



**E & D SPECIALTY STANDS, INC.**  
MANUFACTURERS OF QUALITY STANDS AND SEATING  
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## **SPECIFICATION FOR CI DECKING SYSTEM**

### SECTION 13125 – GRANDSTANDS / BLEACHERS

#### PART 1 – GENERAL

##### A. SECTION INCLUDES:

- B. Design, fabrication and installation of a permanent beam design grandstands, which includes:
  - a. Concrete Foundations (Piers and concrete pads for stairs & ramps)
  - b. Steel Understructure
  - c. Aluminum Channel Interlocked Tongue & Groove Decking
  - d. Pre-fabricated Pressbox w/ understructure
- C. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

##### A. SUMMARY

- A. ASTM A572-50 Structural Steel Hot-Dipped Galvanized after fabrication to ASTM A123 Specifications.
- B. ASTM A307 - Specification for Carbon Steel Bolts and Studs (Ordinary Bolts)
- C. ASTM A325 - Specification for Carbon Steel Bolts (High Strength Bolt)
- D. All Bolts and Nuts to have a Hot-Dipped Galvanized Finish.

##### 1.1 SUBMITTALS:

- A. Submit shop drawings in accordance with Section 01300 - Submittals.
- B. Shop Drawings: Shop Drawings submitted shall be Designed and Detailed under the direct supervision of a licensed in house Professional Engineer. The Professional Engineer shall be present during the time the design and detailing is completed unless all details are included on the approval drawings bearing his/her seal.

##### B. QUALITY ASSURANCE:

- A. Codes and Standards: Design, fabrication, and installation shall be in accordance with **IBC 2000, BOCA 1999, SBC** codes and the American's with Disabilities Act for wheelchair accessibility.
- B. Manufacturer Qualifications: Minimum 10 years experience in the design and manufacture of permanent beam design grandstands.
- C. Installer Qualifications: Employees to be trained and experienced in the installation of permanent grandstands.
- D. Welders: AWS certified.

##### C. PROJECT/SITE CONDITIONS:

- A. Owner shall verify site location.
- B. Owner will locate all underground utilities and obstructions.
- C. Owner will furnish a geotechnical report indicating soil conditions for proper foundation design.

D. WARRANTY:

- A. Grandstands manufactured by E & D Specialty Stands, are warranted for a period of one year against defects in materials and workmanship starting after completion of the project. This does not apply to any damage resulting from neglect, misuse or improper handling of such material by the owner.

**PART 2 - PRODUCTS**

2.1 MANUFACTURER

- A. E & D Specialty Stands, Inc.  
2081 Franklin Street  
P.O. Box 700  
North Collins, N.Y. 14111  
Tel (800) 525-8515, Fax (716) 337-3436

2.2 PERMANENT BEAM DESIGN GRANDSTANDS

- A. Design: The design shall be in accordance with the generally accepted standards as published by The American Institute of Steel Construction and The Aluminum Association.
- B. Design Loads:
  - 1) A uniformly distributed live load of not less than 100 psf of gross horizontal projection of the grandstand.
  - 2) Grandstand shall be designed to withstand, with or without live loads, the horizontal and uplift pressures due to the wind. Wind pressures shall be derived from SEI/ASCE 7-02, Minimum Design Loads in Buildings and Other Structures.
  - 3) A horizontal swaying force applied to the seats, in a direction parallel to the length of the seats, of 24 lbs./ft.
  - 4) A horizontal swaying force applied to the seats, in a direction perpendicular to the length of the seats, of 10 lb./ft.
  - 5) All seat and footboard members shall be designed for live loads of not less than 120 lb. per lineal foot.
  - 6) Guardrails shall be capable of sustaining a vertical load of 100 plf. and a horizontal thrust of 50 plf acting outwardly at the top of the rail.
  - 7) Under these loads, stresses shall not exceed those allowed in the "Specifications for Structural Steel Buildings, June 1,1989" as adopted by the American Institute of Steel Construction.
- C. Shop Connections: Welded and capable of carrying stress put upon them as per AWS standards.
- D. Steel Members:
  - 1) Stringers: Wide flange beams spaced 6'-0" on center.
  - 2) Columns: Wide flange beams spaced 18'-0" on center longitudinally and transversely they will be spaced according to the size of the stand with a maximum of 24'-0" on center. (Structural square tube columns are unacceptable; inferior welding or drilled holes in them will allow them to deteriorate/ rust from the inside out.
  - 3) Cross Beams: Horizontal cross beams shall be wide flange beams and run "continuously" for the length of the stand.

