SLOVENSKI STANDARD
SIST EN 16719:2018

01-julij-2018

Transportne ploščadi

Transport platforms

Transportbühne

Plateformes de transport

Ta slovenski standard je istoveten z: **EN 16719:2018**

ICS:

91.220	Gradbena oprema	Construction equipment

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Transport platforms

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Transportbühnen

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 16719:2018) 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of an identical text or by endorsement, at the latest by August 2018, and conflicting national standards shall be withdrawn at the latest by August 2018.

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For relationship with EU Directive 2006/42/EC, see informative Annex ZA, which is an integral part of this document.

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Introduction

This European Standard is one of a series of standards produced by CEN/TC 10/SC 1 “Building hoists” as part of the CEN programme of work to produce machinery safety standards. The standard is a Type C standard relating to safety for transport platforms.

The extent to which hazards are covered is indicated in the scope of this European Standard. In addition, machinery shall comply as appropriate with EN ISO 12100:2010 for hazards which are not covered by this European 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 machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this European Standard.

1 Scope

1.1 Temporarily-installed, guided powered platforms with rack and pinion drive, which have an open platform and hold-to-run controls operated by authorized, trained operators on the platform.

Used for transporting authorized passengers and materials vertically (or along the path 15° maximum of the vertical), at limited speed, with a minimum safety offset distance and serving fixed levels on a building or structure for construction related activities including renovation and maintenance.

This European Standard does not include

a) hydraulic drives for transport platforms;

b) wire rope drives for transport platforms;

c) chain drives for transport platforms;

d) use as a Mast Climbing Work Platform (see EN 1495);

e) use as a Goods Hoist (see EN 12158-1);

f) use as a Passenger/Goods Hoist (see EN 12159).

1.2 This European Standard identifies hazards as listed in Clause 4 which arise during the various phases in the life of such equipment and describes methods for the elimination or reduction of these hazards when used as intended by the manufacturer.

1.3 This European Standard does not specify the additional requirements for

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

b) lightning protection;

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

d) electromagnetic compatibility (emission, immunity);

e) handling of loads the nature of which could lead to dangerous situations (e.g. molten metal, acids/bases;

f) radiating materials, fragile loads);

g) the use of combustion engines;

h) the use of remote controls;

i) hazards occurring during manufacture;

j) hazards occurring as a result of mobility;

k) hazards occurring as a result of being erected over a public road;

l) earthquakes;

m) noise.

1.4 This European Standard is not applicable to

a) builders hoists for materials (see EN 12158-1);

b) builders hoists for persons and materials (see EN 12159);

c) lifts (see EN 81-3 and EN 81-20);

d) inclined hoists (see EN 12158-2);

e) inclined lifts (see EN 81-22);

f) lifting tables (see EN 1570-1);

g) mast climbing work platforms (see EN 1495);

h) work cages suspended from lifting appliances;

i) work platforms carried on the forks of fork trucks;

j) work platforms;

k) funiculars;

l) lifts specially designed for military purposes;

m) mine lifts;

n) theatre elevators;

o) special purpose lifts.

1.5 This European Standard deals with the transport platform installation. It includes the base frame and base enclosure but excludes the design of any concrete, hard core, timber or other foundation arrangement. It includes the design of mast ties but excludes the design of anchorage bolts to the supporting structure. It includes the landing gates and their frames but excludes the design of any anchorage fixing bolts to the supporting structure.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 81-20:2014, *Safety rules for the construction and installation of lifts - Lifts for the transport of persons and goods - Part 20: Passenger and goods passenger lifts*

EN 349:1993+A1:2008, *Safety of machinery - Minimum gaps to avoid crushing of parts of the human body*

EN 1037:1995+A1:2008, *Safety of machinery - Prevention of unexpected start-up*

EN 60204-1:2006, *Safety of machinery - Electrical equipment of machines - Part 1: General requirements*

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

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

EN 60947-5-1:2004, *Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices*

EN ISO 4871:2009, *Acoustics - Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)*

EN ISO 7731:2008, *Ergonomics - Danger signals for public and work areas - Auditory danger signals (ISO 7731:2003)*

EN ISO 11688-1:2009, *Acoustics - Recommended practice for the design of low-noise machinery and equipment - Part 1: Planning (ISO/TR 11688-1:1995)*

EN ISO 11688-2:2000, *Acoustics. Recommended practice for the design of low-noise machinery and equipment. Part 2: Introduction to the physics of low-noise design (ISO/TR 11688-2:1998)*

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

EN ISO 13849-1:2015, *Safety of machinery- Safety-related parts of control systems - Part 1: General principles for design (ISO 13849-1:2015)*

