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**Vozila za talni transport – Varnostne zahteve in pregledi – 4. del: Vozila brez  
voznika in njihovi sistemi (ISO/DIS 3691-4:2006)**

Industrial trucks - Safety requirements and verification - Part 4: Driverless industrial  
trucks and their systems (ISO/DIS 3691-4:2006)

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March 2006

ICS

Will supersede EN 1459:1998, EN 1726-1:1998

English Version

**Industrial trucks - Safety requirements and verification - Part 4:  
Driverless industrial trucks and their systems (ISO/DIS 3691-  
4:2006)**

Chariots de manutention - Exigences de sécurité et  
vérification - Partie 4: Chariots sans conducteur et leurs  
systèmes (ISO/DIS 3691-4:2006)

Flurförderzeuge - Sicherheitsanforderungen und  
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Systeme (ISO/DIS 3691-4:2006)

This draft European Standard is submitted to CEN members for second parallel 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.

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 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  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**Management Centre: rue de Stassart, 36 B-1050 Brussels**

## **Foreword**

This document (prEN ISO 3691-4:2006) has been prepared by Technical Committee ISO/TC 110 "Industrial trucks" in collaboration with Technical Committee CEN/TC 150 "Industrial Trucks - Safety", the secretariat of which is held by BSI.

This document is currently submitted to the second parallel Enquiry.

This document will supersede EN 1459:1998 and EN 1726-1:1998.

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).

### **Endorsement notice**

The text of ISO 3691-4:2006 has been approved by CEN as prEN ISO 3691-4:2006 without any modifications.

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## DRAFT INTERNATIONAL STANDARD ISO/DIS 3691-4.2

ISO/TC 110/SC 2

Secretariat: BSI

Voting begins on:  
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Voting terminates on:  
2006-08-16

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## Industrial trucks — Safety requirements and verification —

Part 4:

## Driverless industrial trucks and their systems

*Chariots de manutention — Exigences de sécurité et vérification —*

*Partie 4: Chariots sans conducteur et leurs systèmes*

(Revision of ISO 3691:1980)

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The CEN Secretary-General has advised the ISO Secretary-General that this ISO/DIS covers a subject of interest to European standardization. **In accordance with the ISO-lead mode of collaboration as defined in the Vienna Agreement, consultation on this ISO/DIS has the same effect for CEN members as would a CEN enquiry on a draft European Standard.** Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month FDIS vote in ISO and formal vote in CEN.

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 3691-4 was prepared by Technical Committee ISO/TC 110, *Industrial trucks*, Subcommittee SC 2, .

This edition cancels and replaces the second edition (ISO 3691:1980), which has been technically revised.

ISO 3691 consists of the following parts, under the general title *Industrial trucks — Safety requirements and verification*:

*Part 1: Self propelled industrial trucks, other than driverless and variable reach trucks, and burden carriers*

*Part 2: Self propelled variable reach trucks*

*Part 3: Additional requirements for trucks with elevating operator position and trucks specifically designed to travel with elevated loads*

*Part 4: Driverless industrial trucks and their systems*

*Part 5: Pedestrian propelled trucks*

*Part 6: Burden and personnel carriers*

## Introduction

### 0.1 General

This International Standard covers safety requirements and verification of industrial trucks as defined in Standard ISO 5053 - Terminology.

For the purpose of this Standard, industrial trucks are wheeled self propelled or manually driven vehicles, except those running on rails. They are either operator controlled or driverless and are designed to carry, tow, push, lift, stack or tier in racks.

### 0.2 Structure

An important step forward within the work for this standard was the agreement to issue a new structure of International Standards for industrial trucks having on one side basic standards for all kinds of trucks (see Foreword) and on the other side independent standards to cover the respective specific functions of industrial trucks e.g. visibility, noise, vibration, electrical requirements etc

### 0.3 Assessment of hazards

The product should be designed in such a way that it is fit for its purpose or function and can be adjusted and maintained without putting persons at risk when it is used under conditions foreseen by the manufacturer.

In order to properly design a product and to cover all specific safety requirements, the manufacturer shall identify the hazards that apply to his product and shall carry out a risk assessment. The manufacturer then should design and construct it taking account of this assessment.

The aim of this procedure is to eliminate the risk of accidents throughout the foreseeable lifetime of the machinery including the phases of assembling and dismantling where risks of accidents could also arise from foreseeable abnormal situations.

In selecting the most appropriate methods the manufacturer should apply the following principles in the order given:

- a) Eliminate or reduce risks as far as possible by design (inherently safe machinery design and construction);
- b) take the necessary protection measures in relation to risks that can not be eliminated by design;
- c) inform users of any shortcoming of the protection measures adopted;
- d) indicate whether any particular training is required and;
- e) specify any need to provide personal protection equipment;
- f) Refer to the appropriate user's document for proper operating instructions

The machinery shall be designed to prevent abnormal use, wherever possible, if such would engender risk. In other cases the instructions shall draw the user's attention to ways – which experience has shown might occur – in which the machinery should not be used.

A list of significant hazards is given in clause 4 of each part of the standard. The list provides guidance on appropriate measures to protect against the risks involved.

This International Standard does not repeat all the technical rules which are state of the art and which are applicable to the material used to construct the industrial truck. Reference should be made to ISO/CD 12100-2.

#### 0.4 Legislative situation/Vienna Agreement

From the very beginning, the task of the working group was to revise the standard and to establish world wide basic standards to comply with the major legislative regulations in the world, e.g. EU, USA, Japan and Australia.

For several potential problem areas compromises were needed and will be needed in the future.

In order to ensure that the revised ISO Standard shall be actively used in the ISO countries world wide, procedures are necessary to replace the existing national standards and technical regulations by the revised ISO Standard. In the European Community ISO and the European Committee for Standardization (CEN) agreed on technical co-operation between ISO and CEN (Vienna Agreement) with the aim to replace the European Standards (EN) by the later worldwide ISO standards by using the parallel voting procedure automatically. Other countries are asked to issue similar agreements to ensure that their national standards and technical regulations are replaced by this ISO Standard.

Only by these actions will there be the guarantee that products in accordance with the ISO standards could be shipped world wide freely without any technical barriers.

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