

## Bleacher Specifications

Non-Elevated Transportable Galvanized Steel Angle Frame

**WARNING: Not intended for use on public roads (max speed 5 MPH)**

### SECTION 13125

#### NON-ELEVATED TRANSPORTABLE GALVANIZED STEEL ANGLE FRAME

##### PART 1 - GENERAL

##### 1.01 SECTION INCLUDES

- A. Design and fabrication of Non-Elevated angle frame bleachers

##### 1.02 QUALITY ASSURANCE

- A. Manufacturer: National Recreation Systems, Inc.  
P.O. Box 11487 Fort Wayne, In 46858-1487
- B. Manufacturer Qualifications: Manufacturer must have a minimum of ten years experience in the design and manufacture of bleachers.
- C. Welders must conform to AWS standards.
- D. Source Quality Control: Mill Test Certification.
- E. Codes and Standards: 2003 International Building Code.

##### 1.03 WARRANTY

- A. Warranty shall guarantee bleachers to be free from defect in materials and workmanship for a period of 1 year under normal use. Warranty period shall begin on date of completion for projects installed by manufacturer, or its subcontractors, **OR** warranty period shall begin on date of final delivery on projects installed by others.
- B. Anodized finish of plank extrusions shall be covered by a **5 year** warranty against loss of structural strength or finish deterioration due to exposure to weather conditions or UV rays. Discoloration of mill finish aluminum due to galvanic reaction not covered.

##### 1.04 PRODUCT LIABILITY INSURANCE

- A. Product liability insurance is carried for the life of the product in the amount of \$ 2,000,000.

##### 1.05 ENGINEERING

- A. Engineering certifications and calculations by a Registered Professional Engineer will be provided upon request, for a fee.

#### PART 2 – PRODUCTS

##### 2.01 ACCEPTABLE MANUFACTURER

- A. National Recreation Systems, Inc.

##### 2.02 DESIGN

- A. Applicable Codes:  
INTERNATIONAL BUILDING CODE (IBC), 2003 EDITION  
Except aisle and handicapped requirements
- B. Design Loads:
  1. Live Loads: Uniform loading - Structure = 100 psf  
Uniform loading - Seat and Foot plank = 120 plf
  2. Sway Loads: Perpendicular to seats = 10 plf  
Parallel to seats = 24 plf
  3. Guardrail Loads: Uniform vertical load = 100 plf  
Uniform horizontal load = 50 plf  
Concentrated horizontal load = 200 pounds
  4. \*Wind Loads: Basic design wind speed = 150 mph (exposure "B")

**\*Note: Bleacher must be anchored to meet wind loads above**

##### 2.03 NON-ELEVATED ANGLE FRAME BLEACHERS

- A. Quantity and Size: Shall consist of 1 unit(s) 5 rows high x 21 long.  
Net seating capacity per unit 70 (excluding aisles, based on 18" per seat).
- B. Framework: Prefabricated galvanized steel angle spaced at 6' - 0" intervals joined by means of aluminum angle cross bracing.
- C. Shop connections: Welded to meet AWS standards and local code requirements

**National Recreation Systems, Inc. 5120 Investment Drive Fort Wayne, IN 46808**

- D. Joint Sleeve Assembly: Internal splices, where required shall be two per joint, and shall penetrate the joint a minimum of 8" in each direction and be riveted at one end only to allow for contraction and expansion.
- E. Rise and Depth Dimensions: 8" vertical rise and 24" tread depth, Seat height is 17" above its respective tread.
- F. Seats: Nominal 2" x 10" anodized aluminum with anodized end caps.
- G. Treads: Nominal one (1) 2" x 10" mill finish aluminum with anodized end caps on rows 2 & 3.  
Nominal two (2) 2" x 10" mill finish aluminum with anodized end caps on all other rows.
- H. Risers: Nominal 2" x 10" mill finish aluminum with end caps on top row.  
Nominal 1" x 6" mill finish aluminum with end caps on rows 4 & up.
- I. Guardrail: Rails shall be anodized aluminum tube with end plugs and elbows where required.  
All Rails shall be secured to angle supports with galvanized fasteners. Top rails at sides, rear and front shall be 42" above the leading edge of seat or walking surfaces. Rear rail support members shall be aluminum channel, side and front rail support s shall be aluminum angle.
  - 1. Chainlink System: Fencing shall consist of 9 gauge, 2" mesh galvanized chainlink fabric, heavy duty tension bands, tension bars, brace bands, combo rail endcaps, and wire ties.
- J. Transport: The unit shall be divisible in 5-row x 24'-0" maximum increments, include all extra bracing and hardware to make unit transportable, and be able to accept the following Transport Kit (wheel and tongue assembly).
  - 1. Transport Kit L: Consists of 2 wheel assemblies and one 1-7/8" ball hitch with 10" tongue and jack. Tires to be 5.30-12, 2 ply, 21" OD, load capacity 840# per tire. Only one kit needed to transport several systems.
- K. Ground sills: Shall be a minimum of 2"x 6" nominal lumber, pressure treated to render resistant to the elements (treated with ACQ per AWPA Standards), and fastened to bleacher base with galvanized plated lag screws.

## 2.04 MATERIALS / FINISHES

- A. Framework:
  - 1. Galvanized Steel: Structural fabrication with ASTM A-36 steel galvanized finish. Each frame shall be unit-welded, using metal inert gas method, under guidelines by the American Welding Society.  
After fabrication all steel is hot dipped galvanized to ASTM A-123 specifications.  
All crossbracing and horizontal bracing shall be aluminum angle 6061-T6 mill finish.
- B. Extruded Aluminum:
  - 1. Seat planks: Aluminum alloy 6063-T6, clear anodized 204R1, AA-M10C22A31, Class II  
With a wall thickness nominally .078" for impact and deformation resistance.
  - 2. Tread and Riser Planks: Aluminum alloy 6063-T6, mill finish. With a wall thickness nominally .078" for impact and deformation resistance.
  - 3. Guardrail Pipe: 1-5/8 OD schedule 40 aluminum alloy 6105-T5, clear anodized 204R1, AA-M10C22A31, Class II.
- C. Accessories:
  - 1. Channel End Caps: Aluminum alloy 6063-T6, clear anodized 204R1, AA-M10C22A31, Class II.
  - 2. Hardware: Bolts and Nuts shall be hot dipped galvanized.
  - 3. Hold Down Clip Assembly: Aluminum alloy 6063-T6 mill finish.
  - 4. Joint Sleeve Assembly: Aluminum alloy 6061-T6, mill finish.

## PART 3 – EXECUTION

### 3.01 INSTALLATION

- A. Install bleacher unit in accordance with manufacturer written instructions and shop drawings.

**Note: Building codes may vary from site to site. The customer is responsible for verification of local code requirements.**