



## **Legacy™ Elite Aluminum**

### **ENGINEERED DASHBOARD SPECIFICATIONS**

#### **PART 1 - GENERAL**

##### **1.01 PROJECT SCOPE**

- A. Contractor shall furnish and install one complete set of aluminum framed dashboards as indicated on the drawings and specified herein. The contractor shall be responsible for all necessary labor, materials, equipment, and services to complete the project.

##### **1.02 SUBMITTALS**

- A. The contractor shall upon receipt of contract from Owner, prepare a set of shop drawings which will itemize sizes and materials as well as construction details for installation. The manufacturer will submit drawings to the Contractor for review and submittal to the Engineer, Architect or Owner for approval prior to actual fabrication of materials.
- B. Polyethylene samples shall be submitted for Owner approval of color and quality.

##### **1.03 QUALITY ASSURANCE**

- A. All materials shall be per plans and specifications and constructed, manufactured, and installed per plans and specifications. All equipment and materials supplied under these specifications shall be new and of the highest grade material and construction.
- B. Any deviation from this specification, unless approved by the owner prior to bidding, found after installation will be back charged to the contractor at the Owner's discretion. The value of irregularities shall be determined and agreed to by both parties.
- C. Approved dashboard systems, manufacturers and installers:
  - 1. **Legacy™ Elite** dashboard system identical in design to Rink Systems, Inc., Albert Lea, Minnesota (800) 944-7930.
- D. To receive approval prior to bid, dashboard contractors must:
  - 1. Provide evidence of at least five (10) installations identical in construction to the following specifications, each with a minimum of three (5) years operating experience prior to the bidding date. A list of these installations including names, addresses, contacts, and telephone numbers is to be included with requests for prior approval.

2. Manufacturers wishing to obtain prior approval shall have a factory representative perform a site visit.
3. Submit a sample panel of proposed dashboard system being bid showing exactly how the system will be manufactured. Samples shall show how shield mounting hardware will be attached to system, as well as samples of gate latches, hinges, and related hardware.
4. Submit certified test results from a nationally recognized testing laboratory showing that proposed system is equal to the specified system.
5. Submit dasher shop drawings detailing systems design. Drawings must be prepared and approved by a licensed professional engineer.
6. Approval must be obtained at least 10 days prior to the bid date.

E. Bids received from contractors without prior approval will be returned unopened.

#### **1.04 GUARANTEE**

- A. Manufacturer shall warranty all equipment provided under this project against all defects in materials and/or workmanship for a period up to three years from the date of completed installation.

#### **1.05 DELIVERY**

- A. To be arranged to coordinate with completion date of the project. Delivery date shall allow for sufficient installation time prior to project completion date.

### **PART 2 - PRODUCTS**

#### **2.01 RINK DIMENSIONS**

- A. Rink size shall be nominally 85' wide x 200' long with 28' radius corners (field verify).

#### **2.02 MATERIALS AND EQUIPMENT**

- A. Demountable Frame Sections:

1. Dasher panels shall be fabricated in demountable sections of nominal 8' lengths. The design of all panels, whether straight sections, curved sections, or sections in which a gate is located shall be fundamentally similar.
2. At the front, each section shall be made of two horizontal 2" x 2" x 1/8" aluminum tubes used at the top and intermediate locations and one horizontal 3" x 1-1/2" x 1/4" aluminum channel used at the base location.
3. At the back, each section shall be made of one 2" x 1" x 1/8" aluminum tube used at the top location and one 3" x 1-1/2" x 1/4" aluminum channel used at the base location.

4. Where backer panels are specified, an additional 2" x 1" x 1/8" aluminum tube shall be used at the back intermediate location to aid in fastening and supporting the backer sheets.
5. All horizontal angles and tube shall be welded to end plates on each end of the panel. The end plates shall be made of a specially extruded 6" x 2-1/2" x 3/16" aluminum channel. Flat stock end plates shall not be acceptable.
6. Each end plate shall have three 9/16" matching holes to accommodate 1/2" through bolts.
7. All panels over 5' in length shall have an additional 3" x 1-1/2" x 1/8" aluminum tube welded vertically at the center of the panel to add rigidity.
8. Standard size of dasher panel frame shall be 96" long x 41" high x 6" thick.
9. Dasherboard system shall be self supporting. Systems which require separate support posts to support the dasherboard system are not acceptable.

