

SECTION 099611 – HIGH PERFORMANCE COATINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Traffic coating to be applied to existing horizontal concrete floor surfaces at leading edge of stair risers.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include manufacturer's technical data, installation instructions, and recommendations for each coating component required.
- B. Samples for Initial Selection: For each type of exposed finish required.
- C. Samples for Verification: For each coating system required and for each color and texture specified, 6 inches square, applied to a rigid backing by Installer for this Project.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Material Certificates: For each coating component.
- C. Material Test Reports: For each coating system, by a qualified testing agency.
- D. Field quality-control reports.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For coating to include in maintenance manuals.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.
 - 1. Engage an installer who is certified in writing by coating manufacturer as qualified to apply coating systems indicated.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original packages and containers, with seals unbroken, bearing manufacturer's labels indicating brand name and directions for storage and mixing with other components.

1.8 FIELD CONDITIONS

- A. Environmental Limitations: Comply with coating manufacturer's written instructions for substrate temperature, ambient temperature, moisture, ventilation, and other conditions affecting coating installation.
- B. Lighting: Provide permanent lighting or, if permanent lighting is not in place, simulate permanent lighting conditions during coating installation.
- C. Close spaces to traffic during coating installation and for 24 hours after installation unless manufacturer recommends a longer period.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Flammability: Self-extinguishing in accordance with ASTM D635.

2.2 EPOXY COATING

- A. Epoxy Coating: Fast cure epoxy mastic.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - a. Basis of Design: Sherwin-Williams Coatings.
- B. Source Limitations: Obtain primary coating materials, including primers, resins, hardening agents, grouting coats, and topcoats, from single source from single manufacturer. Obtain secondary materials, including patching and fill material, joint sealant, and repair materials, of type and from manufacturer recommended in writing by manufacturer of primary materials.
- C. System Characteristics:
 - 1. Color: Safety Yellow

2. Wearing Surface: Textured for slip resistance.
 3. Overall System Thickness: 10-20 mils.
- D. Patching and Fill Material: Approved by epoxy coating manufacturer and recommended in writing by manufacturer for installation indicated.
- E. Body Coats:
1. Products:
 - a. Sherwin-Williams: Macropoxy 646
- F. Non-slip aggregate:
1. Product:
 - a. Basis of Design: SharkGrip Slip Resistant Additive.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of coating systems.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Prepare and clean substrates in accordance with coating manufacturer's written instructions for substrate indicated to ensure adhesion.
- B. Concrete Substrates: Provide sound concrete surfaces free of laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants incompatible with epoxy coating.
- C. Patching and Filling: Use patching and fill material to fill holes and depressions in substrates in accordance with manufacturer's written instructions.
- D. Epoxy: Prepare materials in accordance with coating manufacturer's written instructions.

3.3 INSTALLATION

- A. Apply components of epoxy coating system in accordance with manufacturer's written instructions to produce a uniform, monolithic wearing surface of thickness specified.

1. Coordinate installation of components to provide optimum adhesion of epoxy coating system to substrate, and optimum intercoat adhesion.
 2. Cure epoxy flooring components in accordance with manufacturer's written instructions. Prevent contamination during installation and curing processes.
- B. Body Coats: Apply body coats in thickness specified for epoxy coating system.
- C. Topcoats: Apply topcoats in number indicated for the coating system specified, at spreading rates recommended in writing by manufacturer, and to produce wearing surface specified.

3.4 FIELD QUALITY CONTROL

- A. Material Sampling: Owner may, at any time and any number of times during the installation, require material samples for testing for compliance with requirements.
1. Owner will engage an independent testing agency to take samples of materials being used. Material samples will be taken, identified, sealed, and certified in presence of Contractor.
 2. Testing agency will test samples for compliance with requirements, using applicable referenced testing procedures or, if not referenced, using testing procedures listed in manufacturer's product data.
 3. If test results show applied materials do not comply with specified requirements, pay for testing, remove noncomplying materials, prepare surfaces coated with unacceptable materials, and reinstall flooring materials to comply with requirements.

3.5 PROTECTION

- A. Protect coating systems from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by coating manufacturer.

END OF SECTION 099611

SECTION 126100 - FIXED AUDIENCE SEATING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Fixed upholstered chairs with self-rising seat mechanisms, aisle and intermediate aluminum standards. The replacement/repair shall constitute a one for one in each section to maintain existing configurations.
- B. Typical Upper Bowl applications include the complete replacement of following:
 - a. Riser mounted chairs.
 - b. Freestanding stackable chairs.
 - c. Refer to Upper-Level Seating Plan for seat counts and locations.
- C. Schedule: Replace existing seating by section. Work shall be phased to accommodate arena events at full capacity. Seat removal, preparation and installation shall occur without disruption of events or voids in designated seat location. For minor voids in seating sections, provide stacking chairs of matching style by manufacturer. Provide folding seating for existing portable folding chair locations.

