



**SLOVENSKI STANDARD**  
**oSIST prEN 17206-2:2022**

**01-oktober-2022**

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**Razvedrilna tehnologija - Stroji za odre in druge prireditvene prostore - 2. del:  
Varnostne zahteve za stojala in ogrodna dvigala stojal**

Entertainment technology - Machinery for stages and other production areas - Part 2:  
Safety requirements for stands and truss lifts of stands

Veranstaltungstechnik - Maschinen für Bühnen und andere Produktionsbereiche - Teil 2:  
Sicherheitstechnische Anforderungen an Stative und Traversenlifte

Technologies du spectacle - Machinerie pour scènes et autres zones de production -  
Partie 2 : Exigences relatives à la sécurité des pieds de levage et des mâts de levage

**Ta slovenski standard je istoveten z: prEN 17206-2**

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**ICS:**

97.200.10	Gledališka, odrska in studijska oprema ter delovne postaje	Theatre, stage and studio equipment
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**en,fr,de**



EUROPEAN STANDARD  
NORME EUROPÉENNE  
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**DRAFT**  
**prEN 17206-2**

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English Version

## Entertainment technology - Machinery for stages and other production areas - Part 2: Safety requirements for stands and truss lifts of stands

Technologies du spectacle - Machinerie pour scènes et autres zones de production - Partie 2 : Exigences relatives à la sécurité des pieds de levage et des mâts de levage

Veranstaltungstechnik - Maschinen für Bühnen und andere Produktionsbereiche - Teil 2: Sicherheitstechnische Anforderungen an Stative und Traversenlifte

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 433.

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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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## European foreword

This document has been prepared by Technical Committee CEN/TC 433 “Entertainment Technology – Machinery, equipment and installations”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document is intended to be used in conjunction with EN 17206:2020/AC:2021.

The EN 17206 series of standards consists of the following parts under the general title *Entertainment technology — Machinery for stages and other production areas*:

- EN 17206, *Entertainment technology — Machinery for stages and other production areas — Safety requirements and inspections*;
- *Part 2: Safety requirements for stands and truss lifts of stands* (this document).

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[oSIST prEN 17206-2:2022](https://standards.iteh.ai/catalog/standards/sist/d1df3431-5d84-4a76-933e-3a972ace1b4d/osist-pren-17206-2-2022)

<https://standards.iteh.ai/catalog/standards/sist/d1df3431-5d84-4a76-933e-3a972ace1b4d/osist-pren-17206-2-2022>

**prEN 17206-2:2022 (E)****1 Scope**

This document specifies safety requirements within the meaning of Directive 42/2006/EC, “Machinery Directive”.

The deviations from EN 17206 specified in this part are based on the particular operating conditions for stands and cannot be applied to other machinery installations.

This document applies to manually operated and/or power-driven stands with an Entertainment Load Limit [ELL] of more than 3 kg.

NOTE 1: The ELL is the maximum load that an item of lifting equipment is designed to raise, lower or sustain.

This document applies to stands which are used in places of assembly and in staging and production facilities for events and theatrical productions.

Stands within the scope of this document are used for the purposes of lifting, lowering and holding loads (e.g. scenic elements, trusses, lighting and audiovisual equipment). It is also possible for several stands to carry a common load.

This document does not cover installations that are used for the transportation of persons or for the movement of loads above people’s heads.

This document only covers installations with people under the load when the installations are at rest.

NOTE 2: During setup, the operator can, for operational reasons, be required to stand under the moving load for short periods of time.

This document also applies to installations with new technologies or customized designs that are not expressly named here but are being used in identical modes of operation.

This document does not apply to:

- stands with a Load Limit  $\leq 3$  kg;
- camera stands;
- wooden stands.

This document also specifies the information to be communicated between manufacturers and users, and the details that are to be provided with regard to the intended use of the machinery installations.

The significant hazards dealt with in this document are identified in Clause 4.

