SLOVENSKI STANDARD
oSIST prEN 16842-1:2015

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Vozila za talni transport - Vidljivost - Preskusna metoda za preverjanje - 1. del: Splošne zahteve

Powered industrial trucks - Visibilty - Test method for verification - Part 1: General requirements

Kraftbetriebene Flurförderzeuge - Sichtverhältnisse - Testmethoden zur Verifikation - Teil 1: Allgemeine Anforderungen

Chariots de manutention automoteurs - Visibilité - Méthode d'essai pour la vérification - Partie 1 : Prescriptions générales

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Powered industrial trucks - Visibilty - Test method for verification - Part 1: General requirements

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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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Foreword

This document (prEN 16842-1:2015) has been prepared by Technical Committee CEN/TC 150 “Industrial trucks - Safety”, 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.

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 counterbalanced 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 than10 000 kg capacity* (in preparation);

— *Part 6: Sit-on counterbalanced 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 counterbalanced trucks up to and including 10 000 kg capacity* (in preparation).

The following parts are intended to be developed:

— *VNA trucks;*

— *Pallet stacking trucks (rider controlled);*

— *Burden and personnel carrier;*

— *Tractor (IND Truck);*

— *Single side loader;*

— *Multi-directional forklift truck;*

— *Articulated counterbalanced lift truck;*

— *Lorry mounted industrial trucks;*

— *Rough terrrain masted lorry mounted truck;*

— *Rough terrain variable reach lorry mounted truck;*

— *Variable container handler;*

— *Low lift straddle carriers* (in accordance with 2.19 of ISO/DIS 5053-1);

— *High lift straddle carriers* (in accordance with 2.20 of ISO/DIS 5053-1).

For specific machines covered by other parts in this standard, this European Standard is intended for use in combination with relevant other parts in the series.

Introduction

This European Standard is used to measure and evaluate the operator's visibility from unladen self-propelled industrial trucks. This European Standard is a "Type C" standard as defined in EN ISO 12100.

This European Standard has been prepared to be a harmonized standard to provide one means for visibility testing for *self-propelled* industrial trucks to conform to the essential health and safety requirements of the Machinery Directive, as amended.

When provisions of this type C standard are different from those which are stated in type A or B standards the provisions of this type C standard take precedence over the provisions of other standards, for equipment that have been designed and built according to the provisions of this type C standard.

1 Scope

The EN 16842 series specify requirements and test procedures of all around visibility of self-propelled industrial trucks in accordance with ISO/DIS 5053-1 with a sit-on or stand-on operator, without load, and equipped with fork arms or load platform.

This part of the EN 16842 series gives the common test requirements for powered industrial truck visibility testing and is intended to be used in conjunction with EN 16842 parts 2 to x.

The truck specific requirements in EN 16842 parts 2 to x take precedence over the respective requirements of EN 16842-1.

The requirements of the applicable part of EN 16842 take precedence over the requirements of 4.12 of EN 16307-1.

The standard does not apply to:

— trucks with elevating operator position, when the operating position is elevated;

— rough terrain variable reach trucks – within the scope of EN 15830;

— centre controlled order picking truck (in accordance with 2.17 of ISO/DIS 5053-1);

— pallet truck end controlled (in accordance with 2.16 of ISO/DIS 5053-1).

In addition, the following trucks in normal operation have excellent all round visibility and therefore will not be part of this series of standards:

— ride on pallet truck;

— pedestrian controlled pallet trucks.

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.

EN ISO 3691-1:2012, *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)*

EN ISO 3691-6, *Industrial trucks - Safety requirements and verification - Part 6: Burden and personnel carriers (ISO 3691-6)*

ISO/DIS 3691-2, *Industrial trucks - Safety requirements and verification - Part 2: Self-propelled variable-reach trucks*

ISO/DIS 3691-3, *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/DIS 5053-1, *Powered Industrial Trucks - Terminology and classification - Part 1: Types of industrial trucks*

ISO 5353, *Earth-moving machinery, and tractors and machinery for agriculture and forestry — Seat index point*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/DIS 5053-1, EN ISO 3691-1, ISO/DIS 3691-2, ISO/DIS 3691-3 and EN ISO 3691-6, together with the following apply.

3.1
truck profile
contour which is determined by the largest rectangular width and length parallel to the longitudinal axis of the truck, including the front vertical surface of the fork arms

Note 1 to entry: The blades of the fork arms are not taken into account.