1.2 REFERENCES

- A. Reference Standards
 - 1. American Welding society (AWS):
 - 2. AWS D1.1 Structural Welding Code - Steel.
 - 3. AWS D1.3 Structural Welding Code - Sheet Steel.
 - 4. American Institute of Steel Construction (AISC):
 - 5. AISC - Design of Hot Rolled Steel Structural Members.
 - 6. American National Standards Institute (ANSI).
 - a. A117.1-2009 Accessible and Usable Buildings and Facilities
 - 7. American Iron & Steel Institute (AISI):
 - 8. AISI - Design Cold Formed Steel Structural Members.
 - 9. Aluminum Association (AA):
 - 10. AA - Aluminum Structures, Construction Manual Series.
 - 11. American Society for Testing Materials (ASTM)
 - 12. ASTM - Standard Specification for Properties of Materials.
 - 13. National Forest Products Association (NFPA):
 - 14. NFPA - National Design Specification for Wood Construction.
 - 15. National Bureau of Standards/Products Standard (NBS/PS):
 - 16. PS1 - Construction and Industrial Plywood.

1.3 STRUCTURAL PERFORMANCE

- A. Engineer, fabricate and install fixed audience seating to the following structural loads without exceeding allowable design working stresses of materials involved, including anchors and

connection. Apply each load to produce maximum stress in each respective component of each audience seat unit.

1. Seat shall be semi-cantilevered, self-centering, automatic three-quarter (3/4) lift with over center retract feature, for ease of passage and janitorial access.
2. Seat shall be tested and professionally certified through an independent testing laboratory to support and withstand an evenly distributed 600 lb. static load without failure or irregularities that would impair usefulness.
3. Self-lifting seat shall be tested and professionally certified through an independent testing laboratory to withstand 350,000 operating cycles without failure of seat mechanism or measurable component wear.
4. Seat shall be tested and professionally certified to withstand 10,000 impacts of a 40 lb. sandbag dropped on the center of the seat from each of the following heights: 6", 8", 10", and 12". The rate of impacts shall be approximately 18 per minute with the total quantity of impacts equaling 40,000.
5. Back shall withstand an evenly distributed front or rear static load of 450 lbs.
6. Back shall be tested and professionally certified to withstand, without failure, 40,000 swinging impacts each to the front and rear of the back by means of two opposing 40 lb. sandbags. The sandbags shall be moved horizontally and equally for 10,000 cycles each at the following distances of 6", 8", 10", and 12" at a rate of 35 cycles per minute.
7. Back shall withstand, without failure, an evenly distributed Horizontal Traverse Static Load of 200 lbs. The load shall be applied to the top of the back at a 45-degree angle to the row of seats.
8. Armrests shall be tested and professionally certified to withstand, without failure, a 200 lb. static load applied both perpendicular to and vertically down on the arm.

B. FIRE RESISTANCE

1. Materials (Flammability) shall satisfy applicable test, codes, standards, or requirements as follows:
 - a. Polypropylene shall have a burn rate of 1 inch or less per ASTM 635.
 - b. Upholstery materials shall meet requirements as set forth in the state of California Bureau of Home Furnishings Technical Bulletin 117.
 - c. Fire-performance Characteristics of Seat Padding: Provide seating that complies with test method: California Technical Bulletin 117
 - d. Cushioning and padding shall be self-extinguishing as defined in the requirements as set forth in the State of California Bureau of Home Furnishings Technical Bulletin 117.

1.4 SUBMITTALS

- A. Project Data: Manufacturer's product data for each system.
- B. Shop Drawings: Indicate fixed upholstered chair seating layout. Show all equipment to be furnished. Provide plan and seating count for each section.
- C. Samples: Seat materials and color finish as selected by Architect from manufacturers standard color finishes. Chair Unit: Full-size unit of each type.
 1. Molded Plastic: Manufacturer's standard-size unit, not less than 3 inches square.
 2. Plastic Laminate: Manufacturer's standard-size unit, not less than 3 inches square.
 3. Baked-on Coating Finishes: Manufacturer's standard-size unit, not less than 3 inches square.

