



SLOVENSKI STANDARD

SIST EN 1570-1:2024

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Varnostne zahteve za dvizne mize - 1. del: Dvizne mize za dvigovanje do dveh nivojev

Safety requirements for lifting tables - Part 1: Lifting tables serving up to two fixed landings

Sicherheitsanforderungen an Hubtische - Teil 1: Hubtische, die bis zu zwei feste Haltestellen anfahren

Prescriptions de sécurité des tables élévatrices - Partie 1 : Tables élévatrices desservant jusqu'à 2 niveaux définis

Ta slovenski standard je istoveten z: EN 1570-1:2024

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Safety requirements for lifting tables - Part 1: Lifting tables serving up to two fixed landing

Exigences de sécurité des tables élévatrices - Partie 1 :
Tables élévatrices desservant jusqu'à deux paliers
définis

Sicherheitsanforderungen an Hubtische - Teil 1:
Hubtische, die bis zu zwei feste Haltestellen anfahren

This European Standard was approved by CEN on 19 September 2022.

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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.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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EN 1570-1:2024 (E)**European foreword**

This document (EN 1570-1:2024) has been prepared by Technical Committee CEN/TC 98 “Lifting platforms”, 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of an identical text or by endorsement, at the latest by October 2024, and conflicting national standards shall be withdrawn at the latest by October 2024.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 1570-1:2011+A1:2014.

The revisions to the standard are based mainly on the following points, which are embedded throughout the document:

- a wholesale restructure of the document;
- the inclusion for lifting tables in non-industrial applications; Static Elevating Work Platforms and lifting tables used in Skillet lines or Autonomous Ground Vehicles;
- the ability to pass a fixed landing and to carry authorized persons when under operator control;
- the introduction of rated and structural loads;
- the replacement of EN 1570-1:2011+A1:2014, Table 3 – Lift installation safeguard requirements with new flow charts within Annex I – Guide to travel zone risks;
- where appropriate, risk of falling is now associated with the height of fall rather than the travel height of the machine;
- greater emphasis on protection of the public when the lifting tables are used in public accessible areas;
- the reintroduction of boom barriers and clarity on interlocking and locking requirements for removable guard-rails;
- locking of the lift table when at an upper fixed landing;
- the relaxation of overload monitoring limits due to the lack of appropriate state of the art equipment;
- restrictions on the use of pipe rupture protection devices in hydraulic systems;
- the introduction of rigid / pusher chains and the removal of pneumatic drives.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

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Introduction

This document was drafted as a design guidance manual to provide a means of achieving conformance to the essential safety requirements stipulated under Machinery Directive 2006/42/EC.

As lifting tables are used in a wide range of applications, it is equally necessary to perform individual risk assessments in accordance with EN ISO 12100:2010 for the actual operating conditions.

Products sold indirectly to end-users should be built to cover all the risks related to the use and all conditions foreseeable by the manufacturer, as described and detailed in the instruction manual.

Where the text gives an example of a safety measure for the purposes of greater clarity, this should not be considered as the only possible solution. Any other solution leading to the same risk reduction is permissible if an equivalent or increased level of safety is achieved.

While drafting this document, it was assumed that:

- the lifting tables are only operated by persons trained in the use of the equipment in accordance with the manufacturer's instructions, and that the working area is adequately lit;
- the lifting tables are installed or used on hard standing, even, appropriately prepared surfaces;
- where there are special requirements on low noise levels, such as for hospital applications and theatres, etc., the customer should specify these requirements and the manufacturer should then take all appropriate measures.

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, when machines have been designed and built according to the provisions of this type C standard.

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1 Scope

1.1 This document specifies the safety requirements for lifting tables with the following characteristics:

- serving no more than 2 fixed landings but able to pass a fixed landing and,
- having a vertical travel speed of no more than 0,15 m/s, unless safe by position and,
 - for raising or lowering goods (with or without operator(s) and/or authorized person(s)), or;
 - for raising or lowering operator(s) and/or authorized person(s) with or without goods, to positions where they can carry out work from a fixed or movable lifting table that is guided throughout its vertical travel only (see Annex H).

1.2 This document specifies the appropriate technical measures for eliminating and reducing the risks arising from the significant hazards listed in Annex B.