3.2
seat index point
SIP
as specified in ISO 5353

3.3
standing index point
STIP
perpendicular projection of the mid-axis of the standing operator in the normal operating position in which the operator is able to control all functions for driving and load handling

Note 1 to entry: Applicable to stand on trucks only, determination of STIP is defined in the applicable parts of this series of standards.

3.4
adjusted standing index point
ASTIP
adjusted STIP located relative to the STIP to simulate body movement of the operator during truck operation

Note 1 to entry: Applicable to stand on trucks only, determination of ASTIP is defined in the applicable parts of this series.

3.5
forward direction
as specified in EN ISO 3691-1:2012, Annex A

3.6
manoeuvring of an industrial truck
motion of an industrial truck at slow speed and for short distances.

Note 1 to entry: Manoeuvring may include movements such as operation in narrow aisles, when turning, passing objects close by, load pick-up and put down, approaching and retreating from loads, and other operations not included when travelling.

3.7
travelling of an industrial truck
movement of the truck over relatively long distance and open areas at faster speeds than manoeuvring up to maximum speed

3.8
lighting equipment
system of lights that represent the range of vision including head and body movement

Note 1 to entry: See Figure 3 or Figure 4.

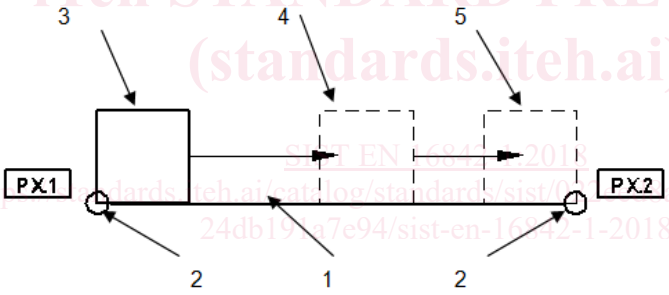
3.9
test body
body that simulates an obstacle, e.g. a person in a stooped position, and with which the visibility conditions are evaluated

Note 1 to entry: See Figure 2.

3.10
test screen
surface with which the visibility conditions while travelling forward are evaluated

3.11
normal operating position
as specified in EN ISO 3691-1:2012, 3.8

3.12
test path
path marked on the floor around the industrial truck to be tested and on which the test body is moved for the visibility measurement tests



Key
1 test path
2 test path end point
3 test body at end point PX.1
4 test body is moved along entire length of test path, not extending past end points
5 test body at end point PX.2

Figure 1 — Top view of test path

3.13
illuminated area
surface on the test body or test screen that is illuminated by at least one switched-on light of the lighting equipment

3.14
dark shadow
surface on the test body or test screen that is not illuminated by any switched-on light of the lighting equipment.

Note 1 to entry: When checking for dark shadows on the test body or test screen the shadow cast by an object, e.g. clipboard, hand, may help to identify dark shadow areas.

3.15
direct visibility
illumination of the test body and test screen without the use of auxiliary equipment

3.16
indirect visibility
illumination of the test body and test screen with the use of auxiliary equipment

3.17
auxiliary equipment
equipment used to compensate for the limitation of direct visibility by, e.g., mirrors or camera/monitor systems

4 Truck configuration

4.1 General

The test shall be conducted with an unladen truck on a level, horizontal floor. The truck shall be equipped with a load platform or two fork arms of a length up to dimension “A” as indicated in the appropriate part of the EN 16842 series, centrally spaced at an outside distance within the normal fork adjustment range of the specific configuration tested.

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.

The test shall be valid for the specific configuration tested.

4.2 Height of load carrying surface

If applicable, the load carrying surface of the fork arms, measured at the heel end, shall be positioned 100 mm to 300 mm above the floor.

NOTE The dimensions above are to enable the operator to adjust height of the forks for maximum visibility of fork tips.

Information about mast tilt and/or retractable mast position can be found in the applicable truck specific document in this series.

4.3 Tilt of the mast or load carrying surface

a) Travelling tests

The mast or load carrying surface shall be tilted rearward to the maximum, but not more than 10°, for all travelling tests. If the means of tilting the mast or load carrying surface is accomplished by tilting the truck chassis, these tests shall be performed with the chassis horizontal.

b) Manoeuvring tests

The mast shall be vertical or the load carrying surface horizontal for all manoeuvring tests.