



Take me out to the ballgame

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by Kimberly Paarlberg

FEATURED, TECHNICAL TOPICS

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The baseball season is heating up. Nothing is better than a summer night and watching your hometown team. Where the seating is provided by bleachers, the *ICC 300 Standard on Bleachers, Folding and Telescopic Seating, and Grandstands* is applicable. The International Code Council includes ways to exit from the bleacher itself, but references the International Building Code (IBC) for means of egress once you are off the bleacher and for accessibility provisions. (ICC 300 Sections 310.1, 404.1, 404.2)

Batter up — What is a bleacher?

It is important to have a clear understanding of what is a bleacher. Anyone who has been to Wrigley Field has heard about the “left field bleachers”; but just having bench seats without backs does not always qualify as a bleacher. The definitions (IBC Section 202, ICC 300 Section 202) are:

BLEACHERS. Tiered seating supported on a dedicated structural system and two or more rows high and is not a building element.

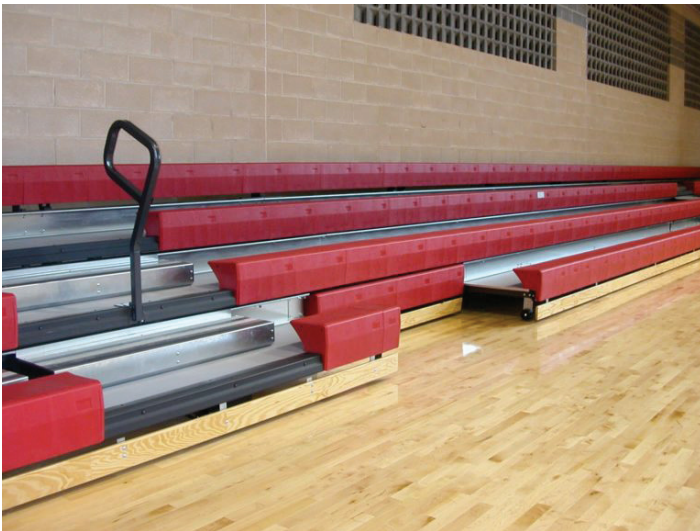
GRANDSTAND. Tiered seating supported on a dedicated structural system and two or more rows high and is not a building element.

FOLDING AND TELESCOPIC SEATING. Tiered seating having an overall shape and size that is capable of being reduced for purposes of moving or storing and is not a building element.

No, it is not a typo. The definition of bleachers and grandstands are the same; and there is no size limit for when you move from one type to the other. Common nomenclature often uses grandstands to meet both large bleacher systems and open air assembly seating on a tiered floor system. The key is that the bleachers/grandstands are rows of seats that are part of a separate support system that is on top of a flat floor or a level slab on grade, not rows of seats located directly on a tiered floor system. If that independent system bleacher/grandstand system can fold up against a wall, then that is folding and telescopic seating. Many large arenas that can reconfigure their space for different venues will often include a combination of both floor levels with seating and bleacher systems. Bleachers, while they commonly only have bench seats, can also have seats with backs and armrests. This discussion is only about bleacher requirements for accessibility.

First base — How many wheelchair spaces are required and where?

The ICC 300, Section 310.1, references the building code for accessibility. Many designers are at first confused by the requirements in IBC Table 1108.2.2 and the ICC A117.1 Table 802.2.2, thinking they are requirements for the same thing. However, the IBC indicates the number of wheelchair spaces, and the ICC A117.1 provides the number of groups (i.e., wheelchair space locations) as part of the dispersion requirements within the seating area. The IBC specifies the number of “wheelchair spaces” required based on the number of seats provided. The ICC A117.1 (Section 802) includes additional information on the wheelchair spaces and the dispersion of wheelchair space locations. For example, a



Example of wheelchair space locations in a bleacher.

1,000-person assembly seating would be required to have 10 wheelchair spaces with companion seats, but those seats could be located in as few as three different locations.

Wheelchair space: A space for a single wheelchair and its occupant.