- 4) Cross Bracing: Front to back and side to side bracing shall be structural steel angle, bolted at ends and centers. On columns requiring 2 or more sets of cross bracing, the connecting strut shall run continuously for the entire length of the stand.
- E. Product Description: "Channel Interlock Deck" (C/I)  
The planking system shall be maintenance free, corrosion resistant all aluminum deck. The deck extrusions shall have a minimum actual vertical support rib height of 1 ¾". All deck extrusions shall "mate" longitudinally within the exterior vertical rib of the entire extrusion length to create a positive male-female tongue and groove connection to minimize the deflection of the decking system. Also, this decking system was so designed for future expansion of the grandstand; being able to reconfigure the seating blocks without the unsightly look of hole penetrations in the aluminum where existing seating use to be. The tread surface shall have a non-slip anti-skid fluted design for safety and designed for a concealed fastening system to the understructure.
- F. Decking Arrangement: Channel Interlock Decking Series
1. Seat boards shall be 2 x 10 flat, extruded aluminum alloy, 6063-T6 with clear anodized Class II finish.
  2. The decking system is comprised of various 1 ¾" tall aluminum extrusions that interlocked together in a male-female shape running the length of the planks. This tongue and groove mechanism will minimize deflection and not separate due to loads being applied to individual planks. The locking mechanism by design shall allow for expansion and contraction of individual planks without effecting performance of the system. These extrusions were designed in such a way that the seat brackets can be attached without any deck penetration. "A No Through Bolting tread-riser system".
  3. The tread system shall have serrations on topside for a slip resistant surface.
  4. The system shall cause the deck planks to react to live loads together at all treads and cross walks and form the appearance of a single tread system. By design, this system forms a solid, overlapping tread and riser installation.
  5. The nose extrusion shall allow for a 1" extruded aluminum contrasting nosepiece to be flush mounted on the leading edge. The front nose extrusion is also designed to encapsulate the vertical riser in an extruded pocket. The rear extrusion or heel has a vertical lip pocket at the rear of the plank that holds the vertical riser plank in place.
  6. These extrusions shall be such that the attachment of the seat brackets, step brackets, mid-aisle rails and all other components that attach at the tread-riser is accomplished without deck penetrations. No through bolting or drilling of the aluminum tread-riser system shall be permitted. Only in areas where there are no nose or heel channels will through bolting be acceptable.
  7. The system shall allow for seat and aisle reconfiguration at any time without evidence of its previous configuration.
  8. All hardware used in the channel for the attachment of seat brackets, step brackets, mid-aisle rails and all other components to be hot dipped galvanized steel. No aluminum threaded fasteners to be used in the channel mounting system.
- G. Dimensions:
- 1) Length of unit: pre contract drawings  
Number of rows:

- 2) Front Walkway: As needed per handicapped compliance and spectator egress.
  - 3) Seat Height: 17 inches
  - 4) Walkway Elevation: 3'-6"
  - 5) Aisles: Shall be designed to meet Applicable codes. All aisles shall have a 1" powder coated **black** tread nosing to delineate the leading edge.
- H. Typical E & D Stands:
- 1) Standard Beam Designs: 12" Rise with a 24" row spacing.
  - 2) Front Walkway: Combinations of interlocking tongue and groove planks to achieve the desired code compliant width.
- I. Guardrails:
- 1) Furnished on sides of the bleacher including stairs, ramps, vomitories and landings.
  - 2) The railing system shall be designed to meet all applicable codes.
  - 3) Rails shall be not less than 42" vertically above the center of the seat board surface at the back and sides of the bleacher.
  - 4) Rails shall be not less than 42" above the elevated front footrests.
  - 5) The railings are to be 1 5/8" O.D. anodized aluminum pipe with end plugs at ends of straight runs and/ or elbows at corners. They are secured to angle railposts with galvanized rail clamps and fasteners.
  - 6) Included on all sides of the bleacher will be 2" x 9 Ga. Galvanized chain link fencing fastened in place with aluminum ties.
- J. Stairs: Shall be provided per applicable codes and/or architects drawings.
- 1) 2 x 12 aluminum plank with a maximum rise of 7", with a 1" contrasting nosing (**black**) to delineate the leading edge.
  - 2) Stairs shall have a "Multi-Pipe Rail System" that conforms to the 4" Ball Rule. The top rail shall be 42" above the leading edge of the treads.
  - 3) Handrails shall be provided with a 1 1/2" clearance from the guardrails and shall extend past the nosing of the last riser with a return
- K. Handicap Provisions:
- 1) All handicapped seating will be in pairs. All handicapped seating to have a companion seat adjacent to them.
  - 1) Wheelchair spaces inset into the front row of seating shall be provided to comply with specified local codes and the "American's with Disabilities Act" for wheelchair accessibility.
  - 2) Front platform shall be accessible from a ramp with a maximum gradient of 1:12.
  - 3) Ramp width shall be minimum of 5'-0" for two-way traffic.
  - 4) Ramp shall have guardrails to match the grandstand. Top rail will be 42" above the ramp surface.
  - 5) Each ramp shall be provided with a handrail between 34"-38" above the ramp surface, and a second handrail between 17"-19" above the ramp surface.

## 2.3 MATERIALS:

- A. Steel: ASTM A572-50 (Hot-Dipped Galvanized)
- B. Aluminum: Extruded alloy 6063-T6.
- C. Foundation Concrete: Minimum compression strength of 3000 psi at 28 days.
- D. Accessories:
  - 1) High Strength Bolts and Nuts - ASTM A-325 steel

- 2) Ordinary Bolts and Nuts - ASTM A-307
- 3) Hold-Down Clip Assemblies - Aluminum alloy 6063-T6
- 4) End Caps - Channel aluminum alloy 6063-T6

#### 2.4 Finishes:

- A. Steel: Shop connections are seal welds. After fabrication, all steel is hot-dipped galvanized to ASTM-A123 specifications.
- B. Aluminum:
  - 1) Anodized: Seat planks and risers shall have a clear anodized 204R1, AA-M10C22A31, Class II.
  - 2) Mill Finish: Footboards

### **PART 3 - EXECUTION**

#### 3.1 Installation

- A. **All work will be performed by factory-trained technicians employed by E & D Specialty Stands with a minimum of 10 years experience in bleacher seating installation. (Using sub-contractors unfamiliar with bleacher erection is prohibited.)**
- B. Complete installation as per approved shop drawings and manufacturers instructions.
- C. After installation, unit shall be inspected for proper alignment and function.

#### 3.2 Foundations/Piers

- A. Footings for the grandstand shall be design to provide sufficient bearing area to support the total live and dead loads of the grandstand without exceeding the allowable soil bearing pressure.
- B. Design and depth of footings shall be determined from the geotechnical report indicating local soil conditions. Supplied by owner.
- C. Hot-Dipped galvanized anchor bolts shall be used, secured in the concrete footings.
- D. Concrete shall attain a working strength of 3,000 psi.