



**SLOVENSKI STANDARD**  
**SIST-TP CEN/TR 15913:2009**  
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Layout criteria for viewing area for spectators with special needs

Layout-Kriterien für den Zuschauerbereich für Zuschauer mit besonderen Anforderungen

Critères de disposition des espaces d'observation pour les spectateurs ayant des besoins spécifiques

INTERNATIONAL STANDARD PREVIEW  
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| 97.200.10 | Gledališka, odrska in<br>studijska oprema ter delovne<br>postaje                   | Theatre, stage and studio<br>equipment                     |

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TECHNICAL REPORT  
RAPPORT TECHNIQUE  
TECHNISCHER BERICHT

**CEN/TR 15913**

August 2009

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ICS 97.200.10; 11.180.01

English Version

## Spectator facilities - Layout criteria for viewing area for spectators with special needs

Critères de disposition des espaces d'observation pour les  
spectateurs ayant des besoins spécifiques

Layout-Kriterien für den Zuschauerbereich für Zuschauer  
mit besonderen Anforderungen

This Technical Report was approved by CEN on 13 July 2009. It has been drawn up by the Technical Committee CEN/TC 315.

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COMITÉ EUROPÉEN DE NORMALISATION  
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## Foreword

This document (CEN/TR 15913:2009) has been prepared by Technical Committee CEN/TC 315 “Spectator facilities”, the secretariat of which is held by UNI.

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## Introduction

This Technical Report has been prepared by CEN/TC 315 in order to establish important criteria for people with special needs to be considered when a spectator viewing area is designed.

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## 1 Scope

This Technical Report gives certain design solutions on how a spectator viewing area should be designed in order to cover people with disabilities and special needs.

## 2 Viewing Areas

New and existing stands should need to provide accessible viewing areas to all disability groups, including ambulant disabled spectators. These areas should be in adequate numbers located around the spectator facility and should be of appropriate viewing quality, to give all spectators a suitable range of viewing options. Provision and standards should be reviewed by management, disabled spectators and local disability groups on a regular basis.

### 2.1 Number of Spaces

Table 1 gives the appropriate guidance on the minimum acceptable scale of provision of wheelchair spaces in newly constructed stands. Where permanent or removable seating is provided, allowance should be made for disabled spectators to have a choice of seating at spectator events. They should also be able to have access to, and the use of, all of the facilities provided within the stadium. Consultations with local supporters and disability groups should determine the appropriate number of spaces which may, in some instances, exceed the recommended criteria herein specified.

**Table 1 — Recommended provision of wheelchair spaces at a newly constructed spectator facility**

Seated capacity of stand or stadium	Number of wheelchair spaces
Under 10,000	Minimum of 6 or 1 in 100 of seated capacity (whichever is greater)
10,000 to 20,000	100 plus 5 per 1,000 above 10,000
20,000 to 40,000	150 plus 3 per 1,000 above 20,000
40,000 or more	210 plus 2 per 1,000 above 40,000

NOTE 1 Refer also to national legislation or equivalent. See also informative Annex A

For existing stands, it is recommended that management provide spaces for people who use wheelchairs'. When considering the number of spaces, service providers will need to demonstrate that adequate provision should be made in their Access Statement or Strategy. It is recommended that Table 1 is applied to existing stands, but where this is impracticable it should be necessary to consult with supporters and local disability groups over compensatory provision elsewhere in the stadium and this may result in a requirement for extra spaces in new stands.

### 2.2 Location of Viewing Areas

Good practice highlights the preference for providing wheelchair users with “a range of vantage points”. It is therefore recommended that areas for disabled spectators should, where possible, be dispersed throughout the spectator facility to provide a variety of locations at different levels and for various prices.

When sitting viewing areas, it is recommended that:

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- Management will need to demonstrate through an access audit, a strategy for the provision of adequately dispersed viewing areas and support accommodation.
- Viewing areas should be accessible to and used independently by spectators with disabilities with the minimum of assistance.
- Where appropriate, designated viewing areas should be provided for both home and visiting spectators.
- Management should make available clear advice on the location of disabled facilities and wheelchair spaces to away spectators who may be visiting the spectator facility for the first time.
- Spectators who use wheelchairs or other similar devices should not be located in areas that may make them feel isolated from spectators in the main body of the stand.
- Access should be available to different areas of a seating deck for ambulant disabled.
- Designated viewing areas should be included in any 'family' areas within a spectator facility.

