



SLOVENSKI STANDARD
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Vozila za talni transport - Gnana vozila za talni transport - Vidno polje voznika - Preskusna metoda za preverjanje - 6. del: Sedeči uravnoveženi tovornjaki in težki terenski tovornjaki z zmogljivostjo več kot 10 000 kg

Powered industrial trucks - Visibility - Test methods and verification - Part 6: Sit-on counterbalance trucks and rough terrain masted trucks greater than 10 000 kg capacity

Kraftbetriebene Flurförderzeuge - Sichtverhältnisse – Testmethoden zur Verifikation - Teil 6: Gegengewichtstapler mit Fahrersitz und geländegängige Stapler mit Mast mit einer Nenntagfähigkeit von über 10 000 kg

Chariots de manutention automoteurs - Visibilité - Méthodes d'essai et vérification - Partie 6 : Chariots en porte à faux à conducteur assis et chariots tout-terrain à mât ayant une capacité supérieure à 10 000 kg inclus

Ta slovenski standard je istoveten z: prEN 16842-6

ICS:

53.060 Industrijski tovornjaki Industrial trucks

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EUROPEAN STANDARD
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English Version

**Powered industrial trucks - Visibility - Test methods and
verification - Part 6: Sit-on counterbalance trucks and
rough terrain masted trucks greater than 10 000 kg
capacity**

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 150.

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.

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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
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (prEN 16842-6:2017) has been prepared by Technical Committee CEN/TC 150 "Safety of industrial trucks", the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

This European Standard is intended to be used in combination with the requirements in prEN 16842-1.

The EN 16842 series, consists of the following parts under the general title *Powered industrial trucks – Visibility – Test methods and verification*:

- *Part 1: General requirements;*
- *Part 2: Sit-on counterbalance trucks and rough terrain masted trucks up to and including 10 000 kg capacity;*
- *Part 3: Reach trucks up to and including 10 000 kg capacity (in preparation);*
- *Part 4: Variable reach industrial trucks up to and including 10 000 kg capacity (in preparation);*
- *Part 5: Variable reach industrial trucks greater than 10 000 kg capacity (in preparation);*
- *Part 6: Sit-on counterbalance trucks and rough terrain masted trucks greater than 10 000 kg capacity (in preparation);*
- *Part 7: Variable reach and masted container handler (in preparation);*
- *Part 8: Stand on counterbalance trucks up to and including 10 000 kg capacity (in preparation).*
- *Part 9: VNA trucks;*

It is intended to develop additional parts related to the following machinery:

- Pallet stacking trucks (rider controlled);
- Burden and personnel carrier;
- Tractor (IND Truck);
- Single side loader;
- Multi-directional forklift truck;
- Articulated counterbalance lift truck;
- Low lift straddle carriers (as defined in ISO 5053-1:2015, 3.18);
- High lift straddle carriers (as defined in ISO 5053-1:2015, 3.19).

Introduction

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

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 organizations, 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.”

1 Scope

This European Standard specifies the requirements and test procedures for 360° visibility of sit-on self-propelled industrial counterbalance trucks and rough terrain masted trucks (herein referred to as truck) with a capacity greater than 10 000 kg in accordance with ISO 5053-1 and is intended to be used in conjunction with FprEN 16842-1.

Where specific requirements in this part are modified from the general requirements in FprEN 16842-1, the requirements of this part are truck specific and to be used for sit-on self-propelled industrial counterbalance trucks and rough terrain masted trucks with a capacity greater than 10 000 kg.

This part of EN 16842 deals with all significant hazards, hazardous situations or hazardous events as listed in Annex ZA, Table ZA.1, relevant to the visibility of the operator for applicable machines when used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer.

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.

FprEN 16842-1:2017, *Powered industrial trucks — Visibility — Test methods for verification — Part 1: General requirements*

EN ISO 3691-1:2015, *Industrial trucks — Safety requirements and verification — Part 1: Self-propelled industrial trucks, other than driverless trucks, variable-reach trucks and burden-carrier trucks (ISO 3691-1:2011, including Cor 1:2013)*

ISO 5053-1, *Industrial trucks — Terminology and classification — Part 1: Types of industrial trucks*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in FprEN 16842-1 and ISO 5053-1 apply.

