



ANGLE FRAME BLEACHERS - 3 Part Specifications

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Design and fabrication of angle frame bleachers

1.02 QUALITY ASSURANCE

- A. Manufacturer: NRS Inc.
- 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: 2006 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 by manufacturer. 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 5 year manufacturer 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 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. NRS Inc.

2.02 DESIGN

A. Applicable Codes:

INTERNATIONAL BUILDING CODE (IBC), 2003 EDITION

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 ANGLE FRAME BLEACHERS

- A. Net seating capacity per listed unit is based on based on 18" per seat, excluding aisles.
- B. Framework: Prefabricated aluminum angle or galvanized steel angle at max. 6' spacing joined by means of aluminum angle cross bracing.
- C. Shop connections: Welded to meet AWS standards and local code requirements
- 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. (Except low rise & 3 row models)
- F. Seats: Nominal 2" x 12" anodized aluminum with anodized end caps.
- G. Treads: Nominal one (1) or optional two (2) 2" x 10" mill finish aluminum with anodized end caps on rows 2 and up.

- 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 all other rows.
- I. Aisles: Aisle footboards shall be of aluminum alloy 6063-T6 and be of mill finish with contrasting aisle markings. Three aisle stiffener angles shall be used to strengthen the aisle step.
- J. Aisle Handrail: Anodized aluminum pipe with intermediate rail.
- K. Guardrail: Rails shall be anodized aluminum tube with end plugs and elbows where required. All Rails shall be secured to support 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, ension bars, brace bands, combo rail endcaps, and wire ties.
 - 2. Vertical Picket System: Aluminum pipe and bar anodized after fabrication & attached to supports with galvanized fasteners.

2.04 MATERIALS / FINISHES

A. Framework:

- 1. Aluminum: Structural fabrication with aluminum alloy 6061-T6 mill finish. Each frame shall be unit-welded, using metal inert gas method, under guidelines by the American Welding Society. Galvanized Steel: ASTM A36/A & A529/A 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 finis 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.

4. Handrail Pipe: 1-5/8 OD schedule 40 aluminum alloy 6105-T1, 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.