B. Floor Anchors:

1. The dasher contractor shall supply all new steel cast in place anchors and hardware, as detailed on the drawings, required for the installation of the dasherboards around the perimeter of the rink.
2. The dasher contractor shall supply 1/2" x 4" x 4-1/2" galvanized steel hold down plates. Plates shall have a 7/8" hole to accept a 5/8" bolt and flat washer for securing the dasher panels to the 5/8" epoxy sleeve type floor anchors. Each panel shall be fastened to the floor with a minimum of two 5/8" anchors and bolts per 8' section.
3. In applications where the dasherboards are to be removed, all anchors shall be supplied with flush plugs.

C. Dasher Facing:

1. Dasherboard facing shall be 1/2" thick stress relieved high density virgin polyethylene. Reprocessed or reground polyethylene is not acceptable.
2. Polyethylene shall be bright white in color. Color of facing shall be consistent throughout the system. Natural white is not acceptable.
3. Facing panels shall be one piece and cut to match length of demountable framing sections.
4. On panels that require red or dark blue lines, the facing shall be removed by the widths specified so that a 1/2" thick red or dark blue panel of high molecular weight polyethylene can be inserted. Lines shall extend from the kickplate to the caprail.

5. The 1/2" polyethylene shall be attached to the horizontal and vertical frame angles with 1/4" Phillips flat head machine screws, and flanged lock nuts where possible. Spacing of fasteners shall not exceed 10" on center. All exposed fastener heads shall be painted to match facing color.

D. Caprail:

1. The caprail shall be constructed of 3/4" thick high density polyethylene. The caprail must have a textured or mat finish. A smooth finish shall be unacceptable.
2. The 3/4" caprail shall be attached to the front horizontal frame angle with 1/4" Phillips flat head machine screws, and flanged lock nuts where possible. The back edge shall be attached to the horizontal frame tube with 1/4" Phillips flat head type "F" thread forming screws. Spacing of fasteners shall not exceed 24" on center. All exposed fastener heads shall be painted to match caprail color.
3. The caprail shall have smooth and radiused edges on the front and back edges.
4. Caprail to be red or blue in color.
5. Where acrylic shielding is specified, the caprail shall be routed 5/16" deep to accept shielding. The use of an aluminum sill channels, in lieu of routing shall be unacceptable.

E. Kickplate:

1. Kickplate shall be constructed of 1/2" thick, 8" high, high density polyethylene, and shall surround the entire rink.
2. The top edge of the kickplate shall be beveled.
3. The 1/2" kickplate shall be attached to the bottom of the dasher panel with 1/4" Phillips flat head machine screws, and flanged lock nuts where possible. All fastener heads used to attach kickplate to dasher panels shall be painted to match the kickplate color.
4. Red center line and blue lines shall be flush or integral with the kickplate.
5. Kickplate shall be yellow, light blue, or NHL gold in color.

F. Access and Players' Gates:

1. Access gates shall be 3'-0" wide and/or 4'-0" wide in quantity as specified in the drawings.
2. Double door access gates shall be 5'-0" wide or 6'-0" wide in quantity as specified in the drawings.
3. Players' and penalty gates shall be 2'-6" wide in quantity as specified in the drawings.

4. Gates shall be built into 8' dasher panels and shall be left or right hand swing as specified in the drawings.
5. Gate panels shall be constructed of the same materials and methods as the demountable frame panels, except the end plates are made of preformed 1/8" thick steel channels.
6. The double bar gate latch mechanism shall be designed so the gate can be closed and latched in a single movement. The gate handle shall be designed so players wearing hockey gloves can easily open the gates. Latches shall be of solid welded steel construction. Single bar, or spring loaded bolt latches shall be unacceptable.
7. Hinges for all gates shall be of steel construction and bolted to the frame for easy maintenance, two per gate door. Hinges to have 1/4" horizontal, and 1/2" vertical adjustment. Hinges shall have 1/2" internal steel ball bearing, oilite bushings and grease fittings for lubrication purposes. Hinges shall be designed so gates can be lifted off and removed. Common bracket hinges, or hinges welded to the frame shall be unacceptable.
8. All single swing access and player gates shall have 3/8" x 3-1/2" x 3" door stops welded to the frame gate. All gate with shielding shall be equipped with push button releases located on the caprail on the ice side of the shielding. Latches shall be designed so players wearing hockey gloves can easily open the gates.
9. Gates with shielding shall be made to accept shield mounting hardware.
10. Thresholds for access gates shall be approximately 3" above floor level.
11. Thresholds for players' and penalty box gates shall be 9" above floor level.

