

TELESCOPIC BLEACHER SPECIFICATIONS

PART 1 GENERAL

1.1 Description

A. Scope

1. Seating systems comprised of multi-tiered rows of seats, deck components and risers on interconnected, retractable, supporting structure. Telescopic seating operation shall be by means of manual or electric operation. Telescopic seating system shall be wall attached (typically), recessed, telescoping or portable. System shall be floor attached where reverse folding.

B. Manufacturer's Design Criteria

1. Gymnasium seat assembly is designed to support, in addition to its own weight, a live load in excess of 120 lbs. per linear foot or 100 lbs. per square foot (whichever affect is greater), front to rear sway in excess of 10 lbs. per linear foot and a parallel sway load in excess of 24 lbs. per linear foot of row.
2. Guard railings are engineered to withstand a load of 200 lbs. per foot at top rail and an intermediate load of 150 lbs. per foot.
3. Steel structure must be free standing when installed and include 4 steel columns per row, per section. Those manufacturers which only include 2 columns per row, per section are not acceptable.
4. Steel columns must be fabricated from structural high tensile steel tubing; minimum size of tubing will be 1 ½" x 3" x 10 ga. Those manufacturers providing formed steel or angle iron columns in place of structural tubing are not acceptable. Maximum spacing between columns shall be 11'-6".
5. Two row locks per row, per bleacher section manufactured from ¼" hot rolled steel to prevent racking of bleachers as they are retracting are required.
6. Footboards shall be produced from ¾" plywood with top facing. Voids or boat patching on top facing is not acceptable. Top facing shall receive 3 coats of colored, opaque, catalyzed epoxy coating.
7. *Optional Upgrade -Panelam Decking on ¾" plywood.*
8. Aluminum trim shall be installed on all exposed edges. Extruded aluminum joiners shall be placed between adjacent footboards.
9. Wood seat boards shall be full 5/4" finished size, kiln dried, select pine with rounded edges. Seat boards with less than a 5/4" thickness are unacceptable. Riser boards shall be full 3/4" finished size, kiln dried, select pine with rounded edges. Seat and Risers boards shall be sealed on all surfaces and three coats of polyurethane on top and sides.

10. Molded seats shall be one-piece, 18" wide of high density polyethylene structural foam with full perimeter interlock and concealed mounting hardware. End caps shall be provided at all ends, aisle ways and ADA locations. Colors are bright without excessive streaking. "Waterfall" coloring will not be acceptable. Indents for numbers and letters shall be standard.
11. No less than 4" diameter x 1 ¼" soft faced, non marking rubber wheels to support understructure system shall be provided with sintered metal bearings and clips for easy replacement.
12. Nose beam shall be formed from 14 ga. minimum galvanized steel. Steel shall have G90 galvanized coating or better. These will encapsulate ¾" plywood decks.
13. Rear riser shall be formed from 14 ga. minimum galvanized steel. Steel shall have G90 galvanized coating or better.
14. Handicap seating provisions: Provide recoverable first tier cutouts as required by ADA. Include manufacturer's standard front guardrail and closure panel below. Shop drawings will reflect locations.

1.2 Quality Assurance

A. Acceptable Manufacturer

1. The manufacturer shall be a firm experienced in the manufacturing of telescopic bleacher seating systems.
2. The telescopic seating system specified herein shall comply with the International Building Code 2006 Edition, NFPA 102 Standard for Grandstands, Folding and Telescopic Seating, Tents, and Membrane Structures 2006 Edition; and specifically with Chapter 5, Folding and Telescopic Seating, except where additional requirements are indicated or imposed by authorities having such jurisdiction.
3. The telescopic seating system manufacturer shall employ a registered, professional engineer to certify that equipment to be supplied meets and/or exceeds the design criteria of these specifications.
4. The telescopic seating system manufacturer shall have all welding done in a CWB/AWB certified shop.
5. It will be the responsibility of the bidder to furnish with his bid a list clarifying any deviation from these specifications, written or implied.

B. Acceptable Installer

1. Installers to be recognized, trained, and certified by the telescopic bleacher seating manufacturer.

1.3 Submittals

- A. Submit six copies of each of the following:
 1. Manufacturer's shop drawings

2. Manufacturer's standard 1 year warranty and limited 20 year warranty
3. Manufacturer's Operation and Maintenance instructions

B. Submit seating and deck samples, as required.

1.4 Warranty

- A. Submit manufacturers standard warranty form for Telescopic seating systems.
1. The manufacturer shall guarantee all work performed under these specifications to be free from defects for a period of one (1) full year.
 2. Replacement structural steel components, nuts, bolts, axles, and wheels as necessary to maintain the integrity of the original installation, will be provided at no charge for a period of twenty (20) years.
 3. The guarantee shall be limited to the fair use of the Telescopic Seating System and shall not include acts of vandalism, fire, flood or other situations that do not fall into the general use requirements of the bleachers.
 4. A yearly inspection and required maintenance must be performed to maintain the extended 20 year warranty.

