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**Vozila za talni transport - Gnana vozila za talni transport - Vidno polje voznika - Preskusna metoda in preverjanje - 7. del: Tovorni zabojniki s kontejnerji s spremenljivim dosegom 6 m in več**

Powered industrial trucks - Visibility - Test methods and verification - Part 7: Variable-reach and masted container trucks handling freight containers of 6 m (20 ft) length and longer

Kraftbetriebene Flurförderzeuge - Sichtverhältnisse - Prüfverfahren und Verifikation - Teil 7: Flurförderzeuge mit veränderlicher Reichweite und Mast für Container-Handling für eine Containerlänge von 6 m und länger

Chariots de manutention automoteurs - Visibilité - Méthodes d'essai et vérification - Partie 7: Chariot porte-conteneur à portée variable et à mât manutentionnant des conteneurs de fret de 6 m (20 ft) de long et plus

**Ta slovenski standard je istoveten z: EN 16842-7:2018**

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53.060      Industrijski tovornjaki      Industrial trucks

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EUROPEAN STANDARD

EN 16842-7

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2018

ICS 53.060

English Version

## Powered industrial trucks - Visibility - Test methods and verification - Part 7: Variable-reach and masted container trucks handling freight containers of 6 m (20 ft) length and longer

Chariots de manutention automoteurs - Visibilité -  
Méthodes d'essai et vérification - Partie 7: Chariot  
porte-conteneur à portée variable et à mât  
manutentionnant des conteneurs de fret de 6 m (20 ft)  
de long et plus

Kraftbetriebene Flurförderzeuge - Sichtverhältnisse -  
Prüfverfahren und Verifikation - Teil 7:  
Flurförderzeuge mit veränderlicher Reichweite und  
Flurförderzeuge mit Mast für Container Handling für  
eine Containerlänge von 6 m (20 Fuß) und länger

This European Standard was approved by CEN on 22 May 2018.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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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## European foreword

This document (EN 16842-7:2018) 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 May 2019, and conflicting national standards shall be withdrawn at the latest by May 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.

EN 16842 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 (in 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 (in preparation);*
- *Part 9: Order-picking, lateral- and front-stacking trucks with elevating operator position;*
- *Part 10: Towing and pushing tractors and burden carriers*

It is intended to develop additional 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 carriers (as defined in ISO 5053-1:2015, 3.18);
- Stacking high lift straddle carriers (as defined in ISO 5053-1:2015, 3.19).

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,

**EN 16842-7:2018 (E)**

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 16842-7:2018 (E)****1 Scope**

This document specifies the requirements and test procedures for 360° visibility of sit-on self-propelled variable-reach trucks and masted container trucks (herein after referred to as trucks) without a load, specifically designed for the transport of freight containers of 6 m (20 ft) length and longer, in accordance with ISO 5053-1, equipped with a spreader and it is intended to be used in conjunction with EN 16842-1.

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 sit-on self-propelled variable-reach trucks and masted trucks designed for transport of freight containers of 6 m (20 ft) length and longer.

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.

This standard does not apply to trucks equipped with forks.

**2 Normative references**

The following documents are referred to in 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 3691-2:2016, *Industrial trucks — Safety requirements and verification — Part 2: Self-propelled variable-reach trucks (ISO 3691-2:2016)*

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

**3 Terms and definitions**

For the purpose of this document, the terms and definitions given in EN 16842-1, ISO 5053-1 and the following apply.

NOTE Definition 3.1 of EN 16842-1:2018 is not applicable for trucks.

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>

**3.1 truck profile**

contour which is determined by the largest rectangular width and length parallel to the longitudinal axis of the truck, which includes the front vertical surface of the mast for masted machines or the front of the machine for variable-reach trucks not including the boom or spreader



### 3.2

#### **spreader**

device fitted to the boom or mast, designed to connect the lifting points of freight containers, swap bodies and semi-trailers

Note 1 to entry: It can include powered devices used to connect the lifting points of the load and an articulated mechanism to facilitate engagement.

[SOURCE: EN ISO 3691-2:2016, 3.10, modified]

## **4 Truck configuration**

### **4.1 General**

EN 16842-1:2018, Clause 4 does not apply.

The test shall be conducted with an unladen truck on a level, horizontal floor.

Trucks for container handling shall be equipped with a container spreader.

The test method of this standard applies to all configurations, including additional tests for various types of masts, external fuel tanks, counterweights, cabs, etc. that adversely affect visibility.

Where a configuration has no adverse effect on visibility, the test may not need to be repeated.

The test shall be valid for the determined configurations of the truck and these shall be recorded in the test report according to Clause 8.

### **4.2 Position of container attachment**

The spreader shall be at the travelling position (unladen) with the bottom of the spreader up to 900 mm above the seat index point (SIP).

NOTE The elevated spreader allows an operator in a low position on the truck to see underneath the spreader.

### **4.3 Tilt of mast (only applicable for masted trucks)**

For test configuration, EN 16842-1:2018, 4.2.2 shall apply.

### **4.4 Position of cab**

Where trucks are fitted with a movable cab, the truck shall be tested with the cab in the travel position as specified by the manufacturer.

## **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**

The lighting equipment 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 (see Figure 1).