



SPECIFICATIONS FOR STEEL I - BEAM GRANDSTAND

Part I

1.0 QUALITY ASSURANCE

- A. Codes and Standards
 - 1. Comply with provisions of 2009 IBC and local codes and standards.
- B. Qualifications of Manufacturer
 - 1. Employ manufacturer with continuous experience manufacturing bleachers and grandstands for not less than the previous ten years. Factory welders must be AWS certified according to applicable code compliances.
- C. Welding
 - 1. Employ only welders who have passed AWS qualification tests for type and position of welding as prescribed in "Standard Qualification Procedure" of American Welding Society.

1.1 SUBMITTALS

- A. Shop Drawings
 - 1. Erection Plan
 - a. Complete plan showing all locations, dimensions, and quantities of structural systems, including framing, decking, seating, stairs and ramp. Shop drawings to be sealed by a registered professional engineer with schedules for type, location, quantity, and details of steel and aluminum components required for project.
- B. Product Data
 - 1. Manufacturer to submit descriptive product data for project.
- C. Certificates
 - 1. Warranty
 - a. Durability of grandstand against rupture or structural failure covering workmanship and materials shall be guaranteed for a period of five year following substantial completion.

PART II PRODUCT

2.1 GENERAL

- A. Description
 - Galvanized I-beam Design
 - Vertical columns are placed at approximately 18' on center laterally but may be qualified per engineer's specifications.
 - Stringers: Stringers are wide flange beams with steel angle rise and depth fabrications included and are placed at 6 feet on center.
 - a. Front Walkway: 57".

b. Elevated 30 inches above grade at benchmark. OPTION: Elevation as requested by the architect

1. Provide complete assembly including:
 - a. Galvanized I-beam steel substructure
 - b. Aluminum Seats, Steps, and Deck
 - c. Aluminum Guard Rails
 - d. Ramps, Stairs and Railing Systems
 - e. (Concrete caissons to be provided by owner following design and caisson locations as provided by Bleachers International engineer.)

2. Entry Stairs:
 - a. Entry stairs to be firmly anchored to uniformly poured concrete bases.
 - b. Stair rise: 6" and depth: 11", using 2" x 12" mill finished aluminum plank.
 - c. Risers to enclose the stairs in all directions of travel.
 - d. Guardrails on stair to be 42 inches above leading edge of step with intermediate rail at approximately 22 inches, below.
 - e. Stair to have handrail extension. The handgrip portion of handrails shall be 1.66 O.D. in cross-sectional dimension. The handgrip portion of handrail shall have a smooth surface with no sharp corner. The top of handrails and handrail extensions shall be placed not less than 34 inches or more than 38 inches above the nosing of treads and landings. Handrails shall be continuous the full length of the stairs and shall extend in the direction of the stair run not less than 12 inches beyond the bottom riser.

3. Aisles: Aisles with seating on both sides to have 34 inch high handrail with intermediate rail at approximately 22 inches above tread
 - a. Anodized aluminum handrails with rounded ends are discontinuous to allow access to seating through a space 22 inches (min.) to 36 inches (max).
 - b. Aisle width: 54"
OPTIONAL: width as requested by Architect.
 - c. Intermediate steps are used when the rise and the depth per row are more than 8" and 24" respectively.

4. Decking: Rise per row - 8 inches, depth per row – 24".
OPTIONAL: Rise per row – 11 inches, depth per row – 26"; Rise per row - 12 inches, depth per row – 30"; Rise per row – 16 inches, depth per row – 36"; Rise per row – 18 inches, depth per row – 33".
 - a. Each seat is 17 inches above its respective tread.
 - b. Decking is a semi-closed arrangement (2 – 2" x 10" mill finished planks per row).
OPTIONAL: Decking is a closed arrangement with Tongue & Groove interlocking with mill-finished planks.
 - c. Joint Sleeve Assembly: Aluminum sleeves (2 per joint) to insert in flat plank to maintain true alignment in joining together plank pieces. Splice cover is unacceptable between two flat plank pieces joined in a straight line.



5. a. Seating arrangement: 1 – 2” x 10” seat plank, extruded aluminum alloy 6063-T6, clear anodized 204R1, AA-M10C22A31, Class II, and a wall thickness of .078”, 2 x 10” one-piece anodized end caps.
 - b. Backrest: Extruded aluminum, 2x6, aluminum alloy 6063-T6, clear anodized, 2 x 6” one-piece anodized end caps
6. Guard railing: To be on all sides of bleacher, entry stairs and ramps, portals, and landings. Railing to be anodized aluminum with end plugs at ends of straight runs, and/or elbows at corner. All guardrails shall be secured to angle vertical safety risers by galvanized fasteners.
 - a. Guard railing shall be 42” above walkways and entrances. Railing shall be 42” above any adjacent seat. Guard railing on sides and back shall include 9 gauge galvanized chain link fencing fastened in place with galvanized fasteners and aluminum ties.
7. Ramps:
 - a. Slope: ADA compliant (1 in 12 pitch).
 - b. Frames are to be extruded aluminum, mill finish; Planks (treads) to be extruded aluminum, of 6063-T6 alloy
 - c. Treads to run perpendicular to the direction of travel.
 - d. Guard rail to be 42 inches above ramp with 1” x 6 ½” toe board below.
 - e. Guardrails: Three line aluminum rail 36 inches above ramp tread with intermediate rail at approximately 20 inches. Railing shall be continuous the full length of the ramp, and shall extend in the direction of the ramp 12 inches beyond the end of the ramp, returning to end at a newel post.
8. Handicap Provision:
 - a. Riser area adjacent to wheelchair spaces to have intermediate construction so 4-inch sphere cannot pass through openings.
9. Stadium Seating: As requested by the architect

B. Design Loads

1. Comply with the following basic design loads:
 - a. Dead Load 6 psf seat and footboards
 - b. Live Load: 120 psf gross horizontal projection
 - c. Lateral Sway Load: 24 plf seat plank
 - d. Perpendicular Sway Load: 10 plf seat plank
 - e. Wind Load:: Per local building code requirements.
 - f. Design Wind Speed: 120 mph on projected vertical surface
 - g. Live Load of Seat and Tread Plank: 120 plf
 - h. Guardrail: 100 plf vertical and 50 plf horizontal.
 - i. Seismic loads never control the design of these systems.



D. Fabrication/Construction

1. Material - Substructure
 - a. Structural shapes meet one of the following ASTM specifications: A36, A36/A572 grade 50, A572 grade 50, A529-50, or A500 grade B.
 - b. Shop connections are seal welds.
 - c. After fabrication, all steel is hot-dipped galvanized to ASTM-A0123 specifications.
 - d. Painted steel is unacceptable.

2. Material - Extruded Aluminum
 - a. Seat Boards: Nominal 2"x10" anodized plank with anodized end caps. Anodizing: 204 RI, AA-MI10C22 A31, Class II
 - b. Footboards: Nominal 2"x10" mill finish with end caps.
 - c. Riser Board: 1" x 6 1/2" mill finished with end caps.
 - d. Joint Sleeve Assembly: Extruded aluminum alloy.
 - e. Guardrail: Anodized Aluminum Pipe; 1.66" O.D.
 - f. Chain link Fencing: 9 gauge
 - g. The components of the entire structure are to be assembled in such a manner that at elevations above 30 inches over grade a 4-inch sphere cannot pass through the assembly.

PART 3 – EXECUTION

3.01 INSTALLATION

Install bleacher in accordance with manufacturer's installation procedures.