**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 17206:2020/AC:2021, *Entertainment technology - Machinery for stages and other production areas - Safety requirements and inspections*

EN ISO 13854, *Safety of machinery - Minimum gaps to avoid crushing of parts of the human body (ISO 13854)*

EN 1492-1, *Textile slings - Safety - Part 1: Flat woven webbing slings made of man-made fibres for general purpose use*

EN 10204, *Metallic products - Types of inspection documents*

EN 10151, *Stainless steel strip for springs - Technical delivery conditions*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 17206 and the following apply.

ISO and IEC maintain terminological 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 General terms and conditions

##### 3.1.1

##### **stand**

floor standing, height-adjustable, telescopic device used to carry loads in entertainment technology

Note 1 to entry: This definition includes commercially available devices designated as telescopic lifts, truss lifts for stands, fork lifts, heavy-duty lifts, and similar.

##### 3.1.2

##### **foot**

part of a stand that transmits the load to the area on which it stands

##### 3.1.3

##### **levelling device**

structural element used to level out slopes, uneven terrain, or steps

Note 1 to entry: This may be an object such as an adjustable tripod leg.

##### 3.1.4

##### **system load**

load-bearing capacity

maximum load that may be carried under normal operating conditions

Note 1 to entry: The safe working load is equal to the system load minus the self-weight of the load-carrying device used.

##### 3.1.5

##### **load-bearing equipment of the stand**

structural element that carries the load and self-weight of the extendable parts of the stand and that is permanently connected to the stand

##### 3.1.6

##### **drive mechanism of the stand**

element that is used for the lifting and lowering motions and that acts on the load-bearing equipment

Note 1 to entry: The drive mechanism is also used for retaining the loads.

