SLOVENSKI STANDARD
SIST EN 13200-5:2006

01-december-2006

Prostori za gledalce – 5. del: Teleskopske tribune

Spectator facilities - Part 5: Telescopic stands

Zuschaueranlagen - Teil 5: Ausfahrbare (ausziehbare) Tribünen

Installations pour spectateurs - Partie 5: Tribunes télescopiques

Ta slovenski standard je istoveten z: **EN 13200-5:2006**

ICS:

91.040.10	Javne stavbe	Public buildings
97.200.10	Gledališka, odrska in studijska oprema ter delovne postaje	Theatre, stage and studio equipment
97.220.10	Športni objekti	Sports facilities

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EUROPEAN STANDARD

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English Version

Spectator facilities - Part 5: Telescopic stands

Installations pour spectateurs - Partie 5: Tribunes télescopiques

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This European Standard was approved by CEN on 12 July 2006.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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Foreword

This document (EN 13200-5:2006) has been prepared by Technical Committee CEN/TC 315 “Spectator facilities”, the secretariat of which is held by UNI.

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of an identical text or by endorsement, at the latest by February 2007, and conflicting national standards shall be withdrawn at the latest by February 2007.

The European Standard with the general title "Spectator facilities" is divided into six parts:

EN 13200-1:2003 Spectator facilities – Part 1: Layout criteria for spectator viewing area – Specification

CEN/TR 13200-2 Spectator facilities – Layout criteria of service area – Part 2: Characteristics and national situations

EN 13200-3 Spectator facilities – Part 3: Separating elements – Requirements

prEN 13200-4 Spectator facilities – Part 4: Seats – Product characteristics

EN 13200-5 Spectator facilities – Part 5: Telescopic stands

EN 13200-6 Spectator facilities – Part 6: Demountable (temporary) stands

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, 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.

Introduction

This European Standard has been prepared in order to specify the general design criteria for spectator facilities (permanent, movable, demountable and telescopic), with the purpose of enabling their functionality.

Within this standard, minimum and recommended values for dimensions are occasionally presented. It should be recognised that these values are to be considered as values that, in part, recognise different national requirements as a basic provision.

Attention is drawn to the fact that in certain countries additional/different requirements may be applicable due to existing national regulations or the equivalent.

1 Scope

This European standard specifies product characteristics for telescopic stands at permanent or temporary entertainment venues including sports stadiums, sport halls and indoor and outdoor facilities. Stands in fairgrounds and amusement parks are excluded from this standard (see EN 13814).

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 1991-1-1, *Eurocode 1: Actions on structures - Part 1-1: General actions - Densities, self-weight, imposed loads for buildings*

EN 12727, *Furniture - Ranked seating - Test methods and requirements for strength and durability*

EN 13200-1, *Spectator facilities - Part 1: Layout criteria for spectator viewing area - Specification*

prEN 13200-4, *Spectator facilities – Part 4: Seats – Product Characteristics*

3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply.

3.1
chair (seat) spacing
lateral distance between the centres of adjacent chairs

3.2
client
person or organisation that requires a construction to be provided

3.3
dead load
load of a constant magnitude and position that acts permanently including self weight

3.4
designer
qualified person who designs the telescopic stand

3.5
design documentation
documents provided by the designer of telescopic seating that ensure that the basis of design may be clearly understood and from which all design criteria can be verified

3.6
event organiser
individuals or company managing the organisation of the event

3.7
guard rail
safety barrier fitted to the sides, rear or front of a grandstand or within the seating area in order to protect users from falling

3.8
half step
intermediate step or steps on an aisle or gangway, required when the row rise between seating platforms exceeds the allowable dimension

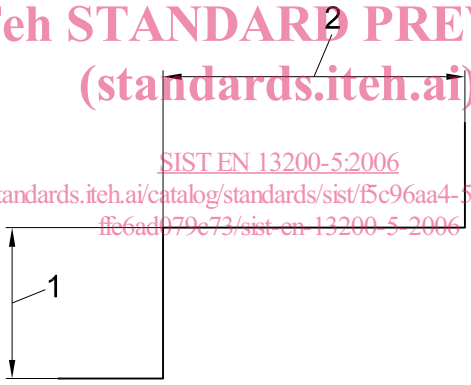
3.9
handrail
component designed to protect and assist the passage of users of the grandstand

3.10
imposed load
any load assumed to be produced by the intended occupancy, but excluding wind loads

3.11
load factor
factor by which the characteristic load is multiplied for design

3.12
manufacturer
supplier of the telescopic stands

3.13
riser
vertical component between one row and another row or the landing above or below it (see Figure 1)



