



# **SLOVENSKI STANDARD**

## **oSIST prEN 15432-2:2012**

**01-januar-2012**

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**Oprema za vzdrževalna dela zimske službe in službe za vzdrževanje cest - Oprema za namestitev na sprednji del vozila - 2. del: Zamenljivost dvizhnih sistemov**

Winter and road service area maintenance equipment - Mechanical interface on vehicles for front-mounted equipment - Part 2: Interchangeability on lifting systems

Winterdienst- und Straßenbetriebsdienstausstattung - Mechanische Schnittstelle an Fahrzeugen für frontangebaute Maschinen - Teil 2: Austauschbarkeit an Hubsystemen

Matériels de viabilité hivernale et d'entretien des dépendances routières - Interface sur les véhicules pour matériels montés à l'avant - Partie 2: Interchangeabilité des systèmes de levage

**Ta slovenski standard je istoveten z: prEN 15432-2**

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**ICS:**

43.160      Vozila za posebne namene      Special purpose vehicles

**oSIST prEN 15432-2:2012**

**en,fr,de**



EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**DRAFT**  
**prEN 15432-2**

October 2011

ICS 43.160

Will supersede EN 15432:2008

English Version

## Winter and road service area maintenance equipment - Mechanical interface on vehicles for front-mounted equipment - Part 2: Interchangeability on lifting systems

Matériels de viabilité hivernale et d'entretien des  
dépendances routières - Matériels montés à l'avant - Partie  
2 : Interchangeabilité sur les systèmes de levage

Winterdienst- und Straßenbetriebsdienstausstattung -  
Mechanische Schnittstelle an Fahrzeugen für  
frontangebaute Maschinen - Teil 2: Austauschbarkeit an  
Hubsystemen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 337.

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.

This draft European Standard was established by CEN in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
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EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Foreword

This document (prEN 15432-2:2011) has been prepared by Technical Committee CEN/TC 337 “Winter maintenance and road service area maintenance equipment”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 15432:2008.

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## 1 Scope

This European Standard specifies the requirements for elements mounted to carrying vehicles to ensure interchangeability between a vehicle and different equipments that are to be mounted frontally. It specifies certain interchangeability dimensions of the front mounting plate as well as the locations of coupling devices for electrical and hydraulic connections.

This European Standard specifies a mounting plate in order to cover road vehicles having a maximum total mass of up to 6.0 tons (commercial vehicles, multi-purpose vehicles, communal vehicles, ...) which are capable of carrying front-mounted equipments for winter maintenance and for road service area maintenance. The mounting plate is designed to allow quick and easy changing of carrying vehicle equipments. Mounting or demounting of front-mounted equipments is generally effectuated by one person using conventional tools (mobile or fixed) prior to securing of the front-mounted equipment (by e.g. bolts or hydraulic element).

This Standard does not specify vehicle-side lifting systems or receiving devices for mounting plate (device side).

The vehicle body guidelines from the vehicle manufacturer must be adhered to when performing any modifications to the vehicle.

This European Standard specifies, with regard to electrical and hydraulic connections, only location areas and clearance spaces in order to ensure interchangeability.

## 2 Normative references

The following referenced documents are indispensable for the application 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 1176:1990, *Road vehicles — Masses — Vocabulary and codes*

EN 15431:2008, *Winter and road service area maintenance equipments — Power system and related controls — Interchangeability and performance requirements*

## 3 Interchangeability requirements

### 3.1 F 4 front mounting plate

#### 3.1.1 General provisions

Mounting plates as defined in 3.1.2 shall be designed and installed to the carrying vehicle so as to allow for the easy and safe tilting of the cabin (if the vehicle has been designed to provide for this facility).

Mounting plates as defined in 3.1.2 shall be designed and installed to the carrying vehicle so as to allow for the mounting of a front towing hitch (if the vehicle has been designed to provide for a towing facility). Compliance to this requirement may be achieved in different ways, e.g. by a pivoting or folding mounting plate or by a hitch integrated in the mounting plate itself.

### 3.1.2 F 4 mounting plate class

Table 1 gives indication on installation heights and on recommended range of the maximum design total mass (ISO-M07, item 4.7 of ISO 1176:1990).