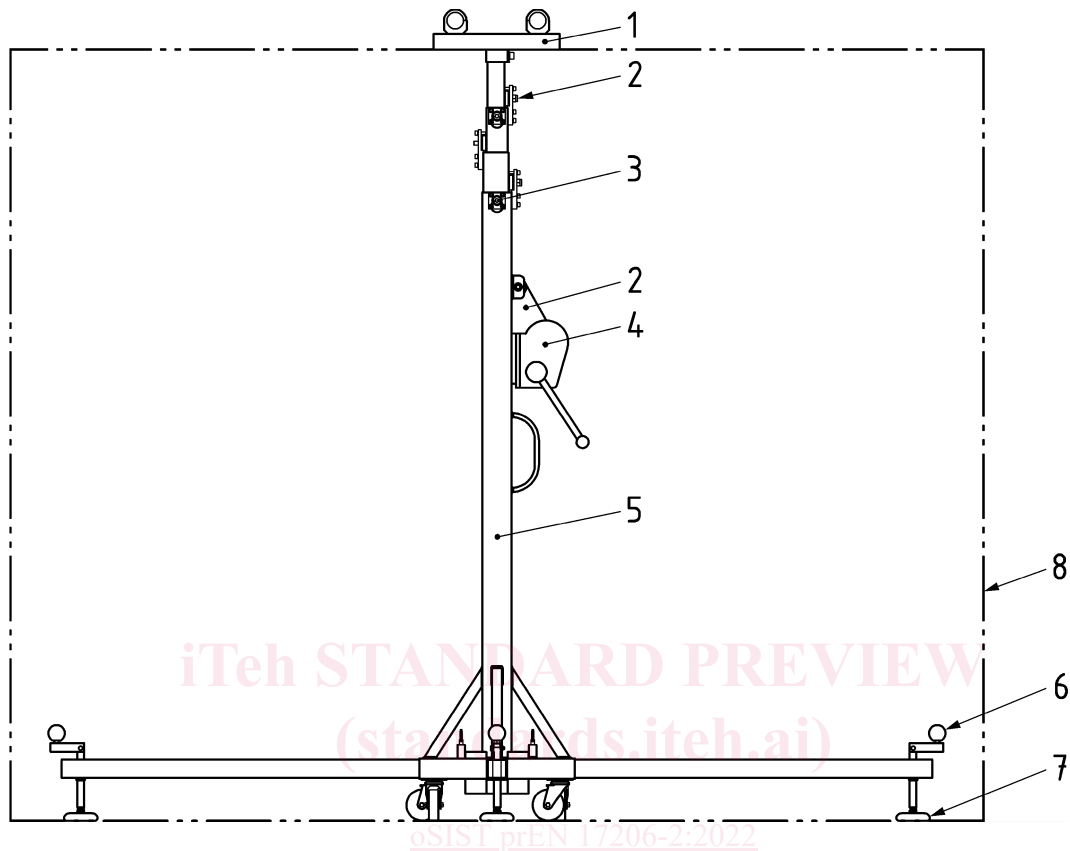
##### 3.1.7

##### **manually extendable mast segment**

telescopic mast segment of a stand that is moved by direct manual force

### 3.2 Example depiction of a stand

Figure 1 illustrates the terms defined in 3.1 with the example of a stand.



#### Key

- 1 load-carrying device, e.g. truss suspension
- 2 load-bearing equipment, e.g. wire rope, chain, toothed rack
- 3 load securing device or load holding device, e.g. locking bars, brakes
- 4 drive mechanism, e.g. rope or sling winch, rack-and-pinion drive
- 5 mast segments, e.g. telescopic tubing, rail packages
- 6 levelling device, e.g. jack
- 7 foot
- 8 system boundary

**Figure 1 — Example depiction of a stand**

## 4 Hazards

See EN 17206.

Examples of specific hazards relating to stands and their use are listed in Annex A.

Hazards largely result from the respective design and mode of operation, in particular from:

- incorrect handling and operation;
- insufficient stability;
- concurrent motion of loads using more than one stand, particularly involving differences in speed and uneven load distribution;



- hazard zones;
- transportation.

## 5 Design requirements

### 5.1 General

Unless otherwise specified in this document, the requirements given in EN 17206 apply.

Computational verification of all load-bearing structural elements shall be provided.

Stands shall be constructed so that they can safely withstand stresses resulting from transportation and handling. They shall be equipped with transportation aids that are suitable and adequate for their self-weight, such as handles and/or castors.

Handles and attachment points shall be ergonomically designed and dimensioned so as to withstand the expected loads.

### 5.2 Load assumptions

Load assumptions shall be calculated so as to take the expected stresses into account. This calculation shall also take into consideration any horizontal load that can occur as a result of speed differences when a common load is concurrently moved by several stands.

The load assumptions for outdoor use shall be calculated based on possible wind loads.

Where eccentric loading is expected to occur, the resulting stresses shall be taken into account and the load carrying devices shall be marked accordingly.

NOTE This is regularly the case when using a material lift with forks, as bending stresses occur in the mast segments.