Wheelchair space locations: A space for a minimum of a single wheelchair and the associated companion seating. Wheelchair space locations can contain multiple wheelchair spaces and associated companion seating.

The criteria for where in the seating to locate the wheelchair space locations is addressed for both line of sight (ICC A117.1 802.9) and dispersion (ICC A117.1 802.10). Where the wheelchair space locations are behind other rows of seats, there are criteria for a line of sight over seated persons or standing persons. In venues where the typical crowd behavior is to stand during exciting and critical times of an event, such as many sports venues, spectators in wheelchairs shall be provided a line of sight over any standing spectators in front of them (ICC A117.1 802.9.2, 802.9.2.1, 802.9.2.2). Table 802.9.2.2 provides technical criteria for how to determine that depending on the row spacing and the height of the risers.

Dispersion is split into horizontal (side-to-side, ICC A117.1 802.10.1), distance from the event (front-to-back, ICC A117.1 802.10.2) and by type (e.g., benches or seats with backs, ICC A117.1 802.10.3). Given the construction of a bleacher system, there are specific allowances for wheelchair spaces and wheelchair space locations.

There is an exception for the horizontal dispersion where the wheelchair spaces are located in the second and third quartile. For a bleacher system located on one side of a football field, this would be the seats between the 25 yard lines. Basically the intent is that if the wheelchair spaces are located within what is considered the best 50 percent of the seats, the side-to-side dispersion requirement can be waived. What is considered the best seats will vary depending on the

placement of the seating around the event and the type of venue.

For distance from the event, bleachers have an exception that allows for the seats to be located only in the row that is the point of entry to the system. For most bleachers, this is the bottom row of the bleacher. Keep in mind that wheelchair spaces and companion seats need to be integrated (ICC A117.1 802.6), so that means the wheelchair spaces have to be inset into the front row, not separated out in front of the system or over to the side.



Example of wheelchair space locations in telescopic bleachers.

Dispersion by type would apply where some of the bleacher seating was different, such as seat with or without backs. While not as easily identifiable as a type, consideration should also be given to the operational aspects, such as a facility with some reserved seats and some open seating, where an area would be set aside for a special fan section, or where some seats may cost more than others.

Second base — What are the requirements for the wheelchair spaces?

“Wheelchair space” dimensions (Sections 802.3 and 802.4) are not to be confused with the “clear floor space” dimensions in Section 305. Both are based on the size of a standard wheelchair, but wheelchair space dimensions vary depending on occupancy and arrangement. In a bleacher system, wheelchair spaces are typically backed into at the front of the bleacher. Single spaces are 36 inches wide, but where two wheelchair spaces are located next to each other, the spaces only have to be 33 inches wide (ICC A117.1 802.3). The spaces need to be at least 48 inches deep. While the space can overlap the space between individual rows (i.e., aisle accessways), they should not overlap the required cross aisle width (ICC A117.1 802.5, 802.5.1). That way, someone can remain stationary in the wheelchair space while other

spectators may be moving to their seats, or leaving to go buy food or beverages. A cross aisle wider than required for means of egress (ICC 300 Section 405) may be required to address this. At this cut out in the bleacher system, there will be a drop off at the footboard for the seats behind the wheelchair spaces. Where this drop off is less than 30 inches, a guard is not required; however, some designers chose to provide some type of barrier for safety reasons. This barrier can use the sight constraint allowances that allows for a 26-inch height (ICC 300 408.1).

Companion seats (IBC Section 1108.2.3, ICC A117.1 802.7, 802.7.1, 802.7.2) are required next to each wheelchair space. The intent is to have the shoulders of the person sitting in the wheelchair space aligned with the shoulders of the person in the companion seat so they can talk during the game, the same as two friends sitting next to each other in the standard seats. For the wheelchair space, that shoulder is assumed to be 12 inches from the rear of the wheelchair space.