Key

1 riser

2 row depth

Figure 1 — Riser

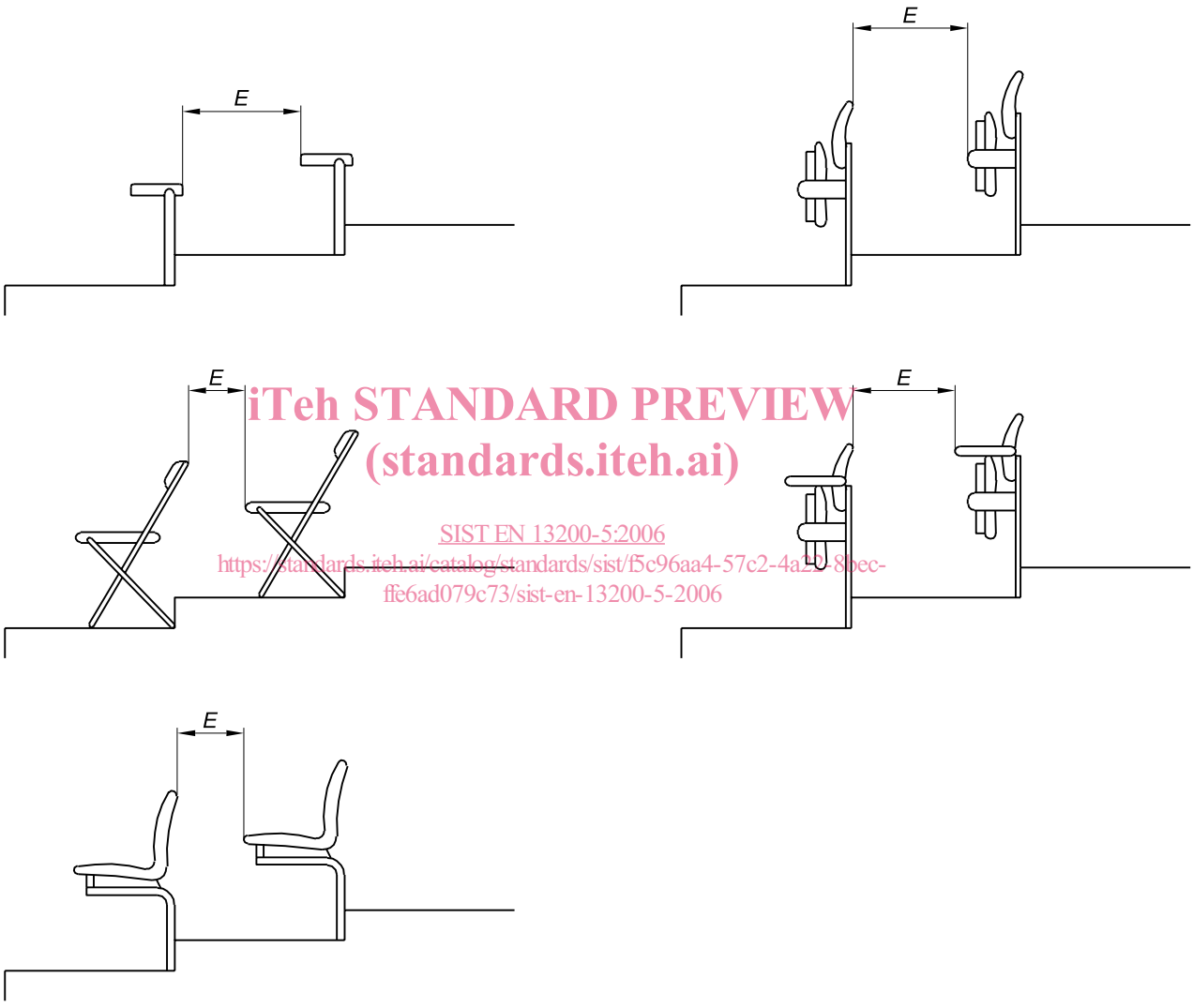
3.14
risk assessment
process by which the hazards associated with a given activity are identified

3.15
row depth
horizontal distance between successive risers (see Figure 1)

3.16
row rise
vertical distance between successive levels of seating or standing

3.17
seating unit
unit of telescopic seating within a seating block, comprising one set of an independent under-structure

3.18
seat-way
clearway
clear space measured at right angles between perpendiculars as shown in the following sketches. In all the following cases the minimum value of the seat-way 'E' is 350 mm and the recommended minimum value is 400 mm (see Figure 2)



Key

E Clearway

Figure 2 – Seat-way

3.19
stair
construction that comprises a succession of horizontal stages (steps or landings) that make it possible to pass on foot from one level to another

3.20
telescopic stand
stand constructed from standardised components or frames that opens and closes on wheels, castors or air film, converting a flat floor area into a tiered, spectator area

3.21
tread
horizontal component of a step

3.22
UDL
Uniformly Distributed Load

3.23
vomitory
access route built into the gradient of a stand which directly links spectator accommodation with routes for ingress, egress or emergency evacuation

