SLOVENSKI STANDARD
SIST EN 13200-6:2006

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Prostori za gledalce – 6. del: Razstavljive (začasne) tribune

Spectator facilities - Part 6: Demountable (temporary) stands

Zuschaueranlagen - Teil 6: Demontierbare (provisorische) Tribünen

Installations pour spectateurs - Partie 6: Tribunes (temporaires) démontables

Ta slovenski standard je istoveten z: **EN 13200-6:2006**

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

SIST EN 13200-6:2006 **en**

EUROPEAN STANDARD

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English Version

Spectator facilities - Part 6: Demountable (temporary) stands

Installations pour spectateurs - Partie 6: Tribunes (temporaires) démontables

Zuschaueranlagen - Teil 6: Demontierbare (provisorische) Tribünen

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

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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 Central Secretariat has the same status as the official versions.

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Foreword

This document (EN 13200-6:2006) 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of an identical text or by endorsement, at the latest by February 2007, and conflicting national standards shall be withdrawn at the latest by February 2007.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 demountable (temporary) stands at permanent or temporary entertainment venues including sports stadiums, sport halls and indoor and outdoor facilities. Stands in fairground 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 1991-1-4, *Eurocode 1: Actions on structures - Part 1-4: General actions - Wind actions*

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

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

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in 13200-1:2003 and the following apply.

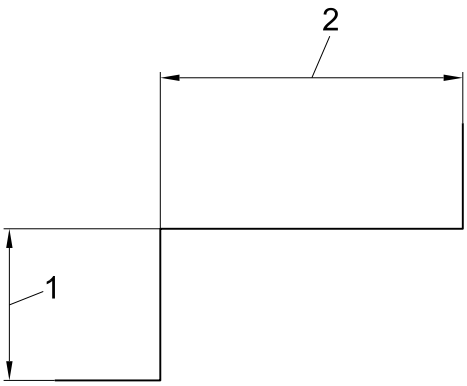
3.1
demountable (temporary) stands
tiered system constructed from standardised components that can be erected and dismantled, moved from place to place and deployed in various configurations both indoors and outdoors to produce standing or seating accommodation for spectators

3.2
design documentation
documents provided by the designer of demountable (temporary) stands that ensures that the basis of design may be clearly understood and from which all design criteria can be verified

3.3
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

3.4
handrail
component designed to protect and assist the passage of users of the grandstand

3.5
riser
vertical component between one row and another row or landing above or below it (see Figure 1)



