Liftide valmistamise ja paigaldamise ohutuseeskirjad. Inimeste ja kaupade transportimiseks mõeldud eriotstarbelised liftid. Osa 41: Liikumispuudega inimestele mõeldud vertikaalsed tõsteplatvormid

Safety rules for the construction and installation of lifts - Special lifts for the transport of persons and goods - Part 41: Vertical lifting platforms intended for use by persons with impaired mobility

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 81-41:2010 sisaldab Euroopa standardi EN 81-41:2010 ingliskeelset teksti.	This Estonian standard EVS-EN 81-41:2010 consists of the English text of the European standard EN 81-41:2010.
Standard on kinnitatud Eesti Standardikeskuse 31.12.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 31.12.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 15.12.2010.	Date of Availability of the European standard text 15.12.2010.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

ICS 11.180.10, 91.140.90

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 81-41

December 2010

ICS 91.140.90; 11.180.10

English Version

Safety rules for the construction and installation of lifts - Special lifts for the transport of persons and goods - Part 41: Vertical lifting platforms intended for use by persons with impaired mobility

Règles de sécurité pour la construction et l'installation des élévateurs - Elévateurs spéciaux pour le transport des personnes et des charges - Partie 41 : Plates-formes élévatrices verticales à l'usage des personnes à mobilité réduite

Sicherheitsregeln für die Konstruktion und den Einbau von Aufzügen - Spezielle Aufzüge für den Transport von Personen und Gütern - Teil 41: Senkrechte Plattformaufzüge bestimmt für den Einsatz von Personen mit eingeschränkter Beweglichkeit

This European Standard was approved by CEN on 7 October 2010.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN 81-41:2010: E

Contents

Page

Foreword

This document (EN 81-41:2010) has been prepared by Technical Committee CEN/TC 10 “Lifts, escalators and moving walks”, the secretariat of which is held by AFNOR.

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 June 2011, and conflicting national standards shall be withdrawn at the latest by June 2011.

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 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 2006/42/EC.

For relationship with EC Directive 2006/42/EC, 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, 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

The population of Europe is ageing and the prevalence of disability, including disability associated with the ageing process, is increasing. Older people and people with disabilities at present are estimated to number some 80 million people – a large and growing proportion of the European Union population. The changing demography presents both opportunities and challenges for the Union. The economic, social and cultural potential of older people and people with disabilities is underexploited at present. However there is a growing recognition that society needs to exploit this potential for the economic and social benefit of society generally.

This is one of the reasons that led to this standard on vertical lifting platforms for people with impaired mobility being one means to provide accessibility to buildings.

This standard is a type C standard as stated in EN ISO 12100 (all parts).

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 and type 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.

The lifting platforms defined in this standard are suitable for type A and type B wheelchairs as defined in EN 12183 and/or EN 12184.

Those items relevant to lifting platforms referenced within EN 81-70 have been included within this standard.

This standard does not only address the essential health and safety requirements of the Machinery Directive, but additionally states minimum rules for the installation of lifting platforms into buildings/constructions. There may be in some countries regulations for the construction of building etc. which cannot be ignored.

It is essential that minimum passageways conform to national building regulations and are not obstructed by any open door or trap and/or any protection means provided for working areas outside of the enclosed liftway where fitted according to the maintenance instructions.

Assumptions

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

— Vertical lifting platforms are installed in both new and existing buildings;

— For existing buildings where space is not available, other dimensions may be considered. Local building regulations should be observed;

— components without specific requirements are:

a) designed in accordance with the usual engineering practice and calculation codes, including all failure modes;

b) of sound mechanical and electrical construction;

c) general hazards due to hydraulic, pneumatic, etc. equipment are dealt with according to relevant B level standards for common use.

d) Materials known to be harmful materials, such as asbestos are not to be used as part of the machine;

— components are kept in good repair and working order, in accordance with the maintenance manual, so that the required characteristics remain despite wear;

— by design of the load bearing elements, a safe operation of the machine is assured for loading ranging from zero to, the dynamic operation maximum working load and static loading, to the maximum static load;

— to ensure the safe functioning, the operating temperature range of the equipment has to take into account the conditions of the place of use of the machinery, inside the maximum range of ambient temperature between + 5 °C and + 40 °C. For very hot or cold environments extra requirements may be necessary.

— negotiations have been made between the customer and the manufacturer about:

  — environmental conditions;

  — civil engineering problems;

  — other aspects related to the place of installation;

  — the use and places of use of the machinery;

  — the place of installation allows a safe use for the machine;

  — any additional fire protection requirements;

  — suitability for the user (see Annex B).

