

**Elektriga töötavad riulid ja alused,
karussellsüsteemid ja tõsteliftid.
Ohutusnõuded**

Power-operated mobile racking and shelving,
carrousel and storage lifts - Safety requirements

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 15095:2007 sisaldab Euroopa standardi EN 15095:2007 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 18.12.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 15095:2007 consists of the English text of the European standard EN 15095:2007.</p> <p>This document is endorsed on 18.12.2007 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>This European Standard deals with the safety requirements for the following types of power-operated storage equipment:- storage carousels; - storage lifts; - mobile shelving, pallet racking and cantilever racking with the objective of eliminating or minimising the hazards described in Clause 4. These hazards can arise during installation, starting up, operation, maintenance, testing and dismantling of the equipment. It is essential that the safety requirements and/or measures taken in this standard be applied to storage equipment which operates indoors. Under difficult conditions, it is essential that additional hazard analysis and safety measures be taken into account, e. g. outdoor conditions, freezer applications, high temperatures, corrosive environment, strong magnetic fields, risk of explosive atmosphere, radioactive conditions, storage goods which due to their nature could generate hazardous situations (e. g. molten metal, acids/alkalis, fragile goods or explosives), effects of earthquakes and also contact with food. 1.3 Examples of power-operated storage equipment to which this standard applies are shown in Annex A.</p>	<p>Scope:</p> <p>This European Standard deals with the safety requirements for the following types of power-operated storage equipment:- storage carousels; - storage lifts; - mobile shelving, pallet racking and cantilever racking with the objective of eliminating or minimising the hazards described in Clause 4. These hazards can arise during installation, starting up, operation, maintenance, testing and dismantling of the equipment. It is essential that the safety requirements and/or measures taken in this standard be applied to storage equipment which operates indoors. Under difficult conditions, it is essential that additional hazard analysis and safety measures be taken into account, e. g. outdoor conditions, freezer applications, high temperatures, corrosive environment, strong magnetic fields, risk of explosive atmosphere, radioactive conditions, storage goods which due to their nature could generate hazardous situations (e. g. molten metal, acids/alkalis, fragile goods or explosives), effects of earthquakes and also contact with food. 1.3 Examples of power-operated storage equipment to which this standard applies are shown in Annex A.</p>
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Elévateurs de stockage, carrousels et rayonnage mobile à commande mécanique - Prescriptions de sécurité

Kraftbetriebene verschiebbare Paletten- und Fachbodenregale, Umlaufregale und Lagerlifte - Sicherheitsanforderungen

This European Standard was approved by CEN on 23 September 2007.

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Foreword

This document (EN 15095:2007) has been prepared by Technical Committee CEN/TC 149 "Power-operated warehouse equipment", the secretariat of which is held by DIN.

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 May 2008, and conflicting national standards shall be withdrawn at the latest by May 2008.

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

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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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

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

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

For machines designed and built according to the specifications of this Type C Standard the following applies:

"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."

When this standard was prepared it was assumed that:

- only trained staff would operate, repair or maintain the machine;
- components without special requirements are
 - 1) sized in accordance with good engineering practice and methods of calculation including all types of failure;
 - 2) correctly constructed mechanically and electrically;
 - 3) made of materials of adequate loading capacity and of suitable quality;
 - 4) made of materials that are fit for that purpose.
- components are kept in a good repair and operating condition so that the required characteristics can be maintained in spite of wear and tear;
- sizing of load bearing parts ensures safe operation of the machine in a loading range from 0 % to 100 % of the nominal capacity and during testing conditions if applicable;
- details of particular conditions of use and the installation site are agreed between user and manufacturer;
- working area is adequately illuminated;
- installation site permits safe operation of the machine.

1 Scope

1.1 This European Standard deals with the safety requirements for the following types of power-operated storage equipment:

- storage carousels;
- storage lifts;
- mobile shelving, pallet racking and cantilever racking

with the objective of eliminating or minimising the hazards described in Clause 4. These hazards can arise during installation, starting up, operation, maintenance, testing and dismantling of the equipment.