PART 2 PRODUCT

2.1 Manufacturers

- A. The basis of design for the gymnasium seating shown on the plans and detailed in these specifications is by Sheridan Gymnasium Equipment Limited. Other manufacturers desiring to bid shall submit detailed product literature and specifications a minimum of ten (10) days prior to bid. Any manufacturer which is approved must conform to all specifications herein. Any deviation from this specification is unacceptable.
1. Model: **W100 Wood Seats or M200 Molded Seats**
 2. Aisle Type: Foot level Aisles with center aisle railings with curved top rail terminations.
 3. End rails: Typically self-storing ready rails.
 4. Operation: **Integrally powered friction electric operation or manual operation.**
 5. Product Requirements:
 - a. System to be wall attached. System shall be floor attached where reverse folding is required.
 - b. Bank A Length shall be: _____ as required by drawings
 - c. Bank B Length shall be: _____ as required by drawings
 - d. Total number of Rows: _____ as required by drawings
 - e. **Row rise: 10" / 11-5/8" / 16" as required by specifications**
 - b. **Row spacing: 22" / 24" / 26" / as required by specifications.**
 6. Accessories:

- a. Handicap seating provisions: Provide first tier handicap cutouts to comply with American Disabilities Act (ADA). All handicap cutouts shall have required railings. Center cutouts will be recoverable.
- b. Scorers table 15" X 96". Table shall be self-supporting and portable to be used anywhere within the bleacher system or on the gymnasium floor.
- c. **End railings** shall be designed to withstand the following horizontal forces applied separately:
 - A concentrated load of 200 lb applied at any point and in any direction along the top railing member
 - A uniform load of 50lb/ft applied vertically downward at the top of the guardrail

Rails shall be permanently mounted to the bleachers and automatically extend and stack with the bleachers when the bleachers are operated. The top rail shall have a design angle of 78 degrees outward from vertical to allow the end rail system to automatically extend and stack with bleachers.

Intermediate self-storing end railings shall be 51 inches high when mounted to the deck board. Rail mount should be one-piece which will sandwich the deck board. The rail shall be 36 inches high when measured vertically from center of seat or seat board surface. The end rail shall be 20 inches wide. The vertical members of the guardrail shall be made from one inch square, 14-gauge tubular steel with mandrel formed radius edges. The stiffener bracket shall be of formed steel to withstand the required impact loads and the steel tubes shall be welded with full perimeter fillet welds on all four sides.

Each end rail shall be reinforced by a stiffener bracket clamped to the rail at seat board level and attached to the bleacher seat board with three (3) 2 - 1/4" elevator bolts. The bracket shall be 1/8" thick by 1" wide with a saddle clamp welded to one end to clamp a vertical structural member. The clamp shall be fastened to the vertical member with two 1/4" hex head bolts. All attaching hardware shall be zinc plated.

Top row end rails shall attach to the last intermediate end rail with two clamps on the adjoining vertical members and a stiffener bracket clamped to the rail at seat board level and attached to the bleacher seat board with three(3) 2 - 1/4" elevator bolts. The top row rail shall be 9 inches wide. The vertical members of the guardrail shall be made from one inch square, 14-gauge tubular steel with mandrel formed radius edges.

The five vertical structural members of the end rail shall be spaced so that the vertical openings between the members shall be such as to prevent passage of a 4-inch diameter sphere. Vertical structural members shall be 14 gage tubular steel.

End rail and bracket finish shall be a specially formulated epoxy powder coated surface that is resistant to rust, scratching, peeling

and abrasions. Color choice shall be recommended by the contractor and selected by the respective school principal.

End rails are to be self-storing, nesting inside each other while bleachers open/close, without any action by the operator.