In addition to the wheelchair spaces, five percent of the aisle seats in the bleacher system (i.e., designated aisle seats) are for persons with mobility impairments. Persons that have difficulty moving down the spaces between the individual rows (i.e., aisle accessways) can request these seats. Since these persons might have canes, crutches or difficulty moving, the designated aisle seats should be close to the accessible route. A few steps to get to these seats are acceptable. Designated aisle seats must be identified by some type of mark or symbol (ICC A117.1 Section 802.8.2).

Third base — How does the emergency evacuation requirements for persons using the wheelchair spaces (i.e., accessible means of egress) affect the bleacher system design?

ICC 300 includes means of egress requirements for the bleacher, such as number of exits, travel distance, aisle width, treads and riser requirements for the stepped aisles, and handrails and guards (ICC 300 Chapter 4). For bleacher systems with 250 occupants or less, only one means of egress is required from the bleacher itself (ICC 300 Table 404.1). Where the bleacher is in a room or space confined by walls or fences, the IBC requirements for means of egress apply to that room or space. For example, a folding and telescopic bleacher in a school gym with 600 seats would need at least two means of egress off the bleachers, but at least three exits from the gym (IBC Section 1006.2.1.1).

What typically gets missed is the requirements for accessible means of egress. Where one means of egress is required, at least one accessible means of egress is required. Where two or more means of egress are required at least two accessible means of egress are required (IBC 1009.1). Therefore, where



Example of accessible route for ingress and egress.

bleacher systems are raised so there is a cross aisle at the front of the seating leading to exit stairways at each end, while one ramp is needed to provide an accessible route to the wheelchair spaces (IBC 1104.3), where there are more than 250 seats, two ramps will most likely be needed for accessible means of egress (IBC 1009.1). A person leaving a wheelchair space can travel back the same route they came in before; they have two choices of ways to leave as long as they can meet the common path of travel limits (ICC 300 Section 407.4.1). For outside seating, that is a maximum length of 50 feet. For the standard high school football bleachers, this would most likely mean with wheelchair spaces located across the front row of the raised bleacher system, the cross aisle would have to have a ramp at each end. If the designer chose the dispersion option to locate the wheelchair spaces in the second and third quartile along the front row, a centrally located ramp might meet the criteria for accessible ingress and egress, provided that the bleacher system is not elevated very high above grade. The travel distance for common path of travel would be measured from the wheelchair spaces along the accessible route to the bottom of the ramp where there were two accessible routes away from the bleachers.

Home plate — Coming to the end of the run...

The IBC does address accessibility to press boxes (IBC Section 1104.3.2). Where access to the press box is directly from the bleacher and the press box is less than 500 square feet in area, the press box is not required to be accessible.

Regardless of how large or small the bleacher system, accessible seating must be incorporated into the design. This includes temporary bleachers brought out for parades or seasonally. Consideration must be given for placement of the wheelchair spaces, as well as the routes to and from

the wheelchair spaces. So while you are checking out that summer baseball game, take a look at the bleacher system you may be sitting on. And for those of us in Chicago....

*Rooting for the Cubs is
not easy, but the best
things in life never are.
— Dennis Farina*

References:

2018 *International Building Code* (IBC), 2017 *ICC 300 Standard on Bleachers, Folding and Telescopic Seating, and Grandstands* (ICC 300) and the 2009 *ICC A117.1 Accessible and Usable Buildings and Facilities* (ICC A117.1) (Note: There is a 2017 edition of the ICC A117.1, but it is not referenced in the 2018 IBC).

ABOUT THE AUTHOR KIMBERLY PAARLBERG

Kimberly Paarlberg is a senior staff architect in Technical Services with the International Code Council. Her experience with the Code Council includes work in the plan review and code development departments. Paarlberg serves as code development secretary for the IBC Means of Egress/Accessibility and ICC Administration committees. She is the Code Council representative for development of the referenced technical standard for accessibility, ICC/ANSI A117.1 "Accessible and Usable Buildings and Facilities." Paarlberg writes interpretations, commentaries and articles about a wide variety of accessibility issues.