4 Truck configuration

4.1 General

For truck test configuration, FprEN 16842-1:2017, Clause 4 shall apply.

4.2 Height of load carrying surface

If applicable, the load carrying surface of the fork arms, measured at the heel and, up to 500 mm above the floor.

4.3 Fork arm dimensions

The test truck shall be equipped with fork arms of the following nominal lengths:

- Trucks with load centre 600 mm, fork arm length 1 200 mm;
- Trucks with load centre 900 mm, fork arm length 1 800 mm;
- Trucks with load centre 1 200 mm, fork arm length 2 400 mm.

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Other fork arm lengths may be tested if these adversely affect visibility.

Lengths of forks arms shall be noted in the test report as per FprEN 16842-1:2017, 8.2 i).

NOTE Fork arm lengths in millimetres are given as two times the length of the standard load centre distance as defined in EN ISO 3691-1:2015, A.2.3.

5 Test equipment

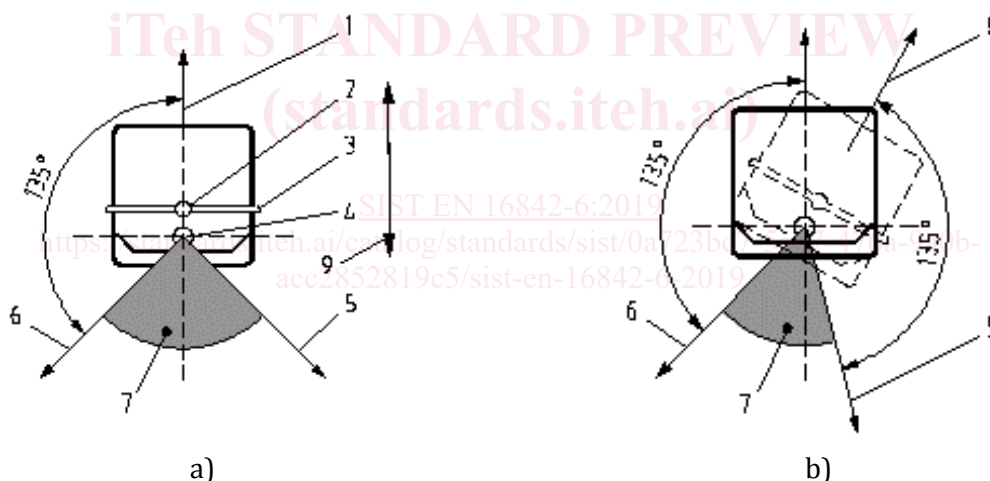
Requirements for test equipment are specified in FprEN 16842-1:2017, Clause 5.

6 Test procedures for direct visibility

6.1 Light source position

The light source fixture shall be positioned relative to the seat index point (SIP). The seat shall be placed at the closest adjustment position to the mid-point of horizontal and vertical adjustment and the mid-point of the suspension height, if so equipped. For trucks with rotatable seats, the seat may be turned toward the direction of the test being conducted. See Figure 1.

- a) Sit-on truck where the operator is facing the line of travel.
- b) Sit-on truck where the operator is facing the line of travel equipped with rotatable seat.