1.3 This document does not apply to the following equipment:

- lifting tables with a vertical travel speed exceeding 0,15 m/s, unless safe by position;
- lifting tables, serving more than 2 fixed landings of a construction, for lifting goods, with a vertical travel speed not exceeding 0,15 m/s (EN 1570-2:2016);
- lifting tables, serving more than 2 fixed landings of a construction, for lifting operators, with a vertical travel speed not exceeding 0,15 m/s;
- lifting tables carrying operators and installed in full enclosures with a vertical travel speed not exceeding 0,15 m/s;
- lifting tables used on ships;
- lifting tables designed for artists and stage set features during artistic performances (EN 17206:2020);
- power operated lifting platforms for persons with impaired mobility (EN 81-41:2010);
- mobile lifting tables for airport ground support equipment (EN 1915-2:2001+A1:2009 and EN 12312-1:2013);
- mobile elevating work platforms (EN 280-1:2022);
- static Group B elevating work platforms (EN 280-1:2022);
- vehicle servicing lifts (EN 1493:2022);
- mobile lifting tables used for firefighting (EN 1777:2010);
- mobile lifting tables with a horizontal travelling speed of more than 1,6 m/s;
- rail dependent storage and retrieval equipment (EN 528:2021+A1:2022);
- scissor lift pallet trucks (EN ISO 3691-5:2015, including EN ISO 3691-5:2015/AC:2016 and EN ISO 3691-5:2015/A1:2020);
- lifting tables suspended from a ceiling.

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1.4 This document does not consider the additional requirements for:

- electromagnetic compatibility;
- operation in severe conditions (e.g. extreme climates, freezer applications, strong magnetic fields);
- operation subject to special rules (e.g. potentially explosive atmospheres, mines);
- handling of loads, the nature of which could lead to dangerous situations (e.g. molten metal, acids, radiating materials, particularly brittle loads, loose loads (gravel, tubes));
- hazards occurring during construction, transportation, and disposal;
- equipment installed on the load platform or the replacing or maintaining of it;
- integration into broader systems or other machines, etc.;
- cable-less controls, i.e. wireless;
- lifting tables where the hydraulic pressure is derived directly from gas pressure;
- lifting tables powered by internal combustion engines.

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.

EN 280-1:2022, *Mobile elevating work platforms — Part 1: Design calculations — Stability criteria — Construction — Safety — Examinations and tests*

EN 1493:2022, *Vehicle lifts*

EN 12453:2017+A1:2021, *Industrial, commercial and garage doors and gates — Safety in use of power operated doors — Requirements and test methods*

EN 60204-1:2018, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2016, modified)*

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

EN 60529:1991,¹ *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)*

EN 60947-5-1:2017,² *Low-voltage switchgear and controlgear — Part 5-1: Control circuit devices and switching elements — Electromechanical control circuit devices (IEC 60947-5-1:2016)*

¹ As impacted by EN 60529:1991/AC:2006-12, EN 60529:1991/A1:2000, EN 60529:1991/A2:2013 and EN 60529:1991/A2:2013/AC:2019-02.

² As impacted by EN 60947-5-1:2017/AC:2020-05.

EN 60947-5-3:2013, *Low-voltage switchgear and controlgear — Part 5-3: Control circuit devices and switching elements — Requirements for proximity devices with defined behaviour under fault conditions (PDDB) (IEC 60947-5-3:2013)*

EN 61310-2:2008, *Safety of machinery — Indication, marking and actuation — Part 2: Requirements for marking (IEC 61310-2:2007)*

EN IEC 61496-1:2020, *Safety of machinery — Electro-sensitive protective equipment — Part 1: General requirements and tests (IEC 61496-1:2020)*

EN IEC 61496-2:2020, *Safety of machinery — Electro-sensitive protective equipment — Part 2: Particular requirements for equipment using active opto-electronic protective devices (AOPDs) (IEC 61496-2:2020)*

EN IEC 60947-5-2:2020,³ *Low-voltage switchgear and controlgear — Part 5-2: Control circuit devices and switching elements — Proximity switches*

EN ISO 4413:2010, *Hydraulic fluid power — General rules and safety requirements for systems and their components (ISO 4413:2010)*

EN ISO 11161:2007,⁴ *Safety of machinery — Integrated manufacturing systems — Basic requirements (ISO 11161:2007)*

EN ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction (ISO 12100:2010)*

EN ISO 13849-1:2023, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2023)*

EN ISO 13850:2015, *Safety of machinery — Emergency stop function — Principles for design (ISO 13850:2015)*

EN ISO 13856-2:2013, *Safety of machinery — Pressure-sensitive protective devices — Part 2: General principles for design and testing of pressure-sensitive edges and pressure-sensitive bars (ISO 13856-2:2013)*

EN ISO 13857:2019, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857:2019)*

EN ISO 14119:2013, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection (ISO 14119:2013)*

EN ISO 14120:2015, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards (ISO 14120:2015)*

EN ISO 14122-3:2016, *Safety of machinery — Permanent means of access to machinery — Part 3: Stairs, stepladders and guard-rails (ISO 14122-3:2016)*

ISO 606:2015, *Short-pitch transmission precision roller and bush chains, attachments and associated chain sprockets*

ISO 2408:2017, *Steel wire ropes — Requirements*

³ As impacted by EN IEC 60947-5-2:2020/A11:2022.

