
**Tractors and machinery for
agriculture and forestry — Speed
Identification Sign (SIS)**

*Tracteurs et matériels agricoles et forestiers — Signe d'identification
de la vitesse (SIV)*

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Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Dimensions	2
5 Materials, performance and test requirements	3
5.1 Performance requirements	3
5.2 Adhesion	3
5.3 Colour measurement	3
6 Positioning	4
6.1 Rear facing SIS	4
6.2 Forward facing SIS	4
6.3 Towed equipment combinations	4
7 Operating instructions for towing vehicles	5
Bibliography	6

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 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 the following URL: 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 4, *Tractors*.

Introduction

Implements of husbandry/agricultural equipment operations include the transport of commodities and equipment from the field sites to farmsteads, storage facilities and gathering points for movement by mass transit systems. Equipment often moves between farmsteads and field sites that are not contiguous. Transport may involve moving on public roads (infrastructure) that permit faster ground speeds than that which is used in the fields or within the design considerations of the equipment. Design approaches have been identified to permit selected equipment to move at faster ground speeds in transport configurations. This standard provides a means of identifying equipment that has been specifically designed for maximum ground speed, when operating or travelling on public roads. The means of identification is a Speed Identification Sign (SIS).

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Tractors and machinery for agriculture and forestry — Speed Identification Sign (SIS)

1 Scope

This document specifies the dimensions, characteristics, and positioning of Speed Identification Signs (SIS). These signs indicate the maximum equipment ground speed, based on the ground speed design capability, for an agricultural vehicle.

A rear-facing SIS is visible to other operators on public roads approaching the equipment from behind. A forward-facing SIS, mounted on the front of towed equipment, alerts operators of the towing vehicle of the maximum specified ground speed capabilities at which the equipment combination can be operated.

This document is applicable to self-propelled, semi-integral and towed equipment moving on public roads.

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 2810, *Paints and varnishes — Natural weathering of coatings — Exposure and assessment*

ISO 29862:2007, *Self adhesive tapes — Determination of peel adhesion properties*

3 Terms and definitions

For the purposes of this document, the following terms and definitions 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 <http://www.electropedia.org/>

3.1

ground speed limitation

<towed equipment combination> specified ground speed of any individual machine which is lowest within a towed implement combination

3.2

implement of husbandry

vehicle or special mobile equipment manufactured, designed, or reconstructed for agricultural purposes and, except for incidental uses, primarily used in the conduct of agricultural operations

Note 1 to entry: Included are agricultural equipment in mounted, semi-mounted or towed configurations that are transported by the mobile equipment.

3.3

public road

<highway> entire width between the boundary lines of every road when any part thereof is subject to public regulation for purposes of vehicular travel

Note 1 to entry: This term includes highways (except limited access highways), county or municipal roads, and lanes.

3.4

specified ground speed

maximum ground speed for which the vehicle, towed or semi mounted equipment has been designed, in its original equipment configuration, giving due consideration to requirements on tire capacity, tracking, stability, braking and other related factors

Note 1 to entry: Specified ground speeds for self-propelled equipment shall be with the largest rolling diameter tires available as original equipment, and at the maximum rated engine speed in the top transmission gear or speed range as specified by the original equipment manufacturer.

3.5

Speed Identification Sign

SIS

sign or emblem, displayed on the equipment or vehicle, used to designate the maximum specified ground speed for which a vehicle or towed machine has been designed to operate

3.6

towed equipment combination

multiple towed machines behind a single towing machine

4 Dimensions

4.1 The SIS shall be circular in shape and $200 \text{ mm} \pm 2 \text{ mm}$ in overall diameter as shown in [Figure 1](#).

Dimensions in millimetres

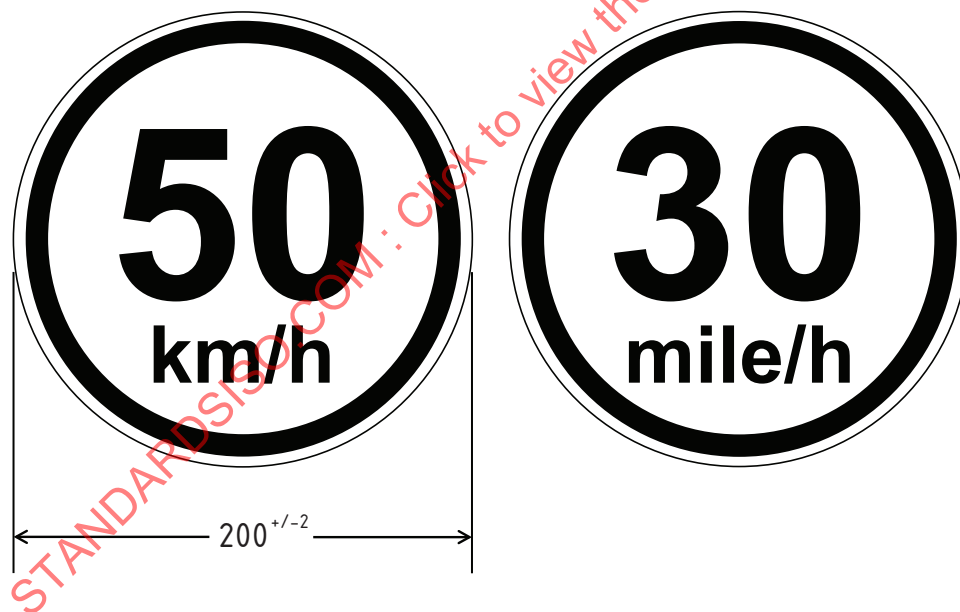


Figure 1 — Examples of Speed Identification Signs (SIS)

4.2 The black border shall be 10 mm wide, inset from the outside diameter by 5 mm (max).

4.3 The field or centre portion and the outside border shall be white.

4.4 The specified ground speed, rounded to the nearest increments of 5 (e.g. 45 to 50), shall be shown in black.

4.5 The text centred below the specified ground speed number shall be the units of measure for the speed. The units shall be either in km/h or mile/h as appropriate for the intended market.

