



# SLOVENSKI STANDARD

## SIST EN 13200-1:2004

01-april-2004

---

Df c g h c f ] n U [ ` Y X U W ` E % r X Y . ` A Y f ] U n U b U f h c j U b ` Y j ] X b Y [ U d c ` U [ ` Y X U W j ` !  
G d Y W Z \_ U Y U

Spectator facilities - Part 1: Layout criteria for spectator viewing area - Specification

Zuschaueranlagen - Teil 1: Kriterien für die räumliche Anordnung von Zuschauerplätzen  
- Anforderungen

(standards.iteh.ai)

Installations pour spectateurs - Partie 1: Criteres de disposition des espaces  
d'observation pour spectateurs - Specifications

<https://standards.iteh.ai/catalog/standards/sist/37e5ce46-6c24-4b9c-86cc-bd6a64441447/sist-en-13200-1-2004>

Ta slovenski standard je istoveten z: EN 13200-1:2003

---

### 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 13200-1:2004**

**en**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN 13200-1:2004](#)

<https://standards.iteh.ai/catalog/standards/sist/37e5ce46-6c24-4b9c-86cc-bd6a64441447/sist-en-13200-1-2004>

EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 13200-1**

December 2003

ICS 91.040.10; 97.200.10; 97.220.10

English version

## Spectator facilities - Part 1: Layout criteria for spectator viewing area - Specification

Installations pour spectateurs - Partie 1: Critères de disposition des espaces d'observation pour spectateurs - Spécifications

Zuschaueranlagen - Teil 1: Kriterien für die räumliche Anordnung von Zuschauerplätzen - Anforderungen

This European Standard was approved by CEN on 18 September 2003.

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 Management Centre 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

[SIST EN 13200-1:2004](https://standards.iteh.ai/catalog/standards/sist/37e5ce46-6c24-4b9c-86cc-bd6a64441447/sist-en-13200-1-2004)

<https://standards.iteh.ai/catalog/standards/sist/37e5ce46-6c24-4b9c-86cc-bd6a64441447/sist-en-13200-1-2004>



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

Management Centre: rue de Stassart, 36 B-1050 Brussels

<b>Contents</b>	<b>page</b>
Foreword.....	3
Introduction .....	4
1 <b>Scope</b> .....	5
2 <b>Normative references</b> .....	5
3 <b>Terms and definitions</b> .....	5
4 <b>Symbols</b> .....	7
5 <b>Viewing Area</b> .....	7
5.1 <b>General requirements</b> .....	7
5.2 <b>Requirements for standing places</b> .....	7
5.3 <b>Requirements for seating places</b> .....	8
5.4 <b>Places for wheelchair-user spectators</b> .....	12
6 <b>Technical equipment</b> .....	12
6.1 <b>Lighting</b> .....	12
6.2 <b>Communication system and signs</b> .....	12
7 <b>Determination of design capacity</b> .....	12
7.1 <b>Standing places</b> .....	12
7.2 <b>Seating places</b> .....	13
8 <b>Flow capacity of Exit from Viewing Area</b> .....	13
9 <b>Loads and other dynamic actions</b> .....	13
10 <b>Sight-line and largest distance of vision</b> .....	13
10.1 <b>Sight-line</b> .....	13
<b>Annex A (informative) Example of Spectator Facility</b> .....	16
<b>Annex B (informative) Largest distance of vision</b> .....	18
<b>Annex C (informative) Classification of sports areas and criteria for the determination of groups</b> .....	20
<b>Annex D (informative) Roof coverings of stands</b> .....	23
<b>Annex E (informative) Flow capacity from exit from viewing area</b> .....	24
<b>Bibliography</b> .....	25

## Foreword

This document (EN 13200-1:2003) has been prepared by Technical Committee CEN/TC 315, "Spectators 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 June 2004, and conflicting national standards shall be withdrawn at the latest by June 2004.