Key

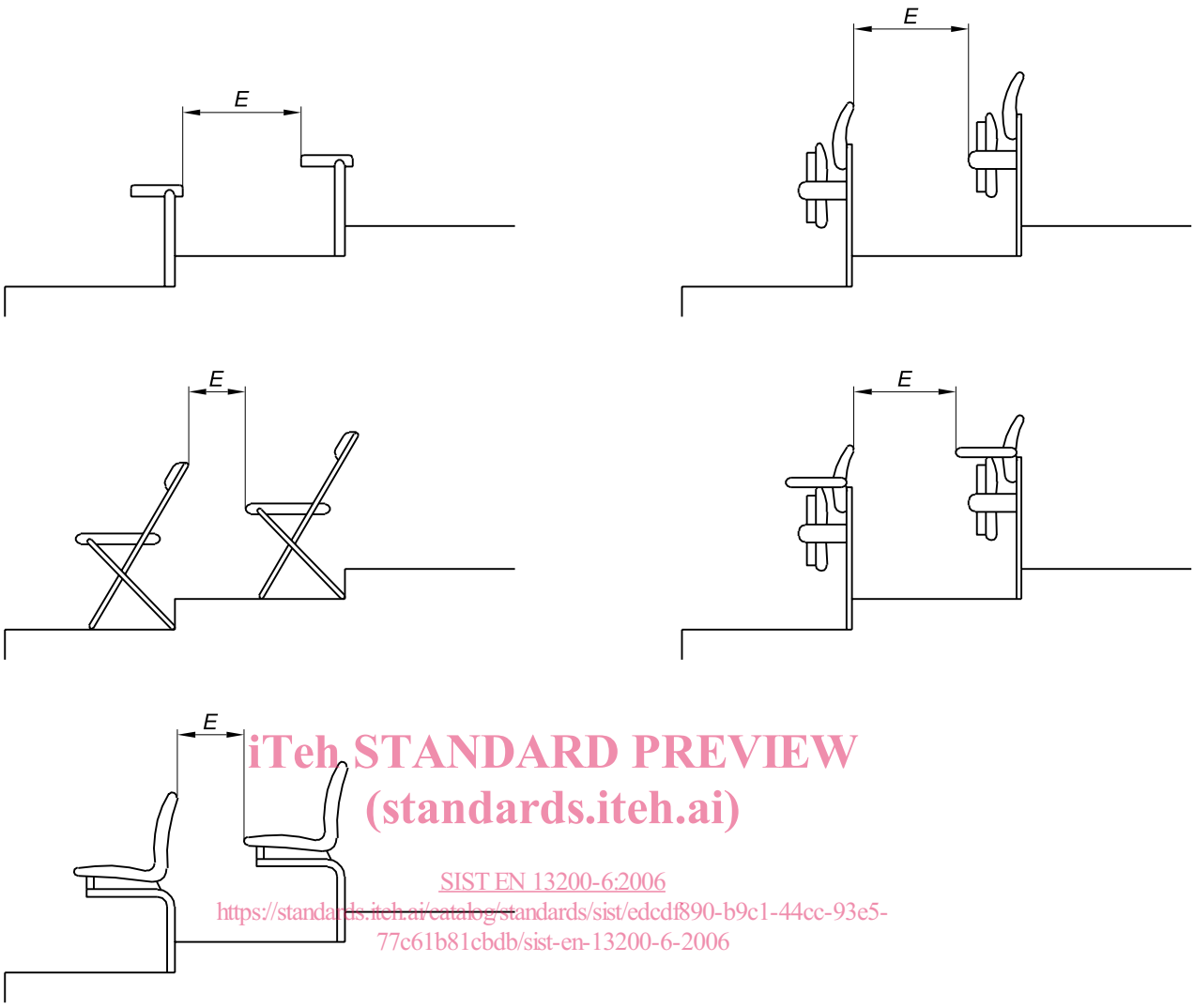
1 riser

2 row depth

Figure 1 — Riser

3.6
row depth
horizontal distance between successive risers (see Figure 1)

3.7
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

3.8
tread
horizontal component of a step

3.9
vomitory
access route built into the gradient of a stand which directly links spectator accommodation with routes for ingress, egress or emergency evacuation

4 Materials requirements

Demountable (temporary) stands incorporate elements from a range of materials including steel, aluminium, timber, plywood, 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

Demountable stands shall fulfil the national requirements for fire escape and emergency evacuation.

Demountable (temporary) stands may be described as a seating or standing deck of a stepped tiered nature supported by a substructure possessing large numbers of common elements.

Demountable (temporary) stands are used for a wide spectrum of events both indoors and outdoors ranging from minor local events to major international events seating thousands of spectators.

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 ingress 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 other dynamic forces that are required by applicable national standards.

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

For demountable stands manufactured before the publication of this standard, a written risk assessment shall be necessary to justify a departure from the minimum values.

5.2 Sightlines

Requirements and recommendations pertaining to sightlines are given in EN 13200-1.

Where sightlines resulting from the installation of temporary seating do not meet the standards required for permanent seating the matter should be dealt with by a risk assessment made by the manufacturer.

5.3 Basic specification

5.3.1 General

Where demountable stands are used outdoors and in the absence of applicable national standards, the spectator body should be able to reach a place of relative safety in eight minutes.

Where demountable stands are used in enclosed areas, relevant national fire requirements will normally specify maximum travel distances for a user of the stand. A travel distance shall be measured along the route defined by rows and passageways.

Seats are to be of constant depth throughout the length of a row. Where the seats tip-up automatically the width of the clearway should be measured between the back of one seat unit and the maximum projection of the seat unit behind when the seat is in the upright position.

With respect to relative lateral positioning, seat centres should be a minimum of 450 mm apart for seats without arms and a minimum of 500 mm for seats with arms.

In tiered seating blocks the riser height of steps in passageways should not exceed 200 mm. The recommended maximum riser height is 170 mm.

The minimum riser height or step height is 100 mm. The riser height should be uniform throughout the access stairs and preferably be uniform with connecting stairs.

Closed risers are preferred and should be designed to minimise any tripping hazard.

5.3.2 Row depth

Requirements and recommendations are given in EN 13200-1.

5.4 Loading

5.4.1 Self weight

Self weight is calculated from the unit weights given in EN 1991-1-1 or from the actual known weights of the material used.

5.4.2 Imposed vertical loads

EN 1991-1-1 considers various categories of loading appropriate to the type of activity/occupancy for the part of a building or structure.

Loading ranges are given in EN 1991-1-1. The following recommended values are given in **bold numbers.**

Category C concerns **Areas where people may congregate.**

Category C2 concerns areas with fixed seats. The imposed loading range is:

Uniformly distributed load 3,0 to **4,0** kN/m^2.

Category C5 concerns areas susceptible to overcrowding and includes stands; the imposed loading range is:

Uniformly distributed load **5,0** to 7,5 kN/m^2.

All floors should be designed to carry the uniformly distributed load derived using appropriate load factors.

Vertical imposed loads shall be taken into account as quasi-static actions (see EN 1990). The load models may include dynamic effects if there is no risk of resonance or other significant dynamic response of the structure (see Eurocodes Standards).

Overcrowding is considered to be greater spectator occupancy of a space than would arise during expected use.

Concentrated loading can arise from spectators jumping from a standing position on seats and may need to be considered as a design requirement. EN 1991-1-1 gives concentrated loads and their manner of application for categories C2 and C5. It is considered that in many cases the concentrated loads given in EN 1991-1-1 will not necessarily apply to demountable stands. The appropriate concentrated loads for demountable stands should derive from consideration of the intended use, a recorded risk analysis and national requirement.