



SLOVENSKI STANDARD
SIST EN 1757-4:2004

01-junij-2004

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Safety of industrial trucks - Pedestrian propelled trucks - Part 4: Scissor lift pallet-trucks

Sicherheit von Flurförderzeugen - Mitgänger-Flurförderzeuge - Teil 4: Scheren-
Gabelhubwagen

Sécurité des chariots de manutention - Chariots manuels - Partie 4: Transpalettes a
ciseaux

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Ta slovenski standard je istoveten z: EN 1757-4:2003

ICS:

53.060 Industrijski tovornjaki Industrial trucks

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English version

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Flurförderzeuge - Teil 4: Scheren-Gabelhubwagen

This European Standard was approved by CEN on 9 January 2003.

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 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 Management Centre has the same status as the official versions.

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

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Foreword

This document EN 1757-4:2003 has been prepared by 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of an identical text or by endorsement, at the latest by October 2003, and conflicting national standards shall be withdrawn at the latest by October 2003.

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 EC Directive(s).

For relationship with EC Directive(s), see informative annex ZA, which is an integral part of this document.

Annexes A and B are normative.

This European Standard is one of a series of European Standards for the safety of Industrial trucks. This series of standards includes :

EN 1726	Safety of Industrial trucks - Self propelled trucks up to and including 10 000 kg capacity and industrial tractors with a drawbar pull up to and including 20 000 N Part 1 : General requirements Part 2 : Additional requirements for trucks with elevating operator position and trucks specifically designed to travel with elevated loads https://standards.iteh.ai/catalog/standards/sist/99ef480d-a936-49e8-b112-1757-4
EN 1551	Safety of Industrial trucks - Self propelled trucks over 10 000 kg capacity
EN 1459	Safety of Industrial trucks - Self propelled variable reach trucks
EN 1757	Safety of Industrial trucks - Pedestrian propelled trucks Part 1 : Stacker trucks Part 2 : Pallet trucks Part 3 : Platform trucks Part 4 : Scissor lift pallet trucks
EN 1525	Safety of Industrial trucks - Driverless trucks and their systems
EN 1526	Safety of Industrial trucks - Additional requirements for automated functions on trucks
EN 1175	Safety of Industrial trucks - Electrical requirements Part 1 : General requirements for battery powered trucks Part 2 : General requirements for internal combustion engine powered trucks Part 3 : Specific requirements for electrical power transmission systems of internal combustion engine powered trucks
EN 1755	Safety of Industrial trucks - Operation in potentially explosive atmospheres – Use in flammable gas, vapour, mist and dust
EN 12053	Safety of Industrial trucks - Test methods for measuring noise emissions
prEN ISO 13564	Safety of Industrial trucks - Test methods for measuring visibility from self-propelled trucks (ISO/DIS 13564:1996)

EN 13059	Safety of Industrial trucks - Test methods for measuring vibration
EN 12895	Industrial trucks - Electromagnetic compatibility

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard : Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

0 Introduction

This standard has been prepared to be a harmonised standard to provide one means of conforming with the essential safety requirements of the Machinery Directive and associated EFTA Regulations.

This European standard is a type C standard as stated in EN 1070.

The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this standard.

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 the other standards, for machines that have been designed and built according to the provisions of this type C standard.

With the aim of clarifying the intention of the standard and avoiding doubts when reading it, the following assumptions were made when producing it :

- only competent persons operate the machine
- components without specific requirements are designed in accordance with usual engineering practice and calculation code, including all failure modes.

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1 Scope

1.1 This standard applies to pedestrian propelled industrial scissor lift pallet trucks as defined in 3.1 with lift heights up to 1,000 mm and rated capacities up to and including 1,000 kg hereinafter referred to as "trucks".

On board battery chargers are part of the truck.

1.2 Attachments, fixed or removable, which can be installed on the truck are not dealt with in this standard.

The lifting tables referred to in EN 1570 are not dealt with in this standard.

1.3 This standard deals with the technical requirements to minimise the hazards listed in clause 4 which can arise during commissioning, operation and maintenance of trucks when carried out in accordance with the specifications as intended by the manufacturer.