This European Standard with the general title "*Spectator facilities*" consists of the following Parts:

— *Part 1: Layout criteria for spectator viewing area - Specification.*

— *Part 2: Layout criteria of service area - Requirements*

— *Part 3: Separating elements - Requirements*

— *Part 4: Seats - Product Characteristics.*<sup>1)</sup>

— *Telescopic stands.*<sup>1)</sup>

— *Demountable stands.*<sup>1)</sup>

iteh STANDARD PREVIEW  
(standards.iteh.ai)

SIST EN 13200-1:2004

Annexes A, B, C, D and E of this European Standard are informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

---

<sup>1)</sup> Work items in preparation.

**EN 13200-1:2003 (E)****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 the 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 equivalent.

In certain countries the minimum number of spectators is related to the application of this standard.

Safety management does not form a part of this standard.

**iTeh STANDARD PREVIEW  
(standards.iteh.ai)**

[SIST EN 13200-1:2004](https://standards.iteh.ai/catalog/standards/sist/37e5ce46-6c24-4b9c-86cc-bd6a64441447/sist-en-13200-1-2004)

<https://standards.iteh.ai/catalog/standards/sist/37e5ce46-6c24-4b9c-86cc-bd6a64441447/sist-en-13200-1-2004>

## 1 Scope

This European Standard specifies design requirements for spectator accommodation at permanent or temporary entertainment venues including sport stadia, sport halls, indoor and outdoor facilities for the purpose of enabling their functionality.

Other permanent venues such as theatres, cinemas, opera houses, lecture halls and similar are excluded from this standard.

NOTE Provisions for media facilities are not included in this standard.

## 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 1838, *Lighting applications – Emergency lighting*.

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

iTeh STANDARD PREVIEW

ISO 7001, *Public information symbols*. ([standards.iteh.ai](https://standards.iteh.ai))

## 3 Terms and definitions

SIST EN 13200-1:2004

<https://standards.iteh.ai/catalog/standards/sist/37e5ce46-6c24-4b9c-86cc-bd6a64441447/sist-en-13200-1-2004>

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

### 3.1

#### **spectator facility**

area of congregation comprising an activity area, a viewing area and a service area. It includes all the spaces where the public assembles, indoors or outdoors, permanently or temporary, to watch sports, entertainment or miscellaneous events (see annex A)

### 3.2

#### **activity area**

area where the event takes place

### 3.3

#### **viewing area**

area from which the spectators view the event, including areas for seated, standing and wheelchair-user spectators and the access arrangements immediately associated with such areas (see annex A)

### 3.4

#### **service area**

area where publically accessible utilities are found, e.g. toilets, first aid, cafeterias, souvenirs shop, including passages, stairs and ramps between the viewing area and the exit of the facility (see annex A)

### 3.5

#### **place**

(for a spectator): space in the viewing area needed for a safe and good view of the event taking place, which is for a single sitting, standing or wheelchair-user spectator

**EN 13200-1:2003 (E)****3.6****row**

line of a number of similar and adjacent places for spectators

**3.7****block**

unit of the viewing area comprising a number of rows and served by at least one passageway

**3.8****sector**

unit of the viewing area comprising one or more similar blocks

**3.9****stand (grandstand)**

structure providing a viewing area

**3.10****sight-line**

line joining the eye of a spectator and the point of interest on the activity area without optical interruption

**3.11****point of interest**

point on the activity area from which the sight-line is linked to the eye point

**3.12****design capacity**

total number of spectators for which a spectator facility or some division of a spectator facility (block or sector) is designed

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

**3.13****passage way**

access route to a sector or block

[SIST EN 13200-1:2004](https://standards.iteh.ai/catalog/standards/sist/37e5ce46-6c24-4b9c-86cc-bd6a64441447/sist-en-13200-1-2004)

<https://standards.iteh.ai/catalog/standards/sist/37e5ce46-6c24-4b9c-86cc-bd6a64441447/sist-en-13200-1-2004>

**3.14****flow capacity**

number of spectators that can safely pass through a given width of a space in a specified time

**3.15****viewing slope**

a non stepped sloping area providing standing accommodation for the spectator

**3.16****place of safety**

a place where a person is no longer in danger from fire or other emergencies

**3.17****external area**

place external to the activity area, viewing area and service area intended to be used as public road, parking and passages for spectators



## 4 Symbols

$B$  is the dimension of the tread of a step;

$C$  is the dimension of the riser of a step;

$E$  is the distance between the foremost projection of one seat and the back of the seat in front of it (clearway) (clear width for the row passage);

$F$  is the depth of seat;

$S$  is the height of seat back;

$B_{se}$  is the dimension of the tread where there are seating places (seating row depth);

$B_{st}$  is the dimension of the tread providing a standing place;

$C_{se}$  is the difference of level between seat and platform for the support of one's feet or for passage;

$C_{st}$  is the difference of level between two successive treads in standing areas;

$\alpha$  is the angle of inclination of the stand.

