



**E & D SPECIALTY STANDS, INC.**  
MANUFACTURERS OF QUALITY STANDS AND SEATING  
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## **SPECIFICATION FOR PERMANENT BEAM GRANDSTAND WITH INTERLOCK WELDED DECK SYSTEM**

### **PART 1 GENERAL**

#### **1.1 SECTION INCLUDES:**

- A. Design, fabrication, and installation of permanent beam design grandstands including:
  - 1. Concrete Foundations (Piers & Pads)
  - 2. Steel Understructure
  - 3. Aluminum Welded Decking System
  - 4. Press box w/ Understructure

#### **1.2 REFERENCES:**

- 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.

#### **1.3 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.

#### **1.4 QUALITY ASSURANCE:**

- A. Codes and Standards: Design, fabrication, and installation shall be in accordance with IBC 2003 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.

#### **1.5 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.

## 1.6 WARRANTY:

- A. Grandstands manufactured by E & D Specialty Stands, are warranted 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.
  - 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 bracing shall be structural steel angle, bolted at ends and centers. Structural angle bracing shall be used for side

to side bracing. On columns requiring 2 or more sets of cross bracing, the connecting strut shall run continuously for the entire length of the stand.

E. Dimensions:

- 1) Length of unit: as required by drawings  
Number of rows: as required by drawings
- 2) **Front Walkway: ---- or as needed per handicapped compliance**
- 3) Seat Height: 17 inches
- 4) Walkway Elevation: ----
- 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.

F. Typical E & D Stands:

- 1) Standard Beam Designs: ??” Rise with a ??” row spacing.

G. Deck Arrangement:

- 1) Foot board and Riser Plank Arrangement: **Welded Interlocked Deck.**  
The planking shall be maintenance free, corrosion resistant all aluminum deck. There will be no gaps between the longitudinal joints of the planking. The deck extrusions shall have a minimum actual vertical support rib height of 1.75” and a **nominal wall thickness of .080**. All deck extrusions shall “mate” longitudinally within the exterior vertical rib of the entire extrusion length to create a positive male/female tongue connection for the elimination of independent individual deck member flex prior to welding to increase rigidity. The decking is so design for strength and rigidity to prevent an “oil-canning effect to the decking material. The tread surface shall have a non-slip anti-skid fluted design for safety and designed for a concealed fastening system to the understructure.
- 2) The riser members shall be designed with a **nominal wall thickness of .090** and have a male ridge running continuous at the top edge so designed that it will provide engagement into the front bottom of the nosing extrusion on the above tread.
- 3) The decking system is comprised of various extrusions; a nose plank so designed to except the riser plate, a back plank that has a radius edge that butts up to the riser plate and various others sizes of extrusions that when interlocked together with the nose and back form the desires depth of the thread. The decking system shall be welded in a single pass with a minimum .040” diameter 4043 welding wire creating a welded seam tread panel in a minimum length of 18’-0” and not to exceed 36’-6”. The panels are then fastened to the understructure with a 1% slope to the front for water drainage. The connecting hardware that fastens the panels to the understructure shall consist of aluminum clips with galvanized 5/16” bolts, nuts and lock washers to prevent loosing of the clips. **Note: Field welding will not be acceptable.**
- 4) Seat boards shall be 2 x 10 flat, **10” contoured** extruded aluminum alloy, 6063-T6 with clear anodized Class II finish.
- 5) Front Walkway: Combinations of interlocking tongue and groove planks welded together to achieve the desired code compliant width.

H. 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 not be 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.
- I. 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 ½" clearance from the guardrails and shall extend past the nosing of the last riser with a return.
- J. Handicap Provisions:
- 1) All handicapped seating will be in pairs. All handicapped seating to have a companion seat adjacent to them.
  - 2) Wheelchair pockets inset into the front rows of seating shall be provided to comply with specified local codes and the "American's with Disabilities Act" for wheelchair accessibility.
  - 3) Handicapped seating will be enclosed on all three sides with no exposed vertical rise allowed.
  - 4) Front platform shall be accessible from a ramp with a maximum gradient of 1:12.
  - 5) Ramp width shall be minimum of 5'-0" for two-way traffic.
  - 6) Ramp shall have vertical pickets to match the grandstand. Top rail will be 42" above the ramp surface.
  - 7) A handrail 36" above the ramp surface shall be provided.

### 2.3 MATERIALS:

- A. Steel: ASTM A572-50 (Hot-Dipped Galvanized)
- B. Aluminum: Extruded alloy 6063-T6.
- C. 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 shall have a clear anodized 204R1, AA-M10C22A31, Class II.
  - 2) Mill Finish: Footboards
  - 3) Paint Option: All risers, which includes stairs and intermediate steps. A polyurethane powder shall be electrostatically applied with automatic powder guns and bake cured in a gas fired combination of radiant/convection heated oven. Color to be selected and approved by Architect

### **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.
- 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.