Key

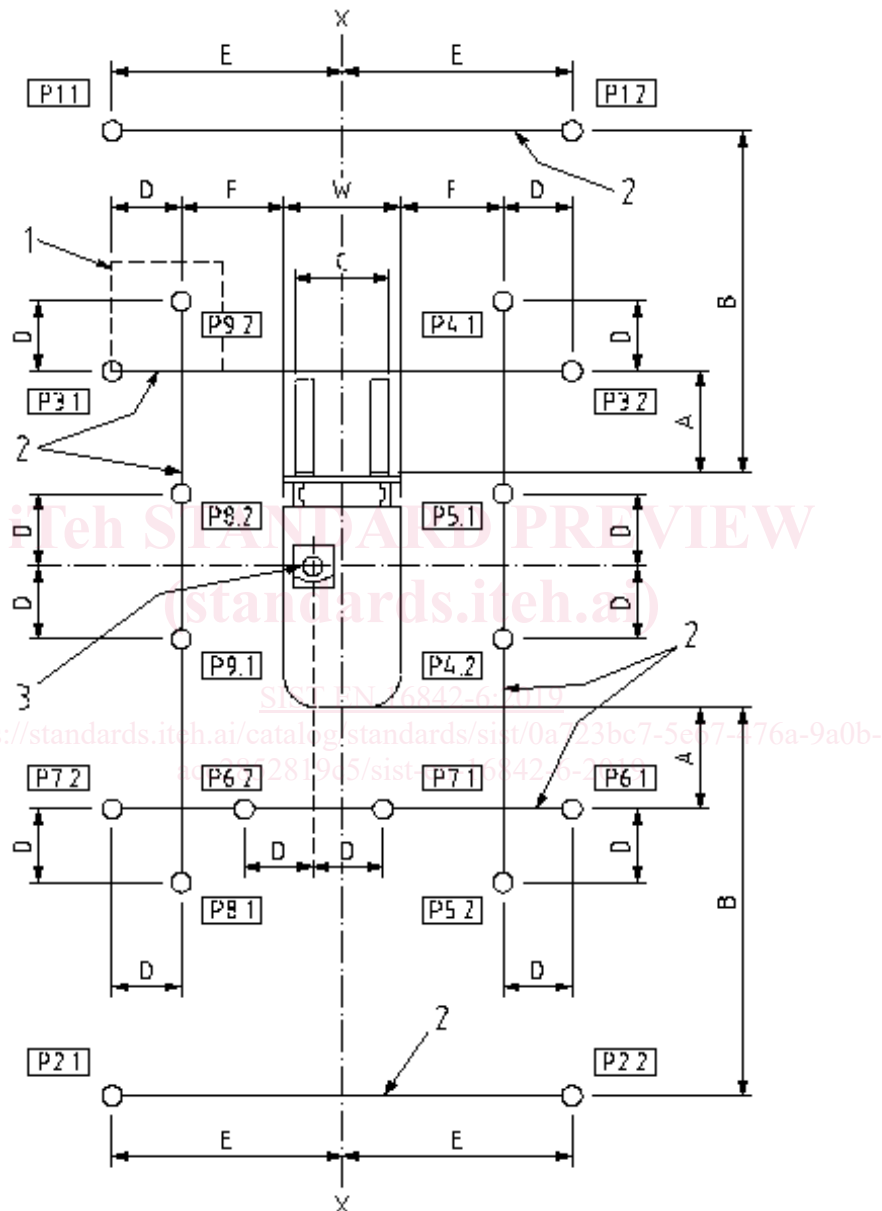
- 1 0° seat direction
- 2 SIP
- 3 row of lights
- 4 row of lights axis of rotation
- 5 +135° test direction
- 6 -135° test direction
- 7 the row of lights cannot be turned to this area for tests
- 8 seat direction rotatable
- 9 forward and rearward truck direction for all seat positions shown

Figure 1 — Seat position and test direction

6.2 Test paths for trucks > 10 000 kg

Test paths P1 to P9 shall consist of lines laid out on the floor around the test truck, parallel or perpendicular to the truck longitudinal axis. The test paths as shown in Figure 2 and 3, shall be located from the truck profile, as defined in FprEN 16842-1:2017, 3.1 which includes the front vertical surface of the fork arms.