**2.3 Quality of Viewing Spaces**

Provisions relating to spectator seating are as follows:

- Wheelchair users should be able to manoeuvre easily to a space that allows them a clear view of the event.
- Wheelchair users should be provided with a choice of sitting next to a disabled or non disabled companion.
- Some seats should be located so that an assistance/guide dog can accompany its owner and rest in front of, or under, the seat.

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Prefabricated, temporary or demountable stands all come under the same criteria as conventional construction and need to satisfy the same criteria for numbers, dispersal and viewing quality for disabled spectators. If these criteria cannot be achieved within the stand, alternative and satisfactory provisions may be acceptable.

Although an individual wheelchair place can be provided by a clear space with a width of at least 900mm and a depth of at least 1400mm, it is recommended that each designated place should ideally measure 1400mm x 1400mm to allow space for one helper per wheelchair space to sit alongside in a fixed or removable seat.

Spaces shall be marked (outlined) and equipped with the international symbol.

Spectators using electrically powered wheelchairs may need a socket or equivalent electrical device to charge a flat battery.

Refer also to national legislation or equivalent. See also informative Annex A.

NOTE 1 Designated wheelchair spaces may be those which are kept clear or which can be easily provided by removing seats (see Section 'Flexible viewing areas'). Some spaces should be provided in pairs, with standard seating on at least one side.

NOTE 2 Designers are advised to pursue an enlightened and flexible approach.

**2.4 Viewing Areas for Ambulant Disabled Spectators**

Although ambulant disabled spectators represent the larger proportion of spectators with disabilities there is no established guidance on the scale of provision, the location of areas or the design of individual viewing



spaces. It is, however, essential that a reasonable approach is taken to determine the quality, numbers and dispersal of seated accommodation to the design standards set out below.

Ideally, Table 1 should be used to determine the minimum proportion of seated accommodation for ambulant disabled in the whole stadium. Management, access consultants and designers should demonstrate that they have determined the design requirements in their access plan by consultation with local disability groups and disabled supporters. The provision should be reviewed regularly.

A reasonable approach should be taken in existing stands, i.e. it may be appropriate to set aside seats at the end of rows or the front tier or to design entire rows to a higher standard. Each seat should be identified by the management. Ambulant disabled spectators may prefer not to sit in areas intended primarily for wheelchair users and their helpers. It may also be appropriate to identify areas to be used by some ambulant disabled spectators (and their helpers) which are close to vomitories whilst retaining a choice of viewing positions elsewhere in the stadium.

A flexible layout and management approach will be particularly helpful for spectators with visual impairments and also with assistance dogs.

It is recommended that some ambulant disabled seating areas are situated where there are few steps to negotiate, and that some are provided where the rake of the seating tier is not more than 20 degrees. Where the rake is greater, it is advisable to consider the provision of intermittent handrails on radial gangways (or "hand-holds").

If seats are fitted with armrests they should be removable, extra width and extra legroom. Management and their designers will need to agree appropriate dimensions with local disability groups. Seating row depth should be available for those who have difficulty in bending their legs (although this may be achieved by the temporary removal of the seat in front, safety barriers may still be required which may affect sightlines). 'Premium seating rows' often provided for Directors etc may be suitable for this purpose. These seats should be easily identified with vandal-proof markings.

Wheelchair storage space should also be considered within reasonable distance, for those who prefer to transfer from their wheelchairs to a seat.

Consideration should be given to the care of assistance dogs during a match. Management should ensure that the ticketing system allocates spaces that do not allow dogs to obstruct gangways.

Spectators using walking frames, crutches, sticks and canes need room to store their devices closely to them at their seat without obstructing others or reducing passageways.

## 2.5 Sightlines

Sightlines should be such that all spectators have a clear view of the event to the whole of the activity area, unobstructed by persons in front, by roof stanchions or by other obstructions. The provision of areas located around the stadium designated for spectators in wheelchairs has implications for the sightlines of both disabled spectators and other spectators seated or standing nearby.