4.6 The grouping of the number specified in 4.4 and the text specified in 4.5 shall be approximately centered with the field.

4.7 Minimum character sizing shall be as specified in Table 1.

Table 1 — SIS character sizing with units text

	Character height	Line thickness
Numbers	75 mm	12 mm
"k", "l", "/" and "h"	25 mm	5 mm
"m", "i" and "e"	18 mm	5 mm

NOTE The text font shown in Figure 1 is Arial Bold.

5 Materials, performance and test requirements

5.1 Performance requirements

Material of equal specifications shall be exposed to the sun for a minimum test period of 24 months outside in humid sub-tropical (Ca) natural climatic conditions, at an angle of 45° to horizontal facing upward and towards the equator, as per ISO 2810. After exterior durability testing, the material shall show no cracking, crazing, blistering, loss of adhesion, or dimensional change.

5.2 Adhesion

Material shall be applied with a pressure sensitive adhesive having a minimum adhesive value of 5,5 N/cm width, when pulled at the rate of 30,5 cm/min at 180 ° angle. The adhesion test shall be performed as specified in ISO 29862:2007, Test Method 1.

NOTE For the adhesion test, ASTM D3330/D3330M and PSTC 101 can be considered equivalent to ISO 29862:2007.

5.3 Colour measurement

Colour measurement shall be as per Table 2.

Table 2 — Chromaticity coordinates for transilluminated signs

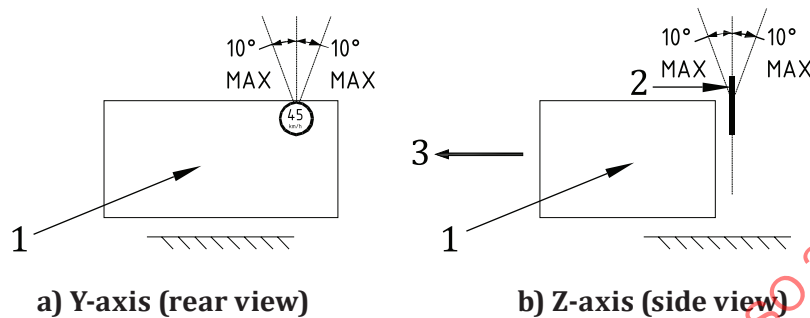
Colour		1	2	3	4
White	x	0,350	0,305	0,295	0,340
	y	0,360	0,315	0,325	0,370
Black	x	0,385	0,300	0,260	0,345
	y	0,355	0,270	0,310	0,395

NOTE Chromaticity coordinates of corner points that determine the permitted colour area for the standard illuminated D65 and CE 2° standard observer.

6 Positioning

6.1 Rear facing SIS

6.1.1 The sign shall be mounted with the numbers upright in a plane perpendicular to the direction of travel and $\pm 10^\circ$ on the y- and z-axis as shown in [Figure 2](#) when the agricultural vehicle is in transport position.



Key

- 1 machine/vehicle
- 2 SIS
- 3 direction of travel

Figure 2 — SIS positioning

6.1.2 The sign shall be located 0,6 m to 3 m above the ground, measured from the bottom edge of the sign.

6.1.3 The sign shall be unobscured to the extent that the circular shape is readily identifiable both day and night. The preferred mounting is to the right of the centreline of the agricultural vehicle.

6.1.4 Only the SIS on the rearmost machine of combinations of the towed equipment need be visible from behind.

6.2 Forward facing SIS

6.2.1 A forward facing SIS may be used as a means of informing the operator of the towing machine of the specified ground speed of the towed machine. If used, it shall be mounted on the towed machine in a position that is readable from the operator's platform of the towing machine.

6.2.2 The dimensions of the forward facing SIS shall be 25 % to 100 % of the dimensions of the rear facing SIS, i.e. 50 mm to 200 mm overall diameter, with the size of the numbers and letters adjusted proportionally.

6.3 Towed equipment combinations

If used, only the forward facing SIS on the lead towed machine need to be visible from the operator's platform. The requirements of [Clause 7](#) shall apply.

7 Operating instructions for towing vehicles

The operator's manual shall state that

- the maximum travel speed is the lesser of
 - the limit of the road conditions;
 - the maximum specified ground speed;
 - for towing operations as indicated in the operator's manual or SIS;
 - of the towed vehicle as indicated in its operator's manual, SIS, or information sign;
- the maximum ground speed of the towed equipment combination shall be limited to the lowest specified ground speed of any of the towed machines. This speed is the ground speed limitation.

EXAMPLE If the tractor is capable of 40 km/h, the first implement has a SIS for 30 km/h, and the last implement's operator's manual states its specified ground speed is 25 km/h, the towed equipment combination ground speed limitation is 25 km/h.