1 Scope

1.1 This European Standard deals with safety requirements for construction, manufacturing, installation, maintenance and dismantling of electrically powered vertical lifting platforms affixed to a building structure intended for use by persons with impaired mobility:

— travelling vertically between predefined levels along a guided path whose inclination to the vertical does not exceed 15°;

— intended for use by persons with or without a wheelchair;

— supported or sustained by rack and pinion, wire ropes, chains, screw and nut, friction/traction between wheels and the rail, guided chain, scissors mechanism or hydraulic jack (direct or indirect);

— with enclosed liftways;

— with a speed not greater than 0,15 m/s;

— with platforms where the carrier is not completely enclosed.

1.2 This standard deals with all significant hazards relevant to lifting platforms, when they are used as intended and under the conditions foreseen by the manufacturer (see Clause 4).

1.3 This European Standard does not specify the additional requirements for:

— operation in severe conditions (e.g. extreme climates, strong magnetic fields);

— lightning protection;

— operation subject to special rules (e.g. potentially explosive atmospheres);

— handling of materials, the nature of which could lead to dangerous situations;

— vertical lifting platforms whose primary function is the transportation of goods;

— vertical lifting platforms whose carriers are completely enclosed;

— vertical lifting platforms prone to vandalism;

— hazards occurring during manufacture;

— earthquakes, flooding;

— fire fighting, evacuation and behaviour during a fire;

— noise and vibrations;

— the design of concrete, hardcore, timber or other foundation or building arrangement;

— the design of anchorage bolts to the supporting structure;

— type C wheelchairs as defined in EN 12183 and/or EN 12184.

— NOTE For the actual type of machinery, noise is not considered a significant nor relevant hazard.

1.4 This standard is not applicable to Vertical Lifting Platforms intended for use by persons with impaired mobility which are manufactured before the date of its publication as an EN.

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 81-1:1998, *Safety rules for the construction and installation of lifts — Part 1: Electric lifts*

EN 81-2:1998, *Safety rules for the construction and installation of lifts — Part 2: Hydraulic lifts*

EN 81-58*, Safety rules for the construction and installation of lifts — Examination and tests — Part 58: Landing doors fire resistance test*

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

EN 953, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards*

EN 12015, *Electromagnetic compatibility — Product family standard for lifts, escalators and moving walks — Emission*

EN 12016, *Electromagnetic compatibility — Product family standard for lifts, escalators and moving walks — Immunity*

EN 12183, *Manual wheelchairs — Requirements and test methods*

EN 12184, *Electrically powered wheelchairs, scooters and their chargers — Requirements and test methods*

EN 12385-4, *Steel wire ropes — Safety — Part 4: Stranded ropes for general lifting applications*

EN 13411 (all parts), *Terminations for steel wire ropes*

EN 50214, *Flat polyvinyl chloride sheathed flexible cables*

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

EN 60204-32, *Safety of machinery — Electrical equipment of machines — Part 32: Requirements for hoisting machines (IEC 60204-32:2008)*

EN 60529, *Degrees of protection provided by enclosures (IP code) (IEC 60529:1989)*

EN 60664-1:2007*, Insulation coordination for equipment within low-voltage systems — Part 1: Principles, requirements and tests (IEC 60664-1:2007)*

EN 60747-5 (all parts)*, Discrete semiconductor devices and integrated circuits — Part 5: Optoelectronic devices*

EN 60947-1:2007, *Low-voltage switchgear and controlgear — Part 1: General rules (IEC 60947-1:2007)*

EN 60947-4-1, *Low-voltage switchgear and controlgear — Part 4-1: Contactors and motor-starters — Electromechanical contactors and motor-starters (IEC 60947-4-1:2000)*

EN 60947-5-1, *Low-voltage switchgear and controlgear — Part 5-1: Control circuit devices and switching elements — Electromechanical control circuit devices (IEC 60947-5-1:2003)*

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

EN 61249-2 (all parts), *Materials for printed boards and other interconnection structures — Part 2: Sectional specification set for reinforced base materials, clad and unclad*

EN 61558-1, *Safety of power transformers, power supplies, reactors and similar products — Part 1: General requirements and tests (IEC 61558-1:2005)*

EN 62326-1, *Printed boards — Part 1: Generic specification (IEC 62326-1:2002)*

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

EN ISO 13857:2008, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857:2008)*

ISO 606, *Short-pitch transmission precision roller and bush chains, attachments and associated chain sprockets*

ISO 6336 (all parts), *Calculation of load capacity of spur and helical gears*

ISO 7000, *Graphical symbols for use on equipment — Index and synopsis*

IEC 60417-DB, *Graphical symbols for use on equipment*

HD 384.6.61 S1, *Electrical installations of buildings — Part 6-61: Verification — Initial verification*

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
balancing weight
mass which saves energy by balancing all/or part of the mass of the unloaded lifting platform

3.2
competent person
person, suitably trained and qualified by knowledge and practical experience, and provided with the necessary instructions to enable the required work to be carried out safely

3.3
down direction valve
electrically controlled valve in a hydraulic circuit for controlling the descent of the lifting platform

3.4
drive system
system that causes the lifting platform to move under power input

3.5
drive unit
unit, including the motor, that drives and stops the lifting platform