The following paragraphs and diagrams explain the advantages and disadvantages of various viewing locations, and how sightlines are affected.

Sightlines require particularly careful attention, as some wheelchair users cannot lean forwards or sideways in their seats or turn their heads like non disabled spectators.

Nor should it be forgotten that wheelchair users cannot stand up to avoid having their view blocked. The main principle is that any wheelchair seating area should be designed so that spectators in wheelchairs can still see the event when located behind standing accommodation or where people in front may stand up.

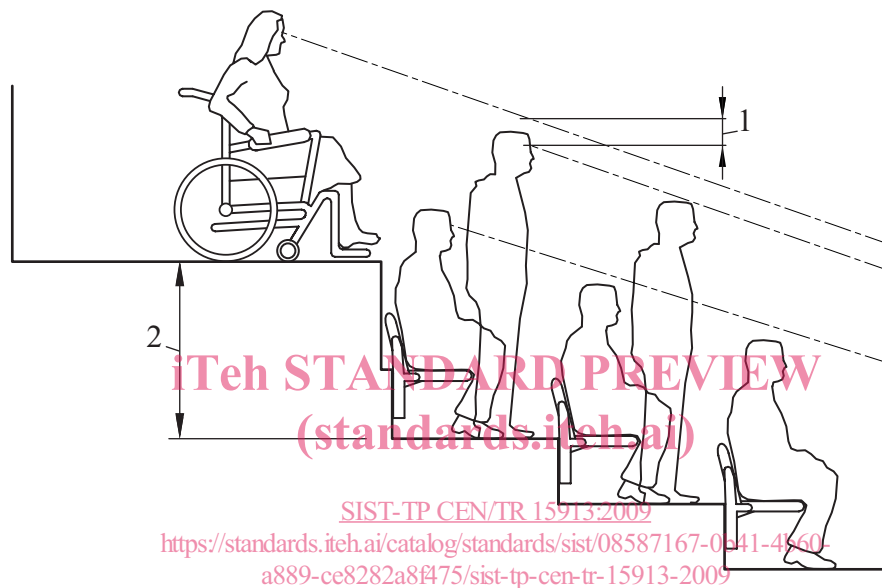
The quality of sightlines is defined in 'C' values. This is the vertical measurement from the eye level of the person in front to the sightline from the eye level of the person behind. Calculating 'C' values can be complex

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and must be undertaken by a competent person. (In this instance, a competent person must understand 'C' values and the wider issues of viewing quality). Care should be taken in considering the average eye level height of a person using a wheelchair, which is 1.15m. The assumed height of a person standing in front is 1.8m. Although sitting positions in wheelchairs vary considerably, it is recommended that the average position could be measured in line above the centre point of the wheels.

It is generally acknowledged that an acceptable viewing standard is obtained with a 'C' value of 90mm or above for all new stands. Only under exceptional circumstances can a 'C' value of less than 90mm be considered acceptable e.g. where the recommended maximum viewing distance to any part of the activity area may be exceeded. It is also acknowledged that at exciting moments during an event some seated spectators will stand. This can affect the quality of view of those in wheelchair spaces behind.

NOTE 1 For further information on how to calculate sightlines and 'C' values see Part 1 of EN 13200-1



## Key

- 1 'C' value
- 2 Increased height riser or 'Super riser'

**Figure 1 — 'Sightlines for Wheelchair Users' (Illustrative purposes only)**

In order to create an acceptable viewing standard for those in wheelchairs, an increased height riser, or 'Super riser', will be necessary, which may be in the order of several times the height of a normal stepping riser. The United Kingdom National Association of Disabled Supporters (NADS) recommends a minimum elevated position as illustrated in Figure 1, 'Sightlines for Wheelchair Users Diagram' which allows a person in a wheelchair to see the playing surface over any people standing in the row directly or diagonally in front. NADS' preferred minimum increased riser height is 1.2m. However, the calculation of sightlines is a very complex issue and not a case where 'one size fits all'. If a lower riser is proposed, designers must demonstrate that an acceptable viewing standard, as defined in the above paragraphs, can be achieved.