In addition trucks should comply, for the hazards not covered by this standard, with the applicable companion standards and as appropriate with EN 292.

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1.4 This standard does not establish the additional requirements for :

- operation in severe conditions (e.g. extreme environmental conditions such as : freezer applications, high temperatures, corrosive environment, strong magnetic fields),
- operation subject to special rules (e.g. potentially explosive atmospheres),
- electromagnetic compatibility (emission - immunity),
- handling of loads the nature of which could lead to dangerous situations (e.g. molten metal, acids/alkalis, radiating materials, specially brittle loads),
- hazards occurring during construction, transportation, decommissioning and disposal,
- wind pressure in and out of use,
- direct contact with foodstuffs,
- operation on surface other than smooth, level, hard surfaces or gradients,
- lifting of persons,
- trucks whose lifting is powered by external means : electrical (mains ...), pneumatic source, ...

1.5 Other possible limitations of the scope of other standards referred to that also apply to this standard.

1.6 Hazards relevant to noise, vibration, visibility and static electricity are not dealt with in this standard.

1.7 This standard applies to trucks manufactured after the date of issue.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 292-1 *Safety of machinery - Basic concepts, general principles for design - Part 1: Basic terminology, methodology.*

EN 292-2 : 1991 *Safety of machinery - Basic concepts, general principles for design - Part 2: Technical principles and specifications.*

EN 1050 : 1996 *Safety of machinery - Principles for risk assessment.*

EN 1175-1 *Safety of industrial trucks – Electrical requirements - Part 1: General requirements for battery powered trucks.*

EN 1726-1 : 1998 *Safety of industrial trucks - Self-propelled trucks up to and including 10 000 kg capacity and industrial tractors with a drawbar pull up to and including 20 000 N - Part 1: General requirements.*

ISO 3287 *Powered industrial trucks - Symbols for operator controls and other displays.*

3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply.

3.1

pedestrian propelled industrial scissor lift pallet truck

truck without a mast, with more than two wheels and with two fork arms or platform with scissor lifting and with wheel base varying with the lift height and lateral stabilisers operating on a smooth, level, hard surface

The truck is designed to be manually pushed, pulled and steered, by one pedestrian operator using an articulated tiller.

The load may be raised and lowered on a non tiltable support by either manual means or electrical battery power.

3.2 rated capacity

load in kilograms given by the manufacturer, the truck can lift and transport under intended operation

The rated capacity is defined for a load

- uniformly distributed and covering entirely the length and width of the fork arms or platform, without going beyond the length.
- the centre of gravity of which shall be on the centre line of the truck located at a distance horizontally from the face of the fork arms shank and vertically from the upper face of the fork arms, equal to half the length of the fork arms.

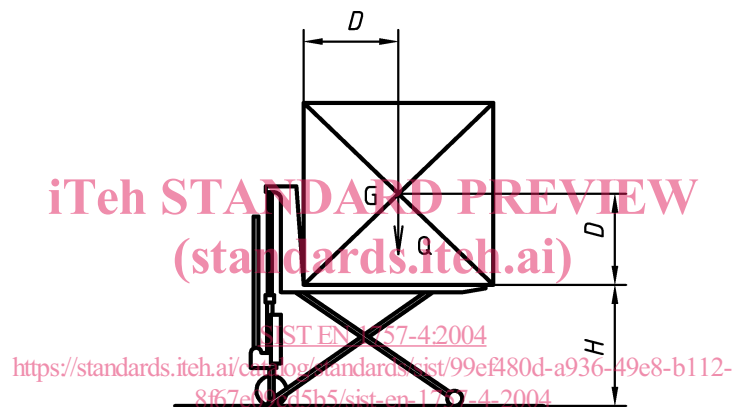


Figure 1

3.3 intended operating position

position in which the operator may control all operational functions as intended by the manufacturer

3.4 intended operation

the use for which the truck is designed according to the manufacturer's handbook

3.5 operator

designated person, suitably trained (see EN ISO 9001:2000, 4.18) qualified by knowledge and practical experience, and provided with the necessary instructions to enable the required (operation, test and/or examination) to be carried out safely

4 List of hazards

The following hazards from annex A of EN 1050:1996 are applicable in the situations described and could involve risks to persons if not reduced or eliminated. The corresponding requirements are designed to limit the risk or reduce these hazards in each situation.