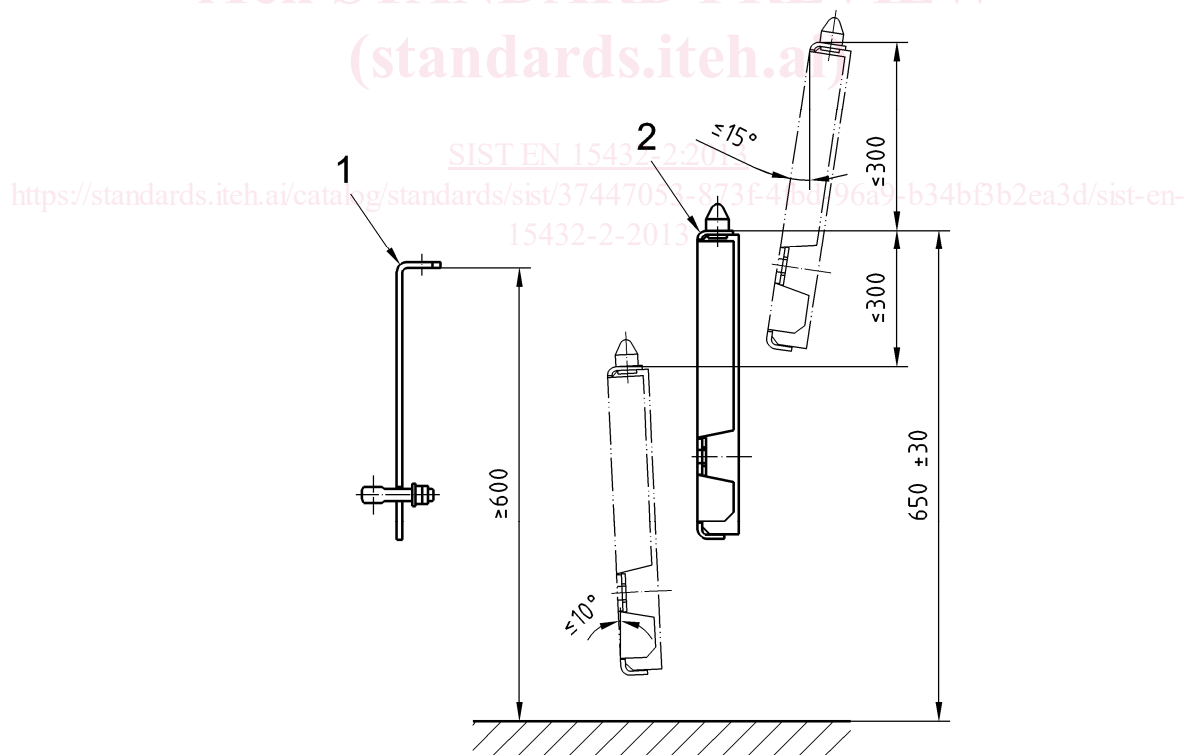
Installation height is measured with the carrying vehicle being at kerb mass (ISO-M06, item 4.6 of ISO 1176:1990) from the ground to the upper edge of the mounting plate (without pin), as shown in Figure 1.

**Table 1 — Installation heights of F 4 mounting plate class**

Mounting plate class	Height upper edge		Recommended range of carrying vehicle maximum total mass
	mm		t
F 4	Lifted	650 (± 30) + 250 (± 50)	0 up to 6,0 t
	Work position <sup>a</sup>	650 (± 30)	
	Lowered	650 (± 30) – 250 (± 50)	

<sup>a</sup> Work position means the position of the equipment in which the front mounting plate is located in vertical position to ground.

To mount the implement to the vehicle the inclination angles of the plate shall adhere, as shown in Figure 1.



#### Key

- 1 implement plate
- 2 vehicle plate

**Figure 1 — Vehicle and implement plate**

### 3.1.3 Strength requirements for the front mounting plate Class F 4

Mounting plates of the F 4 class shall be designed so as to withstand to the maximum loads and moments that are given in Table 2. The values given in Table 2 refer to the maximum static loads and moments applied by the greatest variety of equipments (e.g. snow plough, grass cutting machine) that may be fixed on the mounting plate. Static loads and moments refer to load applying when equipments are being held in a raised position, transport and work position.