3.24
wind load
load due to wind pressure

4 Materials requirements

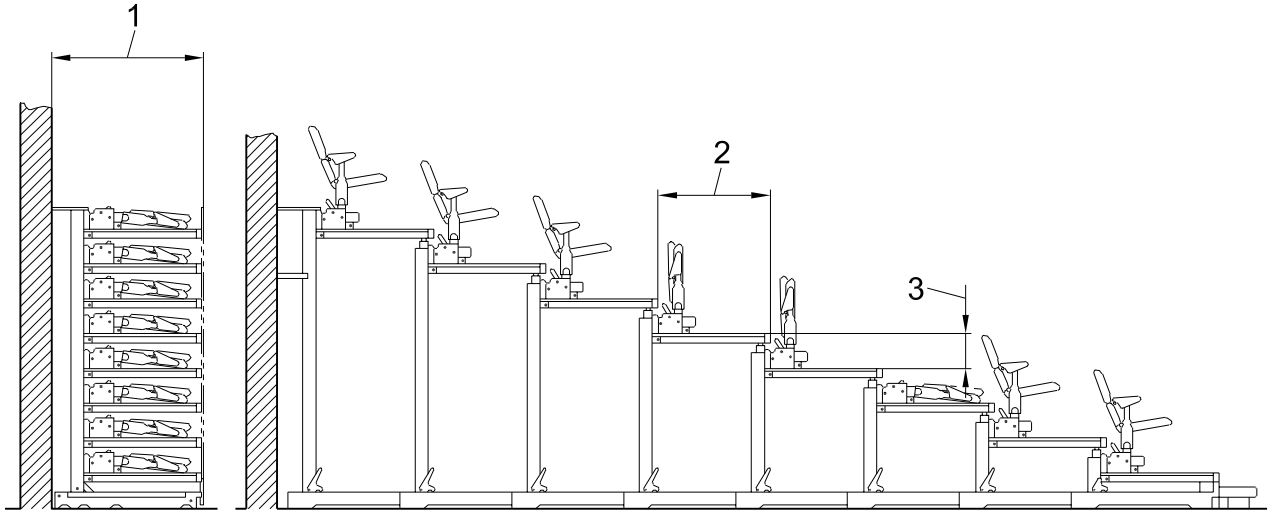
Telescopic stands are constructed from a range of materials including steel, aluminium, plywood, timber, paints and plastic components. Where materials, components and methods of design and construction are not specifically covered by CEN Standards, the designer should be satisfied that the materials and methods to be employed are such as to ensure sufficient levels of safety, durability, integrity, strength, serviceability and performance. Alternatively, a test assembly should be built to test the structure, component, material or method under consideration. The test assembly should be representative as to materials, workmanship and details of the design and construction for which approval is sought.

5 Design

5.1 General

Telescopic stands may be described as a series of platform assemblies or tiers, supported on main vertical columns that wheel or interface with the main floor surface in such a way as to allow the system to be opened and closed in a front to back direction.

Each row or tier interlocks with the previous one so that when opened and ready for use, the structure acts like a single truss running from a low level at the front to the highest tier at the rear (see Figure 3).



Key

1 Closed depth (C/D)

2 Row depth (R/D)

3 Row rise (R/R)

Figure 3 — Example of telescopic stand

Telescopic stands are usually fixed to the structure of the building but can extend and retract within the room or location. In the case of moveable units, careful consideration must be given to operator/operational safety when moving the system.

Telescopic stands are predominantly sited indoors and require a stable, level and firm floor surface to operate upon. Stands range from small installations with bench seats (often in schools and small sports halls), to very large arena installations with, for example, 10,000 fully upholstered, individual seats on 20 rows of tiered platforms. These larger projects require considerable specialised engineering design input from the manufacturer.

A seating place is required to provide a minimum viewing standard together with a sufficient level of safety for the spectator body. Viewing standards refer to the ability of a seated spectator to see a predetermined focal point in the activity area. This viewing standard is often referred to as a sight line.

The layout of the seating deck and the geometry of the deck are required to provide for the safe access and egress of spectators.

Protective barriers on the perimeter of the seating deck and within the seating layout provide protection against falling.

The supporting structure is required to safely resist the static and dynamic forces created by the spectator body and in the case of telescopic stands, particular attention should be made to the horizontal and vertical locking systems that prevent each row or platform from disengaging with the adjacent row or platform.

The material loads and loads of the spectators of telescopic stands shall not exceed the point loads of the bearing capacity of the floor. It has to be considered that resilient sports floors have limited bearing capacities for static and dynamic loads.

Criteria concerning sightline, layout and protection from falling are similar to permanent and telescopic seating decks. However, the nature of vertical support of permanent and telescopic seating decks is significantly different as is the ratio of live load to dead load.