## 5 Viewing Area

iTeh STANDARD PREVIEW  
(standards.iteh.ai)

### 5.1 General requirements

**5.1.1** The spectator viewing area comprises standing places, seating places (including wheelchair spaces) and necessary passageways for circulation into, within and out of the viewing area.

**5.1.2** Standing places and seating places of the Viewing Area may be located on a horizontal surface, a viewing slope or on rows of steps.

**5.1.3** The Viewing Area shall provide unobstructed viewing of the whole of the activity area for each spectator.

**5.1.4** All walkways and areas for standing places shall be slip resistant in both dry and wet conditions. All outdoor surfaces shall be adequately drained.

**5.1.5** Large groups of spectators are subject to continuous coming and going. Appropriate subdivision of the viewing area can be achieved by using separating elements. Each such subdivision shall have its own entrances and/or exits. There shall be a minimum of two exits in a sector.

**5.1.6** For means of access, any passageway may be on a plane or on an inclined plane or can be composed of steps with a recommended maximum riser of 200 mm and a recommended minimum tread of 250 mm, however the maximum inclination shall not exceed  $\alpha \leq 35^\circ$ .

### 5.2 Requirements for standing places

**5.2.1** For standing places on horizontal surfaces, viewing slopes or steps all aspects of sector divisions, accessibility, density of spectators, and separating elements have to be considered.

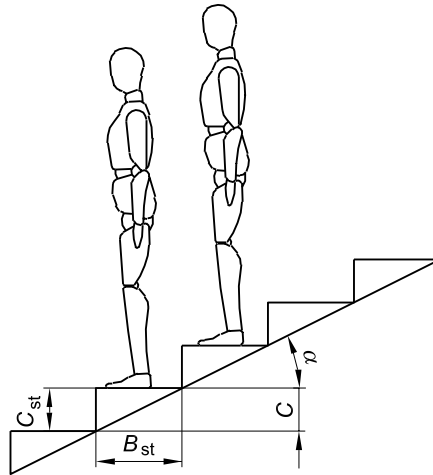
**5.2.2** Where viewing accommodation for standing consist of steps the tread,  $B_{st}$ , shall be at least 350 mm. Consideration shall be given to the needs of access, the density of spectator population and the provision of crush barriers.

The recommended inclination of viewing slopes shall not exceed 10% (6°).

## EN 13200-1:2003 (E)

NOTE 1 The recommended value for the tread ( $B_{st}$ ) is 400 mm (See Figure 1)

NOTE 2 Designers and spectator facilities owners should take into consideration the possible future conversion of standing areas to seating accommodation and that this will have an effect on the selection of dimensions and sight-lines.



## Key

$C$  dimension of the riser of the step;

$B_{st}$  dimension of the tread providing a standing place;

$C_{st}$  difference of level between two successive treads in standing areas.

Figure 1 — Example of standing places provided by steps

<https://standards.iteh.ai/catalog/standards/sist/37e5ce46-6c24-4b9c-86cc-bd6a64441447/sist-en-13200-1-2004>