### 5.3 Stability

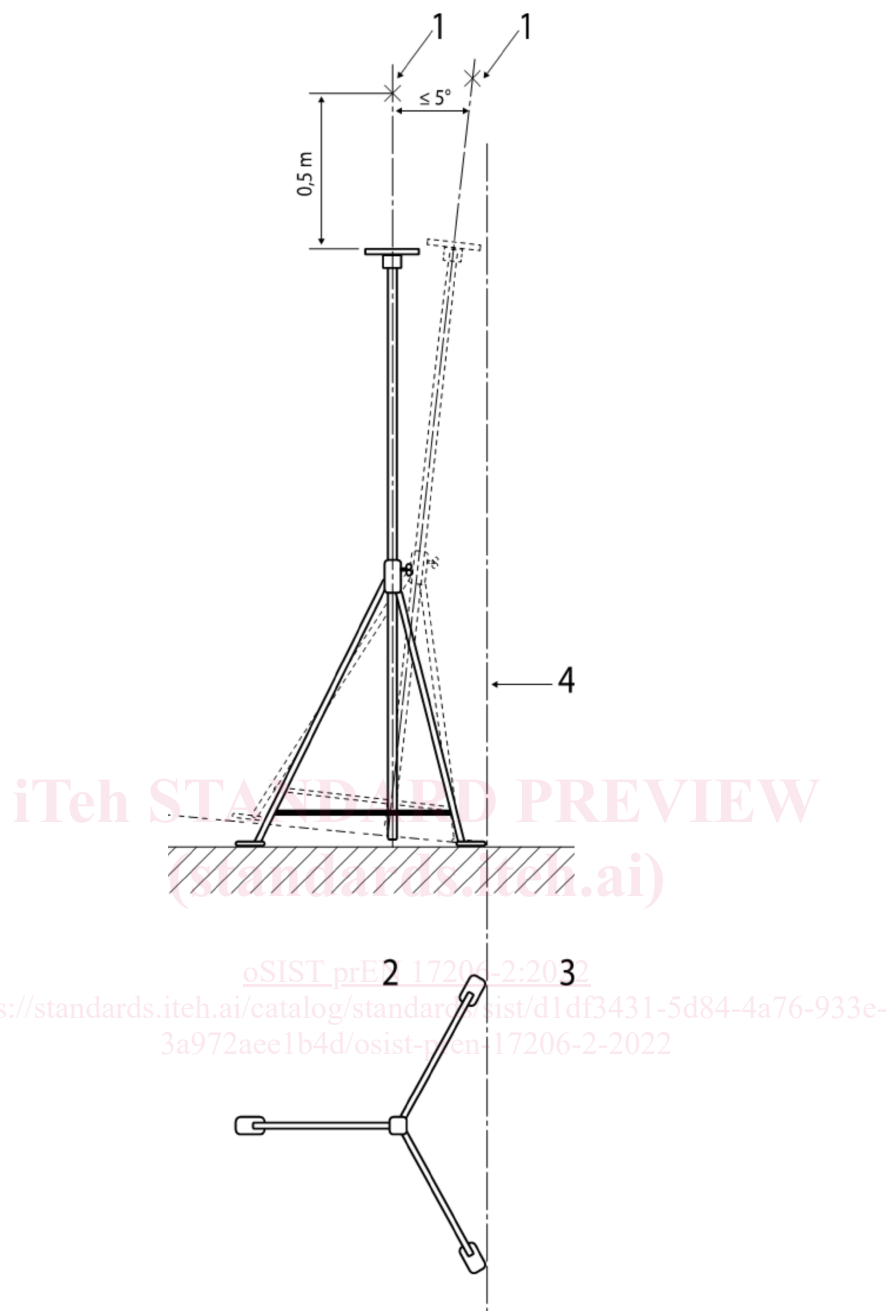
The stability of the stand as used in the manner intended shall be verified.

The stand is deemed to be stable if it does not tip over when fully extended in its least stable position, with a horizontal load equal to 1/20 of the ELL acting at its highest physical point (and in addition to the ELL).

NOTE The verification of stability includes an analysis of the strength of all components.

The stability of stands with an ELL of up to 60 kg may be verified by testing on a slope. The stand is deemed to be stable if it does not tip over when fully extended in its least stable position with the system load acting 0,5 m above its highest point at an inclination of 5° against the vertical.

Figure 2 shows an example test set-up.

**Key**

- 1 assumed centre of gravity
- 2 stable position area (stand remains standing)
- 3 unstable position area (stand tips over)
- 4 tipping line

**Figure 2 — Example depiction of a stand and its stability specifics**

The stand shall be provided with devices allowing it to be set up vertically even on uneven ground. Such devices may be omitted if the stand does not tip over when fully extended at an inclination of 5° in its least stable position with the ELL acting on the topmost point.

The feet of the stand shall be designed so as to enable the stand to be safely positioned.