1.2 It is essential that the safety requirements and/or measures taken in this standard be applied to storage equipment which operates indoors. Under difficult conditions, it is essential that additional hazard analysis and safety measures be taken into account, e. g. outdoor conditions, freezer applications, high temperatures, corrosive environment, strong magnetic fields, risk of explosive atmosphere, radioactive conditions, storage goods which due to their nature could generate hazardous situations (e. g. molten metal, acids/alkalis, fragile goods or explosives), effects of earthquakes and also contact with food.

1.3 Examples of power-operated storage equipment to which this standard applies are shown in Annex A.

1.4 With regard to buildings and parts of buildings, this standard applies only insofar that an assessment regarding hazards and risks in connection with interfaces to the storage equipment is carried out.

1.5 Storage equipment whose only power source is directly used human labour or gravity are excluded from the scope of application of this standard.

1.6 Power-operated storage equipment or parts of them do not fall under the regulations for passenger lifts. They are intended to handle and store goods. They are not intended to transport passengers under normal use (except for maintenance) and therefore not considered to be lifts (elevators).

1.7 This standard does not take hazards into account, which arise from noisy environments or environments subject to electromagnetic interference outside the range quoted in EN 61000-6-2.

2 Normative references

The following referenced documents are indispensable for the application 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.

EN 294:1992, *Safety of machinery — Safety distance to prevent danger zones being reached by the upper limbs*

EN 349:1993, *Safety of machinery — Minimum gaps to avoid crushing of parts of the human body*

EN 811, *Safety of machinery — Safety distances to prevent danger zones being reached by the lower limbs*

EN 1760-1, *Safety of machinery — Pressure sensitive protective devices — Part 1: General principles for the design and testing of pressure sensitive mats and pressure sensitive floors*

EN 1760-2, *Safety of machinery — Pressure sensitive protective devices — Part 2: General principles for the design and testing of pressure sensitive edges and pressure sensitive bars*

EN 12369-1, *Wood-based panels — Characteristic values for structural design — Part 1: OSB, particleboards and fibreboards*

EN 60204-1:2006, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2005, modified)*

EN 60335-1, *Household and similar electrical appliances — Safety — Part 1: General requirements (IEC 60335-1:2001, modified)*

EN 60950-1:2006, *Information technology equipment — Safety — Part 1: General requirements (IEC 60950-1:2005, modified)*

EN 61496-1, *Safety of machinery — Electro-sensitive protective equipment — Part 1: General requirements and tests (IEC 61496-1:2004, modified)*

EN ISO 12100-1:2003, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology (ISO 12100-1:2003)*

EN ISO 12100-2:2003, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles (ISO 12100-2:2003)*

EN ISO 13849-1, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2006)*

EN ISO 13850, *Safety of machinery — Emergency stop - Principles for design (ISO 13850:2006)*

ISO 6336-1, *Calculation of load capacity of spur and helical gears — Part 1: Basic principles, introduction and general influence factors*

ISO 6336-2, *Calculation of load capacity of spur and helical gears — Part 2: Calculation of surface durability (pitting)*

ISO 6336-3, *Calculation of load capacity of spur and helical gears — Part 3: Calculation of tooth bending strength*

ISO 6336-5, *Calculation of load capacity of spur and helical gears — Part 5: Strength and quality of materials*

ISO 6336-6, *Calculation of load capacity of spur and helical gears — Part 6: Calculation of service life under variable load*

ISO 10823, *Guidelines for the selection of roller chain drives*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100-1:2003 and the following apply.

3.1

carousels

horizontal and/or vertical circulating storage equipment with load carriers (freely suspended carriers, suspended rods or others)

NOTE They can be provided with one or more access openings (see Figure A.1 and Figure A.2)