



**NSAI**  
Standards

Irish Standard  
I.S. EN ISO 3691-5:2014&AC:2014

# Industrial trucks - Safety requirements and verification - Part 5: Pedestrian-propelled trucks (ISO 3691-5:2014)

## I.S. EN ISO 3691-5:2014&AC:2014

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

EN ISO 3691-5:2014/AC:2014

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

*This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):*

*NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.*

*This document is based on:*

EN ISO 3691-5:2014

*Published:*

2014-02-26

*This document was published under the authority of the NSAI and comes into effect on:*

2014-09-13

ICS number:

53.060

NOTE: If blank see CEN/CENELEC cover page

NSAI  
1 Swift Square,  
Northwood, Santry  
Dublin 9

T +353 1 807 3800  
F +353 1 807 3838  
E standards@nsai.ie  
W NSAI.ie

Sales:  
T +353 1 857 6730  
F +353 1 857 6729  
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

EUROPEAN STANDARD

**EN ISO 3691-5:2014/AC**

NORME EUROPÉENNE

August 2014

EUROPÄISCHE NORM

Août 2014

August 2014

---

ICS 53.060

English version  
Version Française  
Deutsche Fassung

Industrial trucks - Safety requirements and verification - Part 5: Pedestrian-propelled trucks (ISO 3691-5:2014)

Chariots de manutention - Exigences de sécurité et vérification - Partie 5: Chariots à conducteur à propulsion manuelle (ISO 3691-5:2014)

Flurförderzeuge - Sicherheitstechnische Anforderungen und Verifizierung - Teil 5: Mitgängerbetriebene Flurförderzeuge (ISO 3691-5:2014)

This corrigendum becomes effective on 27 August 2014 for incorporation in the three official language versions of the EN.

Ce corrigendum prendra effet le 27 août 2014 pour incorporation dans les trois versions linguistiques officielles de la EN.

Die Berichtigung tritt am 27. August 2014 zur Einarbeitung in die drei offiziellen Sprachfassungen der EN in Kraft.



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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

---

© 2014 CEN All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.  
Tous droits d'exploitation sous quelque forme et de quelque manière que ce soit réservés dans le monde entier aux membres nationaux du CEN.  
Alle Rechte der Verwertung, gleich in welcher Form und in welchem Verfahren, sind weltweit den nationalen Mitgliedern von CEN vorbehalten.

Ref. No.: EN ISO 3691-5:2014/AC:2014 D/E/F

## **EN ISO 3691-5:2014/AC:2014 (E)**

### **1 Modification to the Foreword**

*Between the 4<sup>th</sup> and 5<sup>th</sup> paragraphs, add the following paragraph:*

"For the purposes of global relevance, the requirements of all clauses referring to ISO/TS 3691-7 have been transferred and published as European Standard EN 16307-5, *Industrial trucks – Safety requirements and verification – Part 5: Supplementary requirements for pedestrian-propelled trucks.*".

### **2 Modification to the Annex ZA (informative), Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC**

*Replace the 2<sup>nd</sup> paragraph with the following one:*

"Once this standard is cited in the Official Journal of the European Union under that Directive and has been implemented as a national standard in at least one Member State, compliance with the clauses of this standard with the exclusion of all references to ISO/TS 3691-8 confers, within the limits of the scope of this standard, a presumption of conformity with the relevant Essential Requirements of that Directive and associated EFTA regulations.".

EUROPEAN STANDARD

**EN ISO 3691-5**

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2014

ICS 53.060

Supersedes EN ISO 3691-5:2009

English Version

## Industrial trucks - Safety requirements and verification - Part 5: Pedestrian-propelled trucks (ISO 3691-5:2014)

Chariots de manutention - Exigences de sécurité et  
vérification - Partie 5: Chariots à conducteur à propulsion  
manuelle (ISO 3691-5:2014)

Flurförderzeuge - Sicherheitstechnische Anforderungen und  
Verifizierung - Teil 5: Mitgängerbetriebene Flurförderzeuge  
(ISO 3691-5:2014)

This European Standard was approved by CEN on 6 January 2014.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

**EN ISO 3691-5:2014 (E)**

<b>Contents</b>	<b>Page</b>
Foreword.....	3
<b>Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC .....</b>	<b>4</b>

## **Foreword**

This document (EN ISO 3691-5:2014) 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 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 2014, and conflicting national standards shall be withdrawn at the latest by August 2014.

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

This document supersedes EN ISO 3691-5:2009.