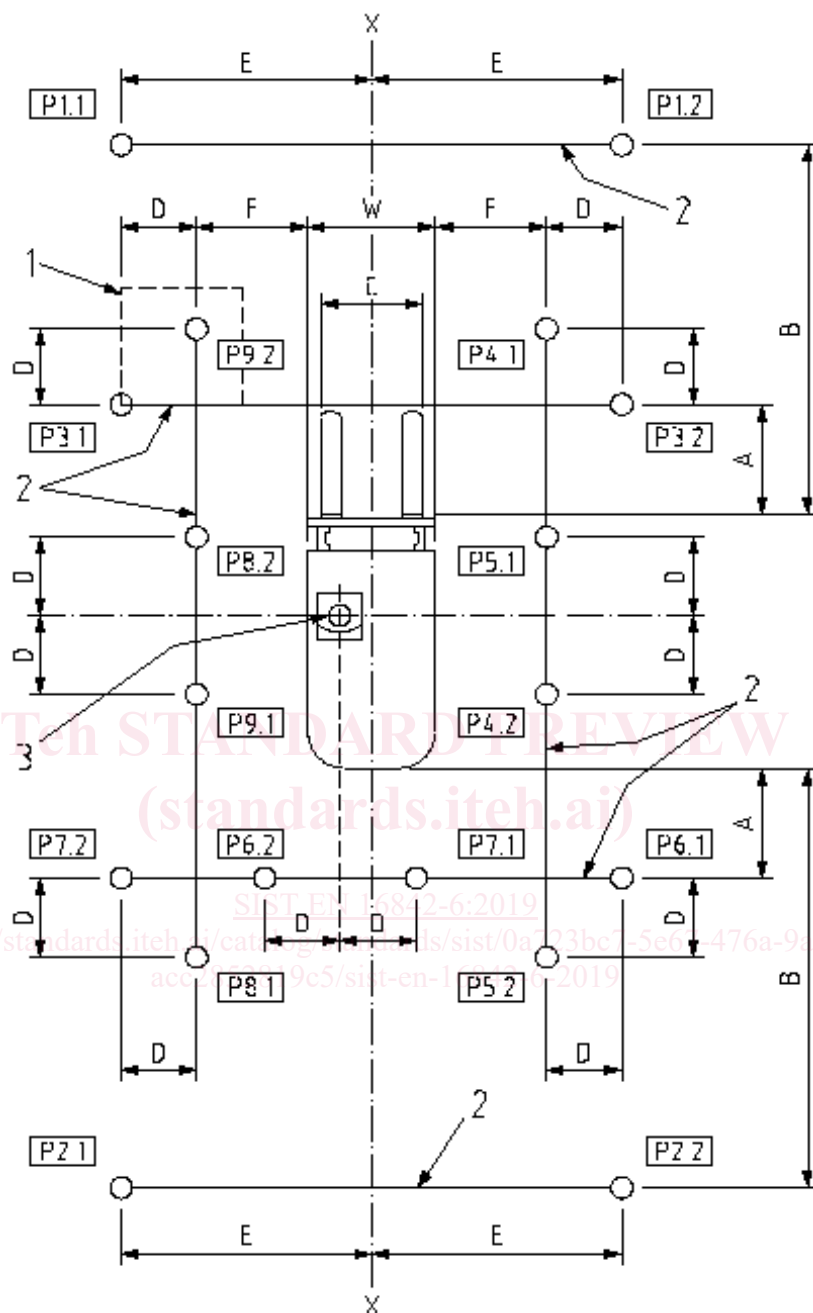
Dimensions in millimetres



Key

A = 2 400	XX longitudinal axis
B = 8 000	W maximum truck width
C = 1 250 to 2 500	1 test body
D = 250	2 test paths
E = $W/2 + 500$	3 axis of rotation
F = 500	

Figure 2 — Test paths, sit-on counterbalance trucks > 10 000 kg ≤ 18 000 kg

**Key**

A = 2 400	W maximum truck width
B = 8 000	XX longitudinal axis
C = 1 250 to 2 500	1 test body
D = 250	2 test paths
E = $W/2 + 500$	3 axis of rotation
F = 1 200	

Figure 3 — Test paths, sit-on counterbalance trucks > 18 000 kg