Hazards	Corresponding requirements
<p>4.1 MECHANICAL HAZARDS</p>	
<p>4.1.1 Crushing</p>	<p>5.3 Propelling, steering</p> <p>5.4 Load handling controls</p> <p>5.5 Hydraulic lifting system</p> <p>5.6 Wheel guards</p> <p>5.7 Parking brake</p> <p>5.8 Stability</p> <p>5.10 Protection against crushing, shearing and entanglement points</p> <p>6.2.2 Structural test</p> <p>7 Information for use</p>
<p>4.1.2 Shearing</p>	<p>5.10 Protection against crushing, shearing and entanglement points</p> <p>5.11 Edges and angles</p>
<p>4.1.3 Entanglement</p>	<p>5.10 Protection against crushing, shearing and entanglement points</p>
<p>4.1.4 Impact</p>	<p>5.3 Propelling, steering</p> <p>5.11 Edges and angles</p> <p>5.12 Additional requirements for trucks with battery powered lifting</p> <p>7 Information for use</p>
<p>4.1.5 Friction or abrasion</p>	<p>5.3 Propelling, steering</p>
<p>4.1.6 High pressure fluid ejection</p>	<p>5.5 Hydraulic lifting system</p>
<p>4.2 ELECTRICAL HAZARDS</p>	<p>5.12 Additional requirements for trucks with battery powered lifting</p>

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Hazards	Corresponding requirements
<p>4.3 HAZARDS GENERATED BY NEGLECTING ERGONOMIC PRINCIPLES</p> <p>4.3.1 Unhealthy postures or excessive efforts</p> <p>4.3.2 Inadequate consideration of hand-arm or foot-leg anatomy</p> <p>4.3.3 Neglected use of personal protection equipment</p> <p>4.3.4 Human error</p>	<p>5.2 Design and construction forces for truck</p> <p>5.3 Propelling, steering</p> <p>5.4 Load handling controls</p> <p>7 Information for use</p> <p>5.3 Propelling, steering</p> <p>5.4 Load handling controls</p> <p>7 Information for use</p> <p>5.4 Load handling controls</p> <p>5.12.1 Lifting</p> <p>7 Information for use</p>
<p>4.4 HAZARDS DUE TO FUNCTIONAL DISORDERS</p> <p>4.4.1 Failure of energy supply</p> <p>4.4.2 Unexpected ejection of machine parts or fluids</p> <p>4.4.3 Failure of control systems</p> <p>4.5 HAZARDS DUE TO FAILURES</p>	<p>5.5.6 Failure of energy supply or hydraulic circuit</p> <p>5.12.2 Electrical systems and equipment</p> <p>5.5.4 Hydraulic circuit</p> <p>5.5.3 Pressure relief valves</p> <p>5.5.5 Lowering control</p> <p>5.5 Hydraulic lifting system</p> <p>6.2.2 Structural test</p> <p>7 Information for use</p>

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Hazards		Corresponding requirements	
4.6.1	Insufficient ability of machinery to remain immobilised	5.7	Parking brake
		7	Information for use
4.6.2	Contact with the wheels	5.3	Propelling, steering
		7	Information for use
4.6.3	Impact hazard	5.11	Edges and angles
4.7	ADDITIONAL HAZARDS DUE TO LIFTING		
4.7.1	Lack of stability	5.8	Stability
		5.9	Lateral stabilisers
		7	Information for use
4.7.2	Overload	5.5.3	Pressure relief valve
		7	Information for use
4.7.3	Amplitude of movement	5.5.1	End stroke device
4.8.4	Falling of loads	5.5	Hydraulic lifting system
		5.8	Stability
		7	Information for use
4.8	HAZARDS COMBINATIONS		Covering each individual hazard is sufficient for covering combinations of hazards

5 Requirements

5.1 General

All the requirements from 5.2 to 5.11 apply to trucks with both manual or powered lifting.

Subclause 5.12 applies only to powered lifting trucks.