⁴ As impacted by EN ISO 11161:2007/A1:2010.

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ISO 4301-1:2016, *Cranes — Classification — Part 1: General*

ISO 4347:2015, *Leaf chains, clevises and sheaves — Dimensions, measuring forces, tensile strengths and dynamic strengths*

ISO 11228-1:2021, *Ergonomics — Manual handling — Part 1: Lifting, lowering and carrying*

ISO 11228-2:2007, *Ergonomics — Manual handling — Part 2: Pushing and pulling*

ISO 16625:2013, *Cranes and hoists — Selection of wire ropes, drums and sheaves*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100:2010 and the following apply.

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

— ISO Online browsing platform: available at <https://www.iso.org/obp>

— IEC Electropedia: available at <https://www.electropedia.org/>

3.1**lifting table**

lifting device with a load supporting platform rigidly guided throughout its travel

Note 1 to entry: A scissor lift or mast lift for example.

3.2**fixed lifting table**

lifting table where the place of installation is not intended to be changed, according to the manufacturer's instructions

3.3**movable lifting table**

lifting table installed so that the place of installation may be readily changed without integrated devices

Note 1 to entry: By use of a crane, forklift or similar for example.

3.4**mobile lifting table**

lifting table which is mobile by one or more integrated devices

Note 1 to entry: By use of wheels or air cushions for example.

3.5**guided mobile lifting table**

lifting table which runs on a pre-set route

Note 1 to entry: Running on tracks or in rails for example.

3.6**work platform**

platform which can be moved under load to the required working position and from which erection, repair, inspection, or similar work can be carried out

3.7**maintenance support**

device that can be set up in such a way that maintenance and repair work below the platform can be carried out safely

3.8**self-propelled lifting table**

lifting table, other than vehicle mounted, which is capable of horizontal movement under its own power

3.9**operator**

person who is trained and authorised/permitted by the duty holder, to operate the lifting table, according to the manufacturer's instructions

Note 1 to entry: The machine owner is considered as the duty holder.

3.10**authorised person**

person whose presence in the area is authorised/permitted by the operator and whose safety is the responsibility of the operator

3.11**fixed landing**

permanent level of the construction for loading and unloading the lifting table

3.12**variable landing**

non-permanent level for loading and unloading of the lifting table

Note 1 to entry: Vehicle serving for example.

3.13**platform**

part of the lifting table (including extensions) designed to accommodate the working load and/or persons; fork arms are considered as a load platform for goods only

3.14**rated load**

load that consists of goods, persons, tools, and material acting vertically on the work platform and that the manufacturer has stated the machine is capable of lifting/lowering when used in accordance with the instruction manual

3.15**structural load**

load, excluding rated load, comprising of any equipment that is fixed on the platform

Note 1 to entry: Structural load may include guard-rails, gates, roller conveyors etc.

Note 2 to entry: Structural load shall be considered as part of the lifting table self-weight.

3.16**guard**

part of the machine or the surrounding structure specifically used to provide protection by means of a physical barrier

EN 1570-1:2024 (E)**3.17****maximum working pressure**

highest pressure in the hydraulic system at which it is intended to operate under normal working conditions with rated load and, if any, structural load

3.18**travel zone**

space through which the lifting mechanism and load, platform, and any attachment to it moves

3.19**non-public area**

area to which access is restricted only to persons who are authorised to be in that area, and not accessible to the public

3.20**public area**

space open to persons without specific training, instruction or awareness including children

3.21**vertical travel speed**

average lifting and lowering speed of the platform when measured throughout its normal travel range

3.22**screen**

permanent protection from access to the hazard for the whole body, also called distance guards in EN ISO 14120:2015

3.23**guard-rail**

device for protection against accidental fall or accidental access to a hazardous area, with which stairs, step ladders, landings or platforms and walkways (level surface used for moving from one point to another) may be equipped

3.24**removable guard-rail**

guard-rail designed to be removable without the use of a tool

Note 1 to entry: Bolted guard-rails are not considered removable.

3.25**enclosure**

permanent protection where the whole of the travel zone is protected with rigid guards to make the lifting table inaccessible whilst in operation, i.e. safe by position

3.26**automatically controlled lifting table**

lifting table whose operating sequence is determined by a control program, which can be semi-automatic when operations are initiated by an operator, or fully automatic when no operator intervention is required

3.27**gate**

opening part within a guard-rail, enclosure, or screen, to give access from a landing or a platform