EN ISO 13849-2:2012, *Safety of machinery - Safety-related parts of control systems - Part 2: Validation (ISO 13849-2:2012)*

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

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

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

ISO 4302:2016, *Cranes — Wind load assessment*

ISO 6336-1:2006, *Calculation of load capacity of spur and helical gears — Part 1: Basic principles, introduction and general influence factors*

ISO 6336-2:2006, *Calculation of load capacity of spur and helical gears — Part 2: Calculation of surface durability (pitting)*

ISO 6336-3:2006, *Calculation of load capacity of spur and helical gears — Part 3: Calculation of tooth bending strength*

ISO 6336-5:2016, *Calculation of load capacity of spur and helical gears — Part 5: Strength and quality of materials*

3 Terms and definitions

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

3.1
authorised trained operator
person who is authorised by their employer to operate the transport platform and is suitably trained, qualified by knowledge and practical experience, and provided with the necessary instructions to enable the machine to be operated safely, taking into account any residual risks

3.2
authorised passenger
person who is authorised by their employer to travel on the transport platform, undertakes to follow the instructions of the transport platform operator and is provided with the necessary safety information

3.3
competent person
authorised person, suitably trained, qualified by knowledge and practical experience, and provided with the necessary instructions to enable the required procedures to be carried out

3.4
rated load
maximum load (persons and materials) which the transport platform has been designed to carry in service

3.5
rated speed
speed of the platform for which the equipment has been designed

3.6
positive drive
drive using means other than friction

3.7
rack and pinion transport platform
transport platform which uses a toothed rack and pinion as the load suspension system

3.8
base frame
lowest framework of the transport platform, upon which all other components are mounted

3.9
mast
structure that supports and guides the platform

3.10
mast section
indivisible piece of mast, between two adjacent mast joints

3.11
mast tie
connection system between the mast and any building structure, providing lateral support for the mast

3.12
hoistway
total space which is travelled by the platform and its load, including any offset and clearance

3.13
platform
load and persons carrying device including the floor, sides and entrances

3.14
stopping distance
distance the platform moves from the moment, when the control or safety circuit is broken until the platform has come to a full stop

3.15
overspeed safety device
mechanical device for stopping and maintaining stationary the platform in the event of overspeed in down direction

3.16
landing
level in a building or construction intended for loading and unloading the platform

3.17
safety distance

minimum acceptable distance between any moving part of a hoist and any point of access

Note 1 to entry: See also 3.22.

3.18
guard rail
fixed equipment, other than gates, which is used to prevent people from falling or from reaching hazardous areas

3.19
normal operation
usual operating conditions for the equipment when in use for carrying loads and persons but excluding routine maintenance, erection, dismantling etc

3.20
in service
condition during use of the hoist when the platform is in any position, laden or unladen, moving or stationary

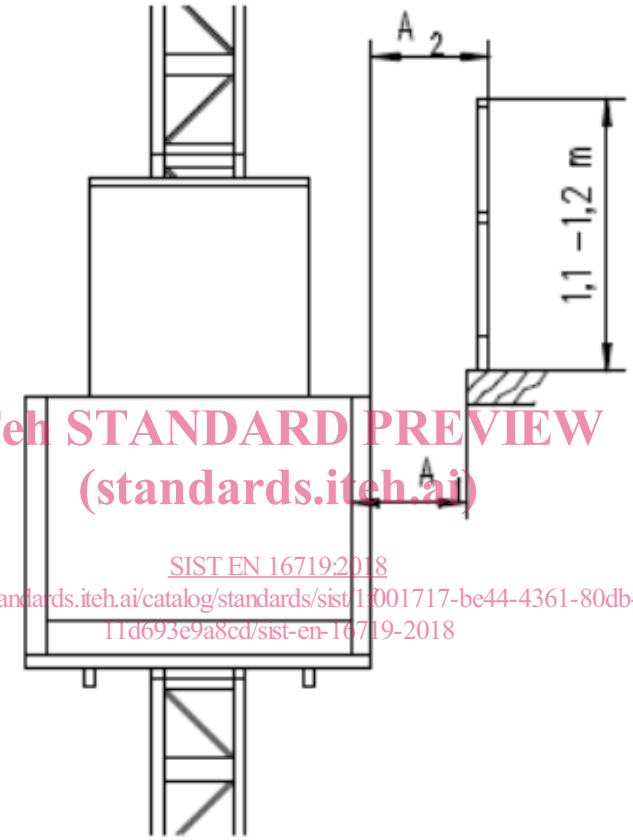
3.21
out of service
installed condition when the platform is positioned such that it is provided with the most shelter from the wind

Note 1 to entry: This is normally, but not necessarily, ground level. The platform is unladen.