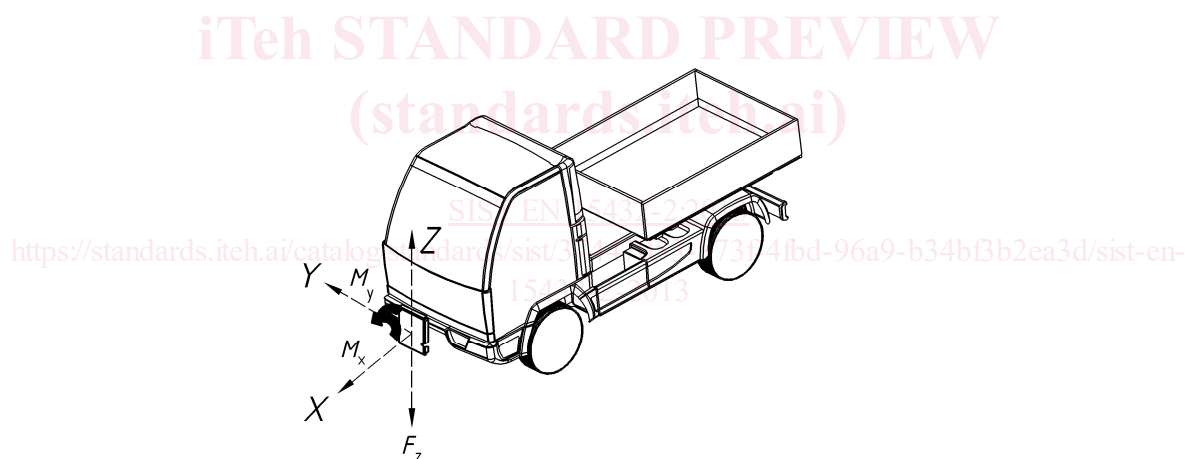
**Table 2 — Maximum static loads of the front mounting plate class F 4**

Mounting plate class	Vertical load, $F_z$ kN	Bending moment, $M_y$ kNm	Torsion moment, $M_x$ kNm
F 4	7,5	3,0	1,0

Loads and moments given in Table 2 refer to the vehicle coordinate system as shown in Figure 2. Vertical load,  $F_z$ , is considered as load directly applying to the mounting plate. As load centre distance of the equipment and the mounting plate grows, the admissible total mass of the equipment reduces.

If the torsion moment  $M_x$  exceeds 1,0 kNm additional supporting measures (e.g. support wheel) on vehicle or implement side shall ensure the maximum moment.

NOTE In compliance with the road traffic regulations, the admissible vehicle axle loads must not be exceeded.



**Figure 2 — Vehicle coordinate system**

### 3.1.4 Designation

Mounting plates meeting the requirements of this European Standard shall be identified by the following information:

- reference to this European Standard (EN 15432-2);
- reference to the mounting plate class.