**The key issue is that spectators in wheelchairs should have a clear view of the whole activity area at all times, especially when seated spectators directly or diagonally in front stand up.**

It is also important to note that the helper seated adjacent to the wheelchair user should enjoy at least the minimum 'C' value with spectators standing in front.

Conversely, sightlines of non disabled spectators behind and to the side of disabled persons' areas need to be considered to ensure that their sightlines are not unduly affected by wheelchair users and their helpers. See Figure 2. For more guidance on sightlines and possible layouts, see Figure 3, 4, 5 and 6.

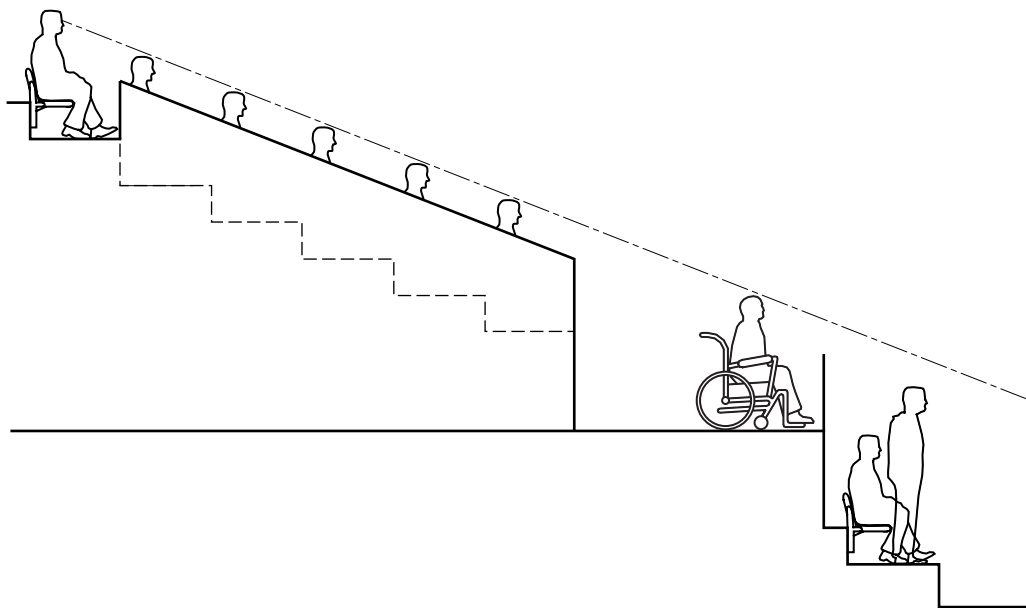


Figure 2 — ‘Wheelchair and helper spaces in mid-tier, front of vomitory’ (Illustrative purposes only)

## 2.6 Activity Level Viewing Areas

It is a basic principle is that disabled people should have access to any storey of a new non-domestic building. In the context of spectator facilities, this means that spectators with disabilities should gain a far greater choice of viewing location than before.

Although it may be appropriate to provide activity level viewing as well as accommodation within the stands, management will need to ensure that these areas have adequate access to other facilities including WCs and refreshments. It is recommended that no more than 25% of wheelchair spaces in totality should be at activity area level side. In addition, visually impaired spectators may wish to be located at activity level to experience the sounds of play and activity on the pitch. Proximity to the activity level will also benefit spectators with limited vision. Locations e.g. behind dugouts and the areas behind goals up to the 18-yard line should be avoided. Whilst the provision of covered pitch-side areas may be considered advantageous it should be noted that this may interfere with sightlines for spectators behind and a preferred arrangement may be to raise the seating rows behind. This could have the effect of raising the height of the whole stand and may be costly.

Staff, players’ and coaches’ dugouts and advertising hoardings can obscure sightlines at activity level. Wheelchair spaces and those likely to be used by blind and partially sighted spectators should not be in locations where obstructions are likely to occur during an event. E.g to avoid this, activity level viewing should not be located close to the UEFA defined ‘technical area’ with seats for staff/coaches. Alternatively, these can be located in the front seating rows. See Diagram 3.

NOTE 1 It should always be remembered that spectators in wheelchairs are less able to adjust their viewing position to see around or over viewing obstructions.

NOTE 2 Consideration may also be given to the first row of seats for both disabled and non-disabled spectators to be at a higher level than that of the activity area.