3.22
offset
minimum safety distance between the inner edge of the platform and the nearest point on the structure which the platform travels past (A_1 in Figure 1 below)

and

minimum safety distance between the inner edge of the landing gate or protection and the nearest point on the platform which travels past the landing (A_2 in Figure 1 below)



Key

A_1 ≥ 500mm

A_2 ≥ 500mm

Figure 1 — Offset

4 List of hazards

The list of hazards according to the following tables is based on EN ISO 12100:2010.

Table 1 shows the hazards which have been identified and where the corresponding requirements have been formulated in this European Standard, in order to limit the risk or reduce these hazards in each situation.

A hazard which is not applicable or is not significant and for which, therefore, no requirements are formulated, is shown in the relevant clauses column as n.a. (not applicable).

Table 1 — Hazards associated with transport platforms

Significant hazards		Relevant clauses in this European Standard
1	**Mechanical hazards**	
1.1	Crushing	5.5.2, 5.5.3, 5.5.6, 5.7.2, 7.1.2.8, 7.1.2.9
1.2	Shearing	5.5, 5.6.1.2, 5.7.2, 7.1.2.8, 7.1.2.9
1.3	Cutting or severing	5.5, 5.6.1.2, 5.7.2, 7.1.2.8, 7.1.2.9
1.4	Entanglement	5.7.2
1.5	Drawing-in or trapping	5.5.2, 5.5.3, 5.6.1.2, 5.7.2, 7.1.2.8
1.6	Impact	5.4.3, 5.6.1.3, 5.6.1.4, 5.6.2, 7.1.2.8, 7.1.2.9
1.7	Stabbing or puncture	5.6.1.3
1.8	Friction or/abrasion	5.5.2, 5.5.3, 7.1.2
1.9	High pressure fluid injection	n.a.
1.10	Ejection of parts	5.6.1.2
1.11	Loss of stability	5.2, 5.3, 5.4.1, 5.4.2, 5.6.3, 7.1.2.8.4
1.12	Working environment (Slip, trip and fall)	5.5, 5.6.1, 5.6.2, 7.1.2.8.4
2	**Electrical hazards**	
2.1	Electrical contact (direct or indirect)	5.8, 7.1.2.8.4
2.2	Electrostatic phenomena	n.a.
2.3	Thermal radiation	n.a.
2.4	Phenomena such as projection of molten particles or chemical effects from short-circuits or overloads	n.a.
3	**Thermal hazards**	
3.1	Burns and scalds by a possible contact of persons by flames or explosions and also by the radiation of heat sources	5.8.2.7
3.2	Health-damaging effects by hot or cold work environment	n.a.
4	**Hazards generated by noise**	
4.1	Hearing losses (deafness), other physiological disorders (e.g. loss of balance, loss of awareness etc.)	5.11, 7.1.2.3

Significant hazards		Relevant clauses in this European Standard
4.2	Interference with speech communication, acoustic signals etc.	5.11, 7.1.2.3
5	**Hazards generated by vibration**	
5.1	Hazards generated by vibration	7.1.2.3
6	**Hazards generated by radiation**	
6.1	Electrical arcs	n.a.
6.2	Lasers	n.a.
6.3	Ionising radiation sources	n.a
6.4	Machine making use of high frequency electromagnetic fields	n.a.
7	**Hazards generated by materials and substances processed, used or exhausted by machinery for example:**	
7.1	Hazards resulting from contact with or inhalation of harmful fluids, gases, mists, dusts and fumes	n.a.
7.2	Fire or explosion hazard	n.a.
7.3	Biological and microbiological (viral or bacterial) hazards	n.a.
8	**Hazards generated by neglecting ergonomic principles in machine design (mismatch of machinery with human characteristics and abilities) caused for example by:**	
8.1	Unhealthy postures or excessive efforts	5.1, 5.5.3.2.6, 7.1.2.8.4
8.2	Inadequate consideration of human hand-arm or foot-leg anatomy	5.5, 5.7.2, 7.1.2.8
8.3	Neglected use of personal protection equipment	n.a.
8.4	Visibility and inadequate area lighting	7.1.2.8.4
8.5	Mental overload or underload, stress, etc.	5.9
8.6	Human error	5.6.3, 5.9, 7.1.2.8, 7.1.2.9, 7.2, 7.3
9	**Hazards associated with the environment in which the machine is used**	
9.1	Dust and fog	5.8.3
9.2	Lightning	Not dealt with, see 1.3
9.3	Precipitation and Moisture	5.8.3