- d. Obstructions: Note any obstructions (columns, drainage pipes, overhead ducts, etc.) on final shop drawings.
- e. **Self-storing "P" aisle rails** shall be permanently mounted to the bleacher by a single pedestal mount with a minimum height of 34" high with terminating mid rail. Handrails shall be attached to a socket which shall rotate 90° for easy storage in socket. Aisle handrails that are detached from the socket, removed from the mounting bracket, or designed to lay down in the socket for storage are **unacceptable**. Spring loaded rails sockets for storage are unacceptable. Aisle rails are to mount to bleacher in at least 2 locations, including foot/deck board and riser/nose beam. Railings, posts, and sockets designed to withstand the following horizontal forces applied separately:
 - A concentrated load of 200 lb applied at any point and in any direction along the top railing member
 - A uniform load of 50lb/ft applied vertically downward at the top of the guardrail
- f. Rail and bracket finish shall be a specially formulated epoxy powder coated surface that is resistant to rust, scratching, peeling and abrasions. Color choice shall be recommended by the contractor and selected by the respective school principal.
- g. 4ea Safety End Closures
Manufactured out of 18oz. vinyl coated polyester fabric.
 - High tensile strength
 - Puncture resistance
 - Mildew resistant
 - Water proof
 - Fire resistantAttaches to back wall, and bleachers to prevent access to underside of bleachers. Color to be chosen by owner.

2.2 Fabrication

- A. Understructure System
 1. Structural high-tensile steel columns fabricated from minimum size 1 ½" x 3" x 10 gauge structural tubing.
 2. Bracing: 1 ½" square, structural tubing
 3. Row Locks: Provide two per each row, per bleacher section made of ¼" plate, hot rolled steel.
 4. Wheels shall be 4" diameter x 1 ¼" width.
 5. Maximum spacing between columns shall be 11'-6"
 6. Finish: Provide manufacturers black, semi-gloss, machinery enamel

B. Deck System

1. Footboards shall be $\frac{3}{4}$ " plywood with top facing. All surfaces shall be thoroughly sealed. Top facing shall receive three coats of colored, opaque, catalyzed epoxy coating. Aluminum trim shall be installed on exposed edges. Adjacent foot boards shall be joined by means of extruded aluminum joiner beam sized for $\frac{3}{4}$ " footboards. The use of $\frac{1}{2}$ " or $\frac{5}{8}$ " footboards are unacceptable.
2. **Optional Upgrade -Panelam Decking on $\frac{3}{4}$ " plywood.**
3. Provide thru-bolt fastening through galvanized steel riser beams at locations of splices in rear riser. Front deck connection shall be provided using front steel nose beams.

C. Decking and Riser Supports

1. Decking and riser supports shall form rigid closed deck structure. Tapered deck stiffeners shall be bolted through the front and back.

D. Seat System

1. **Molded Structural Foam:** Provide one-piece, high density structural polyethylene foam. Scuff resistant, textured solid color with anatomically correct tops. Color(s) for the seat modules shall be determined by the Architect by providing color charts. Contrasting color effects can be created with custom colors.
2. **Wood:** Provide full $\frac{5}{4}$ " kiln dried, select southern yellow pine with rounded edges. Provide sanding sealer and three coats of clear polyurethane finish on top and sides.

E. Electrical System

1. **Friction Drive System:** A series of electric drives are located under the first row in sufficient quantities as located on drawings. Each tractor drive shall consist of two 12" wide x 6" diameter cylinder wheels covered with a specially formulate white 60 durometer soft-faced rubber grooved for positive grip and low wear while reducing stress on floor.
2. The tractor is operated by a minimum $\frac{1}{4}$ " HP gear reduction motor built into a height adjustable steel framework and containing additional weight plates for added traction where necessary. These drives operate from one central control box and a single plug-in, hand-held, low-voltage remote pendant controller which has, in addition to an in-and-out button, a left and a right jog button used to always allow for straight and true steering (steering provided where required). The standard system operates with 3 phase, 208 volt, 60 Hz power. Optional power source can be supplied as required.

PART 3 EXECUTION

3.1 General

- A. Manufacturer's representative or bleacher system installer shall demonstrate the proper method of operation of the bleacher system to the Owner and Architect upon completion of the work.
- B. Telescopic Seating Subcontractor shall verify that all areas are free of impediments interfering with the installation and that substrates are acceptable to receive seating in accordance with the manufacturer's recommendations.
- C. Electrical wiring within the building as required for power operation of the bleachers shall be provided by others.

3.2 INSTALLATION

- D. Seating shall be installed in accordance with the manufacturer's instructions and final shop drawings. Telescopic Seating Subcontractor will install all accessories, anchors, inserts and other items for installation of seating and for permanent attachment to adjoining construction.
- E. Adjustment and Cleaning: Upon completion of installation, Telescopic Seating Subcontractor shall adjust each seating assembly to operate in compliance with manufacturer's recommendations. Telescopic Seating Subcontractor shall clean installed seating on exposed or semi-exposed surfaces and touch-up all exposed finishes.
- F. The manufacturer reserves the right to incorporate design changes and material substitutions as it sees fit to improve the overall product.

END OF SECTION