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, see informative Annex ZA, which is an integral part of this document.

According to the CEN-CENELEC Internal Regulations, the national standards organizations 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

### **Endorsement notice**

The text of ISO 3691-5:2014 has been approved by CEN as EN ISO 3691-5:2014 without any modification.

## **Annex ZA (informative)**

### **Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC**

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide a means of conforming to Essential Requirements of the New Approach Machinery Directive 2006/42/EC.

Once this standard is cited in the Official Journal of the European Union under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Requirements of that Directive and associated EFTA regulations.

**WARNING** — Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.



# INTERNATIONAL STANDARD

# ISO 3691-5

Second edition  
2014-02-15

---

---

## **Industrial trucks — Safety requirements and verification —**

### **Part 5: Pedestrian-propelled trucks**

*Chariots de manutention — Exigences de sécurité et vérification —  
Partie 5: Chariots à conducteur à propulsion manuelle*



Reference number  
ISO 3691-5:2014(E)

© ISO 2014

## ISO 3691-5:2014(E)



### **COPYRIGHT PROTECTED DOCUMENT**

© ISO 2014

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

# Contents

Page

<b>Foreword</b> .....	<b>iv</b>
<b>Introduction</b> .....	<b>v</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>2</b>
<b>3 Terms and definitions</b> .....	<b>2</b>
<b>4 Safety requirements and/or protective measures</b> .....	<b>4</b>
4.1 General.....	4
4.2 Propelling, steering.....	4
4.3 Load-handling controls.....	8
4.4 Lifting systems.....	9
4.5 Parking brake.....	12
4.6 Stability.....	12
4.7 Lateral stabilizers.....	12
4.8 Protection against crushing, shearing and entanglement points.....	12
4.9 Edges and angles.....	13
4.10 Protective devices.....	13
4.11 Additional requirements for trucks with battery-powered lifting.....	14
4.12 Lifting points.....	14
<b>5 Verification of safety requirements and/or protective measures</b> .....	<b>14</b>
5.1 General.....	14
5.2 Functional verification.....	14
5.3 Design verification (type test).....	15
<b>6 Information for use</b> .....	<b>15</b>
6.1 General.....	15
6.2 Instruction handbooks.....	15
6.3 Marking.....	17
<b>Annex A (normative) Method for measurement of forces, <i>F</i></b> .....	<b>20</b>
<b>Annex B (normative) Rated capacity</b> .....	<b>25</b>
<b>Annex C (informative) List of significant hazards</b> .....	<b>28</b>
<b>Bibliography</b> .....	<b>32</b>

## ISO 3691-5:2014(E)

### 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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2. [www.iso.org/directives](http://www.iso.org/directives)

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received. [www.iso.org/patents](http://www.iso.org/patents)

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [http://www.iso.org/iso/home/standards\\_development/resources-for-technical-work/foreword.htm](http://www.iso.org/iso/home/standards_development/resources-for-technical-work/foreword.htm)

The committee responsible for this document is ISO/TC 110, *Industrial trucks*, Subcommittee SC 2, *Safety of industrial trucks*.

This second edition cancels and replaces the first edition (ISO 3691-5:2009), of which it constitutes a minor revision.

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 trucks, variable-reach trucks and burden-carrier trucks*
- *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 5: Pedestrian-propelled trucks*
- *Part 6: Burden and personnel carriers*
- *Part 7: Regional requirements for countries within the European Community* [Technical Specification]
- *Part 8: Regional requirements for countries outside the European Community* [Technical Specification]

## Introduction

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

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 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.

The ISO 3691 series of standards covers safety requirements and their verification for industrial trucks as defined in ISO 5053.

### Structure

An important step forward in the work on the ISO 3691 series of standards 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.

### Assessment of hazards

The product needs to 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 used under the conditions foreseen by the manufacturer.

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

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 will need to apply the following principles, in the order given here:

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

Industrial trucks need to be designed to prevent foreseeable misuse wherever possible, if such would engender risk. In other cases, the manufacturer's instructions will need to draw the user's attention to ways shown by experience in which the machinery ought not to be used.

This part of ISO 3691 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 will also need to be made to ISO 12100.

## **ISO 3691-5:2014(E)**

### **Legislative situation/Vienna Agreement**

From the very beginning, the task of the working group was to revise ISO 3691:1980 and establish worldwide basic standards to comply with the major legislative regulations in, for example, the EU, Japan, Australia and North America.

