
**Industrial trucks — Safety rules
for application, operation and
maintenance**

*Chariots de manutention — Règles de sécurité pour les applications,
l'utilisation et la maintenance*



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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.

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).

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).

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For an explanation of the voluntary nature of standards, 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 www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 110, *Industrial trucks*, Subcommittee SC 2, *Safety of powered industrial trucks*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Industrial trucks — Safety rules for application, operation and maintenance

1 Scope

This document gives safety requirements for the application, operation, maintenance, transport, tow, assembly and storage of industrial trucks (hereafter referred to as trucks) as defined in ISO 5053-1.

It applies to the following truck types:

- a) counterbalance lift trucks;
- b) reach trucks (with retractable mast or retractable fork arm carriage);
- c) straddle trucks;
- d) pallet-stacking trucks;
- e) platform trucks;
- f) double stackers;
- g) side-loading trucks (one side only);
- h) lateral-stacking trucks (both sides), and lateral- and front-stacking trucks;
- i) order-picking trucks;
- j) bidirectional and multidirectional trucks;
- k) counterbalance container handlers;
- l) articulated counterbalance lift trucks;
- m) variable-reach trucks;
- n) pallet trucks;
- o) platform and stillage trucks;
- p) tractors with a drawbar pull up to and including 20 000 N;
- q) burden and personnel carriers;
- r) trucks powered by battery, diesel, gasoline or gas (e.g. LPG, CNG, LNG).

Automated functions and driverless variants of the above list of trucks are also considered part of this scope.

2 Normative references

The following documents are referred to in the 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.

ISO 3691-1, *Industrial trucks — Safety requirements and verification — Part 1: Self-propelled industrial trucks, other than driverless trucks, variable-reach trucks and burden-carrier trucks*

ISO 3691-4, *Industrial trucks — Safety requirements and verification — Part 4: Driverless industrial trucks and their systems*

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

ISO 5057, *Industrial trucks — Inspection and repair of fork arms in service on fork-lift trucks*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1

user

owner or hirer of trucks

3.2

operator

designated person, appropriately trained and authorized, who is responsible for the movement and load handling of a truck

Note 1 to entry: Depending on the truck type, the operator can be riding on the truck, on foot accompanying the truck (e.g. tiller-, cable-controlled) or remote from the truck (e.g. remote radio-controlled) or initiating automatic/driverless operations.

Note 2 to entry: If a driverless truck, the operator shall be the person appropriately trained and authorized to start automatic operation(s) of the truck.

3.3

hazard zone

danger zone

any space within and/or around machinery in which a person can be exposed to a hazard

Note 1 to entry: The zone which can be reached by goods, operating equipment or load carrying devices in the process of lowering or falling also belongs to hazard zone.

Note 2 to entry: If a driverless truck system is in use, the areas in which the truck(s) operate may be classified as operating, operating hazard or restricted.

[SOURCE: ISO 12100:2010, 3.11, modified — Notes 1 and 2 to entry have been added.]

3.4

trainer

person who conducts the training of the *operator* (3.2)

3.5

narrow aisle

traffic path for trucks where the limited distance between the outer parts of the truck including the load and fixed parts of the environment (e.g. racking) is a hazard

3.6

automated function

movement for transport or positioning of the truck and/or load initiated by the *operator* (3.2) but not requiring continued action by the operator

[SOURCE: ISO 24134:2006, 3.1]