### 5.3 Requirements for seating places

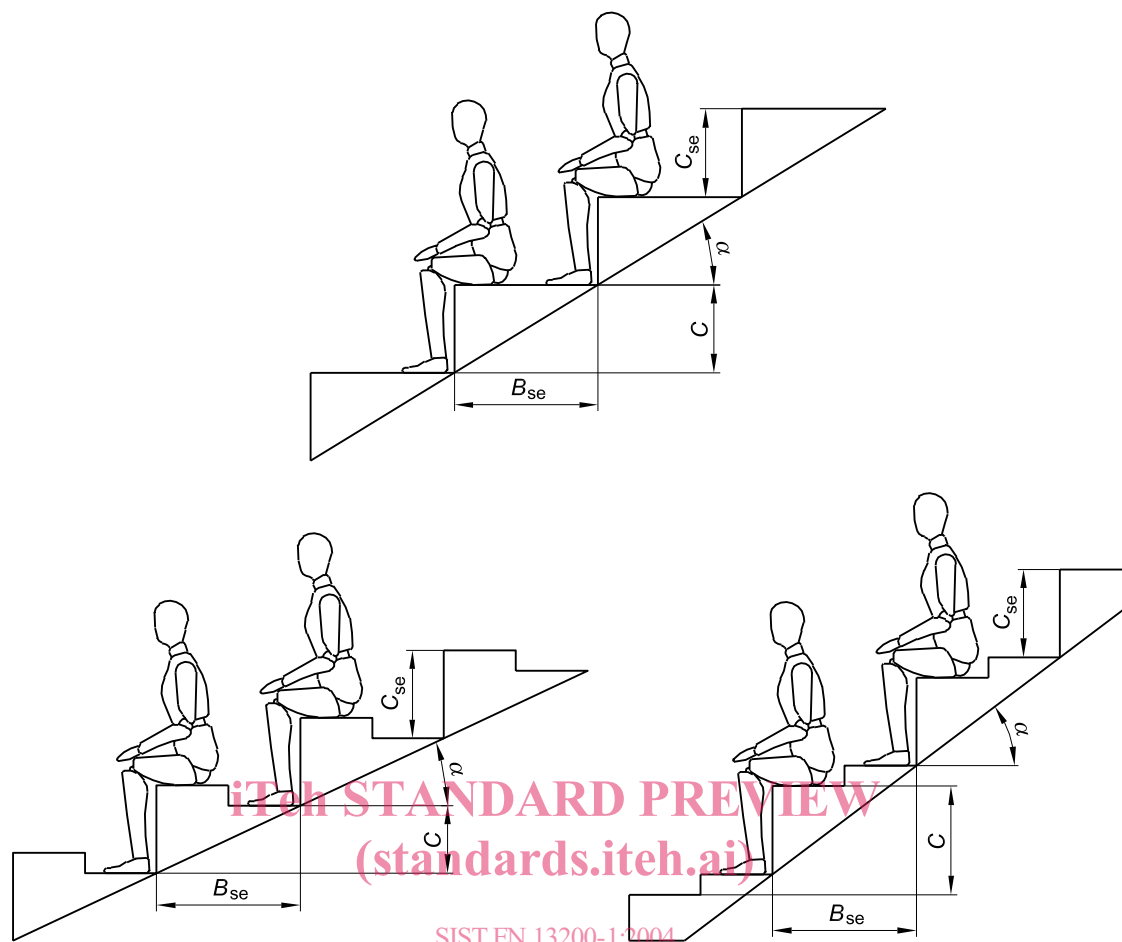
#### 5.3.1 General

Each seating place and each seating row shall be labelled and numbered clearly visible.

#### 5.3.2 Seating places provided by steps

Where seating accommodation consist of steps, the recommended maximum riser  $C_{se}$  (difference of level between seat and tread or passage below) shall be 450 mm and the minimum tread  $B_{se}$  shall be 700 mm (see Figure 2).

NOTE The recommended value for the tread  $B_{se}$  is 800 mm (see Figure 2).



SIST EN 13200-1:2004

<https://standards.iteh.ai/catalog/standards/sist/37e5ce46-6c24-4b9c-86cc-bd6a64441447/sist-en-13200-1-2004>

**Key**

- $C$  dimension of the riser of the step;  
 $B_{se}$  dimension of the tread where there are seating places (seating row depth);  
 $C_{se}$  difference of level between seat and tread or passage below.

**Figure 2 — Example of seating places provided by steps****5.3.3 Seating places with benches**

Where seating accommodation consist of benches, the minimum width for the row-passage  $E$  shall be 350 mm. In this case the minimum tread  $B_{se}$  shall be 700 mm (see Figure 3).

NOTE 1 The recommended minimum width ( $E$ ) is 400 mm.

NOTE 2 The recommended minimum dimension of  $B_{se}$  is 800 mm.