Every effort was made to develop a globally relevant International Standard. That goal was achieved with most of the issues. For several potential problem areas compromises were needed and will be needed in the future. Where divergent regional requirements remain, these are addressed by ISO/TS 3691-7 and ISO/TS 3691-8.

In order to ensure that the revised International Standard will be actively used in the ISO member countries, worldwide, procedures are necessary to replace the existing national standards and technical regulations by the revised International Standard. In the European Community, ISO and the European Committee for Standardization (CEN) agreed on technical co-operation under the Vienna Agreement, with the aim of replacing European Standards (EN) by International Standards. Other countries are asked to make similar agreements to ensure that their national standards and technical regulations are replaced by this International Standard.

Only by these actions will there be the guarantee that products in accordance with International Standards can be shipped worldwide freely without any technical barriers.

# Industrial trucks — Safety requirements and verification —

## Part 5: Pedestrian-propelled trucks

### 1 Scope

This part of ISO 3691 gives safety requirements and the means for their verification for the following types of pedestrian-propelled trucks (hereafter referred to as *trucks*), equipped with load-handling devices for normal industrial duties, e.g. fork arms and platforms, or integrated attachments for special applications:

- pedestrian-propelled straddle stackers,
- pallet stackers,
- industrial trucks with capacities not exceeding 1 000 kg with manual or electrical battery-powered lifting,
- low-lift pallet trucks with lift height up to 300 mm and rated capacity up to 2 300 kg,
- scissor-lift pallet trucks with lift heights up to 1 000 mm or rated capacity up to 1 000 kg with manual or electrical battery-powered lifting.

It is applicable to trucks provided with either manual or electrical battery-powered lifting, operating on smooth, level, hard surfaces.

NOTE On-board battery chargers are considered to be part of the truck. Attachments mounted on the load-carrier or on the fork arms which are removable by the user are not considered to be part of the truck.

This part of ISO 3691 deals with significant hazards, hazardous situations and events relevant to the applicable machines when used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer (see [Annex C](#)).

It does not establish the additional requirements for

- a) climatic conditions,
- b) operation in severe conditions (e.g. extreme environmental conditions such as freezer applications, high temperatures, corrosive environments, strong magnetic fields),
- c) electromagnetic compatibility (emission/immunity),
- d) handling of loads the nature of which could lead to dangerous situations (e.g. molten metal, acids/alkalis, radiating materials, especially brittle loads),
- e) handling suspended loads which may swing freely handling,
- f) use on public roads,
- g) direct contact with foodstuffs,
- h) operation on gradients or on surfaces other than smooth, level, hard surfaces,
- i) lifting systems using belts,

## ISO 3691-5:2014(E)

- j) lifting of persons,
- k) trucks with overturning moment greater than 40 000 N·m,
- l) scissor-lift trucks whose lifting is powered by external means (electric, pneumatic),
- m) roll containers,
- n) trucks that are intended to be towed by powered vehicles,
- o) trucks designed for special applications (e.g. hospitals, restaurant trolleys),
- p) winch-operated trucks,
- q) mobile lifting tables.

Hazards relevant to noise, vibration and visibility are not significant and are not dealt with in this part of ISO 3691.

Regional requirements, additional to those given in this part of ISO 3691, are addressed in ISO/TS 3691-7.

## 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.

ISO 2328, *Fork-lift trucks — Hook-on type fork arms and fork arm carriages — Mounting dimensions*

ISO 3287, *Powered industrial trucks — Symbols for operator controls and other displays*

ISO 5053, *Powered industrial trucks — Terminology*

ISO 12100, *Safety of machinery — General principles for design — Risk assessment and risk reduction*

ISO 13857, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs*

ISO 15870, *Powered industrial trucks — Safety signs and hazard pictorials — General principles*

ISO 20898, *Industrial trucks — Electrical requirements*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5053 and ISO 12100, and the following apply.

**3.1  
stacker truck**  
masted truck without tilt, with load-bearing outriggers, equipped with fork arms, a platform or other load-handling device, designed to be manually pushed, pulled and steered by one pedestrian operator

Note 1 to entry: The load can be raised by either manual means or battery power.

**3.1.1  
straddle stacker**  
stacking truck with outriggers, equipped with fork arms that are located between the outriggers

**3.1.2  
pallet stacker**  
stacking truck where the fork arms extend over the outriggers



This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

- 
- [Looking for additional Standards? Visit Intertek Inform Infostore](#)
  - [Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation](#)
-