#### G. Equipment Gate:

1. Equipment gate shall be a double leaf gate with a 10'-0" opening. Each leaf shall be 5' wide.
2. Gate panels shall be constructed of the same materials and methods as the demountable frame panels, except the end plates are made of preformed 3/16" thick steel channels.
3. Hinges for equipment gate shall be of steel construction and bolted to the frame for easy maintenance, two per gate door. Hinges to have 1/4" horizontal, and 1/2" vertical adjustment. Hinges shall have 1/2" internal steel ball bearing, oilite bushings and grease fittings for lubrication purposes. Hinges shall be designed so gates can be lifted off and removed. Common bracket hinges, or hinges welded to the frame shall be unacceptable.
4. Equipment gate latch shall be the sliding bar type, constructed of 2" x 2" x .12" square tubing for structural rigidity, with a large grasp handle. Slide bars fabricated from round tube shall be unacceptable.

5. Each equipment gate shall lock into the steel threshold with 5/8" x 12" long cane bolts.
6. Each equipment gate shall be equipped with a sturdy, gas compensated, spring loaded, adjustable caster. For safety and component protection, the spring shall be totally enclosed in the caster mechanism, casters with exposed springs shall be unacceptable.
7. Threshold for equipment gate shall be 2" above floor level. It shall be constructed of a 1-1/4" steel angle framework with a 3/4" polyethylene cover.

H. Hardware:

1. All steel hardware used during the construction or installation of the system shall be galvanized or zinc plated for rust resistance.
2. Hardware shall include hinges, latches, nuts, bolts, washers, and miscellaneous fastening devices necessary to complete installation.

I. Thresholds:

1. Access and players' gates shall have 1" thick high molecular weight polyethylene, replaceable thresholds.

J. Spectator Shielding:

1. Shielding shall be clear float tempered glass, 5/8" thick on the ends and corner radii of the rink and 1/2" thick at the sides of the rink. Tempered glass shielding shall have the top two corners clipped and all edges ground to minimize breakage and for safety in handling. Seamed edges are not acceptable.
2. All shielding shall be 48" wide except those at gates, or similar openings in the dasherboards.
3. Height of spectator shielding shall be 6' above the dasher caprail at the ends and corners radii of the rink.
4. Height of spectator shielding shall be 4' above the dasher caprail at the sides of the rink.
5. Spectator shielding shall not be installed in front of players boxes
6. Spectator shielding shall be installed in front of penalty and scorekeepers boxes at a height of 4' above the dasher caprail.
7. Spectator shielding shall be installed behind and between box areas at a height of 4' above the dasher caprail.
8. A 3" diameter speaker hole shall be provided in shielding in front of scorer's box, 5' above the ice surface.

9. Specially designed vinyl covered foam safety pads shall be placed at all corners of spectator shielding inside rink to prevent injury. Color of padding shall match the caprail.
10. All spectator shielding shall be mounted in aluminum support posts unless otherwise specified.

K. Spectator Shielding Supports:

1. Spectator shield mounting supports shall be rectangular in design and of one piece construction. Two piece round support post with easily removeable faceplate is also available. Shield mounting supports shall be made of solid architectural grade aluminum (alloy #6061-T6). Supports shall be installed through a snug fitting contoured opening in the finished caprail and secured at the bottom with a support mounting bracket at the center horizontal angle of the dasher panel. Installation of shielding panels to be from the rink side with the vertical support posts within the dimensions of the panels. No protruding anchors shall extend behind the boards. Total width of supports shall be 2-1/4".
2. Spectator shield mounting supports shall be furnished with PVC gasketing to secure and cushion the shield panels.
3. Mounting hardware is to be removable so that the spectator shielding can be removed without demounting the dasher system. The round shield supports shall be attached at the center angle with clip angle fitting that extends a minimum of 1-1/4" into the support post.
4. Gate shield mounting hardware shall be made of architectural grade extruded aluminum (alloy #6061-T6). It shall be of one piece design to allow the operation of the gate sections.
5. The height of the supports above the caprail shall be 1" below the height of the shielding. Posts that allow more than a 1" glass reveal shall not be acceptable.
6. The spectator shield supports shall be nominally 48" apart except at gates or similar openings in the dasherboards.

