acceptance criteria for the field of vision to the side and the rear of the operator of agricultural tractors.

#### 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.

ISO 5006:2006, Earth-moving machinery Operator's field of view Test method and performance criteria

ISO 5721-1:2013, Agricultural tractors Requirements, test procedures and acceptance criteria for the operator's field of vision — Part 1: Field of vision to the front

UNECE R 46, Uniform provisions concerning the approval of devices for indirect vision and of motor vehicles with regard to the installation of these devices (including amendment 1)

#### 3 Terms and definitions

For the purpose of this document, the terms and definitions of ISO 5721-1 apply.

#### 4 General provisions for testing

#### 4.1 General

The fields of vision as described in <u>5.1</u> shall be viewed either directly from the operator's seat or by means for the indirect view. In this last case, the lateral and rear visibility shall be checked for a single setting.

#### 4.2 Measurement accuracy

See 4.1 of ISO 5721-1:2013.

#### 4.3 Eye position

See 4.2 of ISO 5721-1:2013.

#### 5 Requirements, test procedures, and acceptance criteria

#### 5.1 Requirements

#### 5.1.1 General

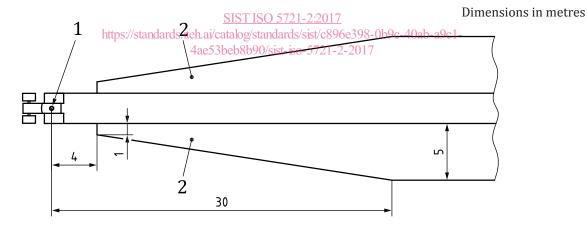
The tractor shall be constructed and equipped in such a way that, in road traffic and in farm use, the operator has an adequate field of vision, under all the usual conditions pertaining to highway use and to work undertaken in fields and at track width appropriate for the overall width of single tires not to exceed 2,55 m.

Mirrors and other means for indirect view shall be attached in such a way that their movements and vibrations do not cause noticeable change of the measured field of view so as to minimize possibility of misinterpretation of the view by the operator. This requirement shall be fulfilled with speeds up to  $80\,\%$  of the maximum design speed.

#### 5.1.2 Field of vision laterally behind the vehicle

The field of vision shall be such that the operator can see on both sides at least a 5 m wide, flat, horizontal portion at a height of 1 m above the road, which is bounded by a plane parallel to the median longitudinal vertical plane of the vehicle and passing through the outermost point of the vehicle and which extends from 30 m behind the operator's eye position to the horizon.

In addition, the portion 1 m above the road shall be visible to the operator over a width of 1 m, which is bounded by a plane parallel to the median longitudinal vertical plane and passing through the outermost point of the vehicle starting from a point 4 m behind the vertical plane passing through the operator's eye position (see Figure 1).



#### Key

- 1 eye position
- 2 field of vision laterally behind the tractor

Figure 1 — Field of vision laterally behind the vehicle

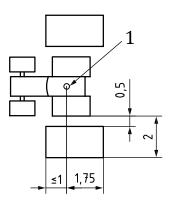
#### 5.1.3 Field of vision beside the vehicle

The field of vision shall be such that the operator can see at least a flat horizontal portion at a height of 1 m above the road, which is bounded by (see Figure 2):

— the plane parallel to the median longitudinal vertical plane of the vehicle which passes 0,5 m from the outermost point of the width of the vehicle,

- the plane parallel to the median longitudinal vertical plane of the vehicle which passes 2 m from the outermost point of the width of the vehicle,
- to the rear, the plane parallel to the vertical plane passing through the operator's eye position and situated at a distance of 1,75 m behind that plane, and
- to the front, the plane parallel to the vertical plane passing through the operator's eye position and situated at a distance of 1 m in front of that plane. If the vertical transverse plane passing through the forwardmost point of the tractor chassis or grill screen is less than 1 m in front of the vertical plane passing through the operator's eve position, the field of vision shall be limited to that plane.

Dimensions in metres



Key

1 eve position

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Figure 2 — Field of vision beside the vehicle in 1 m height above the ground

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### 5.1.4

The requirements of ISO 5006:2006 for the evaluation of the indirect view of earth-moving machines are considered equivalent.

The technical requirements of the UNECE Regulation No. 46 revision 4 including amendment 1 are considered equivalent.

#### 5.2 **Test procedures**

#### 5.2.1 Evaluation, whether additional means for indirect view beside the vehicle are necessary

The tractor shall be placed on a horizontal surface. On a horizontal support level with the reference point, there shall be mounted two point sources of light, 65 mm apart and symmetrically located with respect to the reference point. The support shall be rotatable at its centre point about a vertical axis passing through the reference point. For the purpose of measuring the masking effects, the support shall be so aligned that when simultaneous or alternate switching on of both sources of light, the silhouette (deepest shadow) is determined as the masking effect at 1 m height within the specified fields of vision. Shifting of the eye position shall be permissible around 170 mm to both sides. For the verification, e.g. a mirror at 1 m height shall be carried across the entire specified field of vision. The mirror shall be oriented to the light sources such that these can be detected.

#### 5.2.2 Determination of the field of vision

The field of vision shall be determined by placing powerful light sources at the eye position and measuring the light reflected.