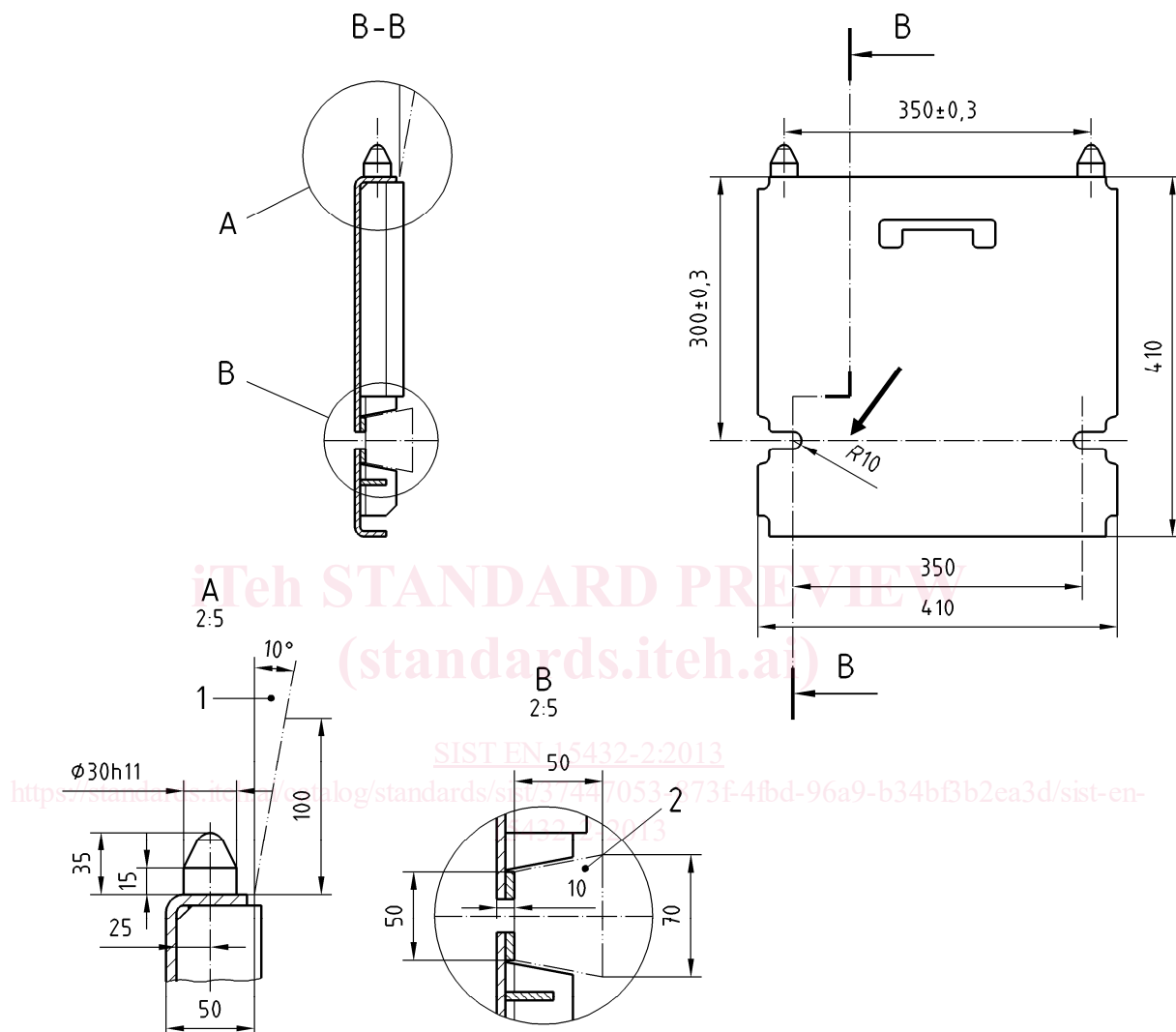
EXAMPLE Front mounting plate of Class F 4:

**Front mounting plate EN 15432-2 F 4**



### 3.1.5 Dimensions

In order to ensure interchangeability, mounting plates of the F 4 class shall be dimensioned according to Figure 3:



#### Key

- 1 clearance for locating holes
- 2 clearance for swivel bolt
- 3 road, maximum height dimension to road level with lifted mounting plate

NOTE 1 For improved coupling, inclination of mounting plate to front is admitted and for increasing of ground clearance (e.g. greater ramp angle), inclination of mounting plate to the rear is admitted.

NOTE 2 Mounting plate may include several parts.

NOTE 3 Additional cut-outs are admitted if they do not reduce strength of the mounting plate.

NOTE 4 Additional fixing elements which do not alter the characteristic dimensions of the mounting plate may also be added for attachment of conventional equipment.

**Figure 3 — Dimensions for front mounting plates of the F 4 class**

## prEN 15432-2:2011 (E)

## 3.1.6 Tool fixing systems

## 3.1.6.1 General

The following sub-clause gives a description of all the fixing elements provided for mounting plate class F 4.

## 3.1.6.2 Front mounting plate of the F 4 class

Front mounting plates of the F 4 class provide for the following fixing elements:

- two safety bolts Ø30h11 (centre to centre 350 mm  $\pm$  0,3 mm, detail A in Figure 3) as location for the relevant mounting boreholes;
- a pair of slots (R 10 mm, centre to centre 350 mm, detail B in Figure 3) for the relevant M16 swivelling bolts.

## 4 Electrical and hydraulic connections

## 4.1 General

Electrical connectors and hydraulic couplings for connecting the equipment to the vehicle shall be provided in the front of the vehicle as close as possible to the lifting system (to the middle of vehicle)

Electrical and hydraulic connections on the vehicle must be oriented only forward.

## 4.1.1 Location on the vehicle

The location for electrical and hydraulic connections, with respect to the front mounting plate, shall be as specified in Figure 4 and Table 3.

Mounting position of the electrical and hydraulic connections shall be completely within the specified areas.

Electrical and hydraulic connections shall be located within shaded areas.

**Table 3 — Dimensions of locating volumes**

Mounting plate class	$h_f$ mm	$b$ mm	$h_b$ mm	$l$ mm
F 4	900 $\pm$ 30	200	600	600