L. Postless Shielding System

1. A 3" deep continuous aluminum track shall be built within the dasherboard panel to secure the glass. The track shall be designed so the glass panels can be easily installed and removed. The use of poly or plastic channels to hold the glass panels are unacceptable.
2. The bottom 3-1/2" of tempered glass shall be protected by a 3-1/2" "U" shaped poly cushion lining the shielding track support. Cushion of less than 3-1/2" are not acceptable.

3. A spring loaded polycarbonate clip, of one piece construction, shall be installed at the top of each glass termination connecting each glass panel to the next. Glass spacers shall also be included in the horizontal channel.
4. Spacing of each glass panel shall not exceed 3/8"

L. Boxes:

1. Boxes shall consist of two players boxes 30' in length, two penalty boxes 6' of length, and one official box 8' long. Box shall be 5' deep.
2. Incorporated into the players box areas shall be a shelf for the storage of water bottles, etc. This shelf shall be 1/2" white polyethylene identical in color of the 1/2" white facing material and be constructed as detailed on the drawings. The shelf shall be located between the players gates.
3. Backer panels of 3/8" high density polyethylene panels shall be attached to the back side of the dasherboard framework inside the players' boxes. Color shall be identical to that of the dasher facing panels. Backer panels shall extend the full height of the dasher, except at the shelf locations, where panels shall terminate at the height shown on the drawings. Panels shall be fastened to the framework using 1/4" Phillips flat head thread cutting screws.
4. One 1" x 20" x 8'-0" polyethylene score's table shall be installed in the officials box as shown on the drawings. The color of the table shall be white.

M. Wood Elevated Flooring:

1. Elevated flooring shall be furnished for players, officials and penalty box areas.
2. Flooring shall be constructed of 2" x 6" treated lumber set 16" on center. Flooring shall be 1" less than both the length and width of the box areas.
3. The wood framework shall be covered with 3/4" exterior grade plywood, and covered with 1/2" black cut resistant rubber flooring.
4. A two tier framework shall be constructed for a coaches walk behind the benches. The coaches walkway shall be elevated 7" above the standard floor height and shall be 18" deep. The construction of the walkway shall be identical to the elevated flooring in the box areas.

N. Benches:

1. The benches used in the players and penalty boxes shall be constructed of 3/4" thick by 9-1/2" wide smooth high density polyethylene with a steel reinforced base. Color must match the caprail material. Color shall match the caprail.
2. The players box benches shall be 28' in length. The penalty box benches shall be 6' in length.



2. The top edges of the benches will have a 3/8" radius and a 1/4" radius on the bottom edges.
3. The benches shall be supported using supports constructed of 8" x 8" x 1/4" steel plates welded to 2" x 2" x 11 ga steel square tubing. The bench supports shall be mitered 15 degrees toward the front of the boxes to prevent the players from hitting the supports with their skates.
4. The supports will not exceed 5'-0" on center and will be fastened to the bench material with 5/16" flat head bolts and 5/16" lock nuts.

O. Backer Panel:

1. 3/8" high density polyethylene panels shall be attached to the back side the dasherboard framework around the entire perimeter of the rink, including all access and players gates.
2. Backer panels will be fastened using 1/4" Phillips flat head thread forming screws. Spacing of fasteners shall not exceed 24" on center. All exposed fastener heads shall be painted to match backer panel color.
3. Standard colors of backer sheets are white.

P. Netting:

1. Protective netting shall be black nylon mesh, 1-3/4" mesh, 420 lb. break strength. A nylon sewn border with grommets shall be surround the entire perimeter of netting.
2. Netting shall be 12' in height and be installed around the entire perimeter of rink, except in front of boxes. Netting shall be fastened to the shielding supports in such a way to prevent pucks from falling outside the rink area.

**2.03 ADDITIONAL OPTIONS** (may increase or decrease total bid)

A. Acrylic Spectator Shielding:

1. Spectator shielding shall be cell cast acrylic sheeting identical to Cyros GP Acrylite acrylic sheets. All acrylic sheets shall be no less than .470" thick, clear and colorless. Acrylic shielding shall have top corners chamfered and the two ends and top edges beveled.
2. All shielding shall be 48" wide except those at gates, or similar openings in the dasherboards.
3. Height of spectator shielding shall be 6' above the dasher caprail at the ends and corner radii of the rink.
4. Height of spectator shielding shall be 4' above the dasher caprail at the sides of the rink.

