

This is a preview of "ISO 3691-3:2016". [Click here to purchase the full version from the ANSI store.](#)

First edition  
2016-12-15

---

---

## **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**

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

*Partie 3: Exigences complémentaires pour chariots avec poste de conduite élevable et pour chariots spécialement conçus pour une conduite avec des charges en élévation*



Reference number  
ISO 3691-3:2016(E)

© ISO 2016



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2016, Published in Switzerland

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  
Ch. de Blandonnet 8 • CP 401  
CH-1214 Vernier, Geneva, Switzerland  
Tel. +41 22 749 01 11  
Fax +41 22 749 09 47  
copyright@iso.org  
www.iso.org

This is a preview of "ISO 3691-3:2016". [Click here to purchase the full version from the ANSI store.](#)

## 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>1</b>
<b>3 Terms and definitions</b> .....	<b>2</b>
<b>4 Safety requirements and/or protective measures</b> .....	<b>3</b>
4.1 General.....	3
4.2 Modes of operation when lateral stacking.....	3
4.3 Brakes.....	3
4.3.1 Operation without guidance systems.....	3
4.3.2 Operation within guided systems.....	3
4.4 Additional requirements for trucks with elevating operator position.....	4
4.4.1 Travel speed.....	4
4.4.2 Brakes.....	4
4.4.3 Controls.....	4
4.4.4 Systems for lifting and lowering.....	4
4.4.5 Operator position.....	5
4.4.6 Emergency lowering control.....	9
4.5 Optical warning devices.....	9
4.6 Stability.....	9
<b>5 Verification of requirements</b> .....	<b>9</b>
<b>6 Information for use</b> .....	<b>9</b>
6.1 General.....	9
6.2 Instruction handbook — Operation of truck — Requirements additional to those of ISO 3691-1.....	10
6.3 Marking.....	10
6.4 Installation information.....	10
<b>Annex A (informative) List of significant hazards</b> .....	<b>11</b>
<b>Bibliography</b> .....	<b>13</b>

## 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 (see [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 (see [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 World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html)

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

This first edition of ISO 3691-3, together with ISO 3691-1, ISO 3691-2, ISO 3691-4, ISO 3691-5, ISO 3691-6, ISO/TS 3691-7, and ISO/TS 3691-8, cancels and replaces ISO 3691:1980, of which it constitutes a technical 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]

The following parts are under preparation:

- *Part 4: Driverless industrial trucks and their systems*

This is a preview of "ISO 3691-3:2016". [Click here to purchase the full version from the ANSI store.](#)

## Introduction

### General

This part of ISO 3691 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 part of ISO 3691.

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 covers safety requirements and their verification for industrial trucks as defined in ISO 5053-1.

### Structure

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

This is a preview of "ISO 3691-3:2016". [Click here to purchase the full version from the ANSI store.](#)

### **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.