SLOVENSKI STANDARD
oSIST prEN 81-22:2018

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Varnostna pravila za konstruiranje in vgradnjo dvigal (liftov) - Dvigala za prevoz oseb in blaga - 22. del: Osebna in osebno-tovorna poševna dvigala

Safety rules for the construction and installation of lifts - Lifts for the transport of persons and goods - Part 22: Passenger and goods passenger lifts with inclined travel path

Sicherheitsregeln für die Konstruktion und den Einbau von Aufzügen - Aufzüge für den Personen- und Gütertransport - Teil 22: Personen- und Lastenaufzüge mit geneigter Fahrbahn

Règles de sécurité pour la construction et l'installation des élévateurs - Elévateurs pour le transport de personnes et d'objets - Partie 22 : Ascenseurs et ascenseurs de charge avec voie de déplacement inclinée

Ta slovenski standard je istoveten z: **prEN 81-22**

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91.140.90 Dvigala. Tekoče stopnice Lifts. Escalators

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EUROPEAN STANDARD

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English Version

Safety rules for the construction and installation of lifts - Lifts for the transport of persons and goods - Part 22: Passenger and goods passenger lifts with inclined travel path

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This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 10.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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European foreword

This document (prEN 81-22:2018) has been prepared by Technical Committee CEN/TC 10 “Lifts, escalators and moving walks”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document supersedes EN 81-22:2014.

This document is a revision of EN 81-22:2014 in order to align its Annex ZA to the new format and requirements as laid out in the EU Commission Standardization Request “M/549 C(2016) 5884 final”. During this revision no technical changes are made and the technical requirements of this document remain identical to EN 81-22:2014.

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.

This document is part of the EN 81 series of standards: *“Safety rules for the construction and installation of lifts”.*

Introduction

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

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.

The purpose of this standard is to define safety requirements for inclined lift in order to safeguard people and objects against risks of accidents during installation, operation, maintenance, inspection work and emergency operations of lifts.

Considerations

Consideration has been taken into account on various categories of lifts with inclined travel path to ascertain the related hazards and risks owing to the configuration of structures (civil engineering works), inclination and outside influences such as the following:

a) the large opening to the exterior;

b) the possibility to walk around inside the lift well;

c) the arrangement of the doors;

d) the horizontal component of deceleration in the event of stopping of the vehicle.

The prescriptions relating to the protection of workers and to the evacuation from the car are different:

e) if it is possible or not to walk in the well;

f) if the car roof is used or not as working station for the maintenance.

An Interpretation Committee has been established to clarify, if necessary, the spirit in which the clauses of the standard have been drafted and to specify the requirements appropriate to particular cases. Interpretation Requests can be sent to the National Standard Bodies which will contact the responsible Technical Committee CEN/TC 10 (see CEN/TR 81-10 [1] for information).

Principles

In drawing up this standard the following have been used.

This standard does not repeat all the general technical rules applicable to every electrical, mechanical, or building construction including the protection of building elements against fire.

It has, however, seemed necessary to establish certain requirements of good construction, either because they are peculiar to lift manufacture or because in the case of lift utilization the requirements may be more stringent than elsewhere.

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

Typical clauses affected by this are those defining minimum values for the height of the machine and pulley rooms and for their access doors dimensions.

When the weight, size and/or shape of components prevent them from being moved by hand, they are:

a) either fitted with attachments for lifting gear, or

b) designed so that they can be fitted with such attachments (e.g. by means of threaded holes), or

c) shaped in such a way that standard lifting gear can easily be attached.

As far as possible the standard sets out only the requirements that materials and equipment have to meet in the interests of safe operation of lifts.

Assumptions

The contents of this standard are based on the assumption that persons using inclined lifts are able to do so unaided.

It is assumed that negotiations have been made for each contract between the customer and the supplier/installer (see also Annex O) about:

a) intended use of the inclined lift;

b) environmental conditions;

c) civil engineering problems;

d) other aspects relating to the place of installation (e.g. high-voltage electric line, bridges, dangerous buildings, natural obstacle).

Possible risks have been considered of each component that may be incorporated in a complete lift installation. Rules have been drawn up accordingly.

Components are:

— designed in accordance with usual engineering practice and calculation codes, taking into account all failure modes;

— of sound mechanical and electrical construction;

— made of materials with adequate strength and of suitable quality;

— be free of defects.

Harmful materials, such as asbestos are not used.

Components are kept in good repair and working order, so that the required dimensions remain fulfilled despite wear.

Components will be selected and installed so that foreseeable environmental influences and special working conditions do not affect the safe operation of the lift.

Especially for the extreme temperatures which were agreed between the customer and the supplier, the choice of materials and components shall be made with particular attention that they shall keep their characteristics for impact strength for the steel, rigidity and function for plastics, functional for the electronic components, viscosity for oils, etc.

By design of the load bearing elements, a safe operation of the lift is ensured for loads ranging from 0 % to 125 % of the rated load.

The requirements of this European Standard regarding electrical safety devices are such that the possibility of a failure of an electric safety device (see 5.11.1.2.1.1 b)) complying with all the requirements of this European Standard need not to be taken into consideration.”.

Users have to be safeguarded against their own negligence and unwitting carelessness when using the lift in the intended way.

A user may, in certain cases, make one imprudent act. The possibility of two simultaneous acts of imprudence and/or the abuse of instructions for use is not considered.

If in the course of maintenance work a safety device, normally not accessible to the users, is deliberately neutralized, safe operation of the lift is no longer ensured, but compensatory measures will be taken to ensure users safety in conformity with maintenance instructions.

It is assumed that maintenance personnel is instructed and works according to the instructions.

Horizontal forces and/or energies to consider are indicated in the applicable clauses of the standard. Typically:

e) The static force that a person normally exerts is of the magnitude of 300 N.

f) The energies resulting from impact depend on the lift component where the impact can occur; if not otherwise specified the resulting force is assumed to be 1 000 N.

With the exception of the items listed below, a mechanical device built according to good practice and the requirements of the standard will not deteriorate to a point of creating hazard without the possibility of detection.

The following mechanical failures are considered:

— breakage of the suspension;

— uncontrolled slipping of the ropes on the traction sheave;

— breakage and slackening of all linkage by auxiliary ropes, chains and belts;

— failure of one of the mechanical components of the electromechanical brake which take part in the application of the braking action on the drum or disk;

— failure of a component associated with the main drive elements and the traction sheave;

— ropes leaving the pulleys and, in case of change of inclination, leaving the rollers;

— blockage of the rope movement;

— blockage or derailment of the vehicle.

The possibility of the safety gear not setting, should the vehicle free fall from the lowest landing, before the vehicle strikes the buffer(s) is considered acceptable.

When the speed of the vehicle is linked to the electrical frequency of the mains up to the moment of application of the mechanical brake, the speed is assumed not to exceed 115 % of the rated speed or a corresponding fractional speed.

Means of access are provided for the hoisting of heavy equipment.

To ensure the correct functioning of the equipment in the machinery space(s), i.e. taking into account the heat dissipated by the equipment, the ambient temperature in the machine room is assumed to be maintained between + 5 °C and + 40 °C.

Access ways to the working areas are adequately lit (see above Principles).