5. Spectator shielding shall be installed behind and along side, but not in front of players boxes at a height of 4' above the dasher caprail.
6. Spectator shielding shall be installed behind, along side, and in front of penalty boxes at a height of 4' above the dasher caprail.
7. Spectator shielding shall be installed behind, along side, and in front of officials box at a height of 4' above the dasher caprail.
8. Transition spectator shielding shall be installed to connect shields of differing heights.
9. All spectator shielding shall be mounted in aluminum support posts.

B. Aluminum Elevated Flooring:

1. Elevated flooring shall be furnished for players, officials and penalty box areas.
2. Flooring shall be constructed of structural aluminum framework. Flooring shall be 6-7/8" high and 1" less than both the length and width of the box areas. All flooring sections shall have adjustable bases welded to the bottom of the framework to allow the elevated flooring to be leveled.
3. The steel framework shall be covered with 3/4" treated plywood, screwed into place and covered with 1/2" black rubber matting.
4. A two tier framework shall be constructed for a coaches walk behind the benches. The coaches walkway shall be elevated 7" above the standard floor height and shall be 18" deep. The construction of the walkway shall be identical to the elevated flooring in the box areas.

C. Panel Storage Carts:

1. Panel storage carts shall be constructed of a painted steel framework. Each cart will contain two rigid and two swivel type caster wheels.
2. Each cart shall be 50" wide x 98" long. The carts shall have removable side supports used to keep panel in line.
3. Total capacity of each cart is 3000 pounds.

D. Spectator Shielding and Support Storage Cart:

1. Spectator shielding and support storage carts shall be constructed of a painted steel framework. Each cart will contain two rigid and two swivel type caster wheels.
2. The carts shall be an "A" frame design with sufficient space to store 50 sheets of shielding. The carts shall be covered with high density polyethylene so that no metal comes in contact with the shield panels.

3. Total capacity of each cart is 4000 pounds.

E. Polyethylene Ice Retainer:

1. A 1" x 7" natural white high density polyethylene ice retainer shall be installed under the entire dasherboard system.
2. The ice retainer shall be installed using the same 5/8" anchors and bolts that secure the dasher panels to the floor.

F. Steel Ice Retainer:

1. A 6" x 2" hot dip galvanized steel ice retainer shall be installed under the entire dasherboard system. High density polyethylene shall be attached to the rink side of the ice retainer. Color shall match kickplate.
2. The ice retainer shall be fastened to the floor using separate 5/8" anchors and bolts. The ice dam shall incorporate threaded 5/8" inserts for attaching the dasherboard system.

G. Portable Goal Judges Boxes:

1. Goal judges box shall be constructed of an aluminum framework. Each cart will contain two rigid and two swivel locking type caster wheels.
2. Boxes shall be approximately 3' x 3' x 6'-6" high with 42" high polyethylene facing around the base with 1/2" acrylic shielding on these sides and top.

H. Sound Deadening Insulation: (used with backer panels only)

1. 6" fiberglass insulation will be inserted into the dasherboard framing.
2. 1" thick extruded rigid board insulation shall be fit to the inside width at the base of the board to prevent water from contacting the fiberglass insulation.

## **PART 3 - EXECUTION**

### **3.01 INSTALLATION**

- A. Manufacturer shall construct, fabricate and deliver all materials to the job site per plans and specifications under the direct supervision of a licensed professional engineer. All materials shall be installed to result in a complete steel frame dasher system with all boards and shielding to be straight and true in line and properly braced. All installation work shall be completed by a factory installation crew.
- B. Installation shall be in strict conformance with manufactures requirements and instructions. Erect units rigid, straight, level, plumb, and true with horizontal and vertical lines level, and securely anchored in place. Whether shown on the drawings or not, this contractor shall

provide all accessory materials for a complete, finished installation. No defective, scratches, marred or otherwise equipment and materials shall be installed.

- C. Put all items of equipment and systems through at least five complete cycles of operation, verifying that each item is properly installed and properly operating, and making required adjustments to achieve optimum operation.

### **3.03 CLEANING**

- A. Clean all surfaces removing all evidence of dirt, packaging materials and protective wrappings.
- B. Replace all damaged materials including scratched glass.

END OF SECTION