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**Vozila za talni transport - Gnana vozila za talni transport - Vidno polje voznika - Preskusna metoda za preverjanje - 9. del: Tovorni in tristrani viličarji z dvižnim položajem upravljavca**

Powered industrial trucks - Visibility - Test method for verification - Part 9: Order-picking, lateral- and front-stacking trucks with elevating operator position

Kraftbetriebene Flurförderzeuge - Sichtverhältnisse - Testmethoden zur Verifikation - Teil 9: Kommissionier-Flurförderzeug und Dreiseitenstapler mit anhebbarer Bedienerposition

Chariots de manutention automoteurs - Visibilité - Méthode d'essai et vérification - Partie 9 : Chariots préparateurs de commande, à prise latérale et frontale avec poste de conduite élevable

**Ta slovenski standard je istoveten z: EN 16842-9:2019**

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**ICS:**

53.060            Industrijski tovornjaki            Industrial trucks

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EUROPEAN STANDARD

EN 16842-9

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2019

ICS 53.060

English Version

## Powered industrial trucks - Visibility - Test methods and verification - Part 9: Order-picking, lateral- and front-stacking trucks with elevating operator position

Chariots de manutention automoteurs - Visibilité -  
Méthode d'essai et vérification - Partie 9 : Chariots  
préparateurs de commande, à prise latérale et frontale  
avec poste de conduite élevable

Kraftbetriebene Flurförderzeuge - Sichtverhältnisse -  
Prüfverfahren und Verifikation - Teil 9:  
Kommissionier-Flurförderzeuge und Dreiseitenstapler  
mit anhebbarer Bedienerposition

This European Standard was approved by CEN on 26 November 2018.

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This European Standard exists 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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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<b>Contents</b>	<b>Page</b>
European foreword.....	3
Introduction .....	5
1 Scope.....	6
2 Normative references.....	6
3 Terms and definitions .....	6
4 Truck configuration .....	7
4.1 General.....	7
4.2 Height of load carrying surface.....	7
4.3 Fork arm dimensions.....	7
4.4 Additional turret head .....	7
5 Test equipment.....	7
6 Test procedures for direct visibility.....	7
6.1 Lighting equipment position.....	7
6.1.1 General.....	7
6.1.2 Stand-on operated trucks.....	7
6.1.3 Sit-on operated trucks.....	9
6.2 Test paths.....	10
6.3 Measurement procedure.....	13
6.4 Test procedure for indirect visibility.....	13
7 Acceptance criteria.....	13
7.1 General.....	13
7.2 Direct visibility.....	13
7.2.1 General.....	13
7.2.2 Travelling visibility .....	13
7.2.3 Manoeuvring visibility .....	13
7.2.4 Fork arms.....	13
7.3 Indirect visibility.....	13
7.4 Criteria for order-picking and lateral- and front-stacking trucks with elevating operator position .....	14
8 Test report.....	15
9 Information for use .....	15

## European foreword

This document (EN 16842-9:2019) has been prepared by Technical Committee CEN/TC 150 "Industrial Trucks - Safety", the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2019, and conflicting national standards shall be withdrawn at the latest by August 2019.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This European Standard is intended to be used in combination with the requirements in EN 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;*
- *Part 4: Industrial variable reach trucks up to and including 10 000 kg capacity;*
- *Part 5: Industrial variable reach trucks greater than 10 000 kg capacity (under preparation);*
- *Part 6: Sit-on counterbalance trucks and rough terrain masted trucks greater than 10 000 kg capacity;*
- *Part 7: Variable reach and masted container trucks handling freight containers of 6 m (20 ft) length and longer;*
- *Part 8: Stand on counterbalance trucks up to and including 10 000 kg capacity (under preparation).*
- *Part 9: Order-picking, lateral- and front-stacking trucks with elevating operator position;*
- *Part 10: Towing and pushing tractors and burden carrier.*

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

- Pallet stacking trucks (rider controlled);
- Single side loader;
- Multi-directional forklift truck;
- Articulated counterbalance lift truck;
- Non-stacking low-lift straddle carrier (as defined in ISO 5053-1:2015, 3.18);
- Stacking high-lift straddle carrier (as defined in ISO 5053-1:2015, 3.19).

**EN 16842-9:2019 (E)**

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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## 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.

**EN 16842-9:2019 (E)****1 Scope**

This document specifies the requirements and test procedures for 360° visibility of self-propelled industrial order-picking, lateral- and front-stacking trucks with elevating operator position in accordance with ISO 5053-1 (herein after referred to as trucks), without a load and it is intended to be used in conjunction with EN 16842-1.

The visibility of trucks driving in very narrow aisles and/or driving with elevated operator (above 500 mm) is not within the scope of this standard.

Where specific requirements in this part are modified from the general requirements in EN 16842-1, the requirements of this part are truck specific and to be used for self-propelled industrial order-picking, lateral- and front-stacking trucks with elevating operator position.

This part of EN 16842 deals with all significant hazards, hazardous situations or hazardous events 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 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.

EN 16842-1:2018, *Powered industrial trucks - Visibility - Test methods and 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)*

EN ISO 3691-3:2016, *Industrial trucks - Safety requirements and verification - Part 3: Additional requirements for trucks with elevating operator position and trucks specifically designed to travel with elevated loads (ISO 3691-3:2016)*

ISO 5053-1:2015, *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 EN 16842-1, ISO 5053-1 and ISO 3691-1 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>



## 4 Truck configuration

### 4.1 General

For truck test configuration, EN 16842-1:2018, 4.1, 4.2.2 and 4.3 shall apply.

### 4.2 Height of load carrying surface

The load carrying surface of the fork arms, measured at the heel end, shall be positioned 100 mm to 500 mm above the floor.

This may be achieved either by raising of the forks (additional lifting device) and/or raising of the operator platform.

NOTE 500 mm is the maximum lift height for travelling as defined in EN ISO 3691-1:2015, definition 3.10.

The height of the load carrying surface (lift height of operator platform and additional lifting device) shall be documented in the test report.

### 4.3 Fork arm dimensions

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

- Order-picking trucks and lateral- and front-stacking trucks with elevating operator position: 1 200 mm.
- Other fork arm lengths shall be tested if these adversely affect visibility (e.g. shorter fork arms).

Lengths of forks arms shall be noted in the test report in accordance with EN 16842-1:2018, 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.

### 4.4 Additional turret head

If the truck is equipped with an additional turret head, it shall be rotated to its normal operating position; the position shall be documented in the test report.

## 5 Test equipment

For test equipment, EN 16842-1:2018, Clause 5 shall apply.

## 6 Test procedures for direct visibility

### 6.1 Lighting equipment position

#### 6.1.1 General

The visibility from the industrial truck shall be determined from all normal operating positions with the lighting equipment and a test body or screen. The lighting equipment simulates the range of eye positions of the operator. The test body or test screen simulates an obstacle to be seen.

#### 6.1.2 Stand-on operated trucks

The fixture of the lighting equipment shall be positioned relative to the standing index point (STIP).

The STIP is given for a stand-on operator in the normal operating position, with the operator standing at the platform and controlling all functions.