4. Aluminum Finishes: Manufacturer's standard-size unit, not less than 3 inches square.
 5. Wood and Plywood Materials and Finishes: Manufacturer's standard-size unit, not less than 3 inches square.
 6. Upholstery Fabric: Full width by 36-inch-long section of fabric from dye lot to be used for the Work, with specified treatments applied. Show complete pattern repeat. Mark top and face of fabric.
 7. Row-Letter and Chair-Number Plates: Full-size units with letters and numbers marked.
 8. Exposed Fasteners: Full-size units of each type.
 9. Full-size samples of chair units will be returned to Contractor for use in Project.
- D. Project Data: Manufacturer's product data for each system.
1. Include the following:
 - a. Project list: Ten (10) seating projects of similar size, complexity and in service for at least five (5) years.
 - b. Deviations: List of deviations from these project specifications.
- E. Installer Qualifications: Installer qualifications indicating capability, experience, and manufacturer certification.
- F. Engineer Qualifications: Certification by a professional engineer registered in the state of manufacturer that the equipment to be supplied meets or exceeds the design criteria of this specification.
- G. Owner's Manuals: Provide Owner's maintenance manual and demonstrate operating procedures.
- H. Warranty: Manufacturers standard five-year warranty documents.
- I. Welding Standards & Qualification: Comply with AWS D1.1 Structural Welding Code - Steel and AWS D1.3 Structural Welding Code - Sheet Steel.
- J. Manufacturer Qualifications: Manufacturer who has 10 years of experience manufacturing spectator seating equipment.
- K. Installer Qualifications: Engage experienced Installer who has specialized in installation of audience seating similar to types required for this project and who is acceptable to, or certified by, fixed upholstered chair seating manufacturer.
- L. Engineer Qualifications: Engage professional licensed engineer experienced in providing engineering services of the kind indicated that have resulted in the successful installation of audience seating similar in material, design, fabrication, and extent to those types indicated for this project.
- 1.5 PROJECT CONDITIONS
- A. Field Measurements: Coordinate actual dimensions of construction affecting fixed upholstered chair seating installation by accurate field measurements before fabrication. Seat width is typically 20" with 19" or 21" minor runs to accommodate aisle limits. Show recorded measurements on final shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid delay of Work.

1.6 WARRANTY

- A. Manufacturer's Product Warranty: Submit manufacturer's standard warranty form for fixed upholstered chairs. This warranty is in addition to, and not a limitation of other rights Owner may have under Contract Documents.
- B. Warranty Period: Five years from Date of Substantial Completion.
- C. Beneficiary: Issue warranty in legal name of project Owner.
- D. Warranty Acceptance: Owner is sole authority who will determine acceptance of warranty documents.

1.7 MAINTENANCE AND OPERATION

- A. Instructions: An owner's manual shall be transmitted to the Owner by the manufacturer of the seating or his representative.
- B. Service: Maintenance and operation of the seating system shall be the responsibility of the Owner or his duly authorized representative, and shall include the following:
- C. Only attachments specifically approved by the manufacturer for the specific installation shall be attached to the seating.
- D. Periodic annual inspections and required maintenance of each seating system shall be performed according to the Owner's Manual to assure safe conditions.
- E. Material Certificates: For each type of flame-retardant treatment of upholstery fabric.
- F. Field quality-control reports.
- G. Sample Warranty: For special warranty.

1.8 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site

1.9 EXTRA STOCK

- A. Furnish extra materials, from the same production run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Chair Seats and Backs: Twenty for each type and size of cushion.
 - 2. Upholstered, Slip-on Cushions: Twenty for each type and size of cushion.
 - 3. Fabric: 5 percent on the bolt of quantity installed for each type.
 - 4. Armrests: Twenty for each type of armrest.
 - 5. Chair Seat Hinges: Twenty (20).
 - 6. Anchorage transition kits: plates and associated fasteners: Eighty (80).
 - 7. Temporary steel stanchion floor supports: One hundred (100).

1.10 MOCKUPS

- A. Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation.
 - 1. Location of mock-up as selected by Owner as Architect.
 - 2. Build mockups of two typical seats or a typical two-seat unit including finishes and accessories:
 - 3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 - 4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

- A. Obtain each type of seating required, including accessories and mounting components, from single source from single manufacturer.
 - 1. Upholstery Fabric: Obtain fabric of a single dye lot for each color and pattern of fabric required.

2.2 MANUFACTURER

- A. Basis of Design: Hussey Seating Company, U.S.A., 38 Dyer St Ext., North Berwick, Maine, 03906. Telephone:(207) 676-2271; Fax: (207) 676-9690. Email: info@husseyseating.com
 - 1. Contact: Todd Vigil, email: tvigil@husseyseating.com; cell: (207) 251-7187
 - 2. Product: Hussey Quattro Chair System.
 - 3. Model: Quattro Collection.
 - 4. Series: Classic.
 - 5. Back Foam: 2".
 - 6. Seat Type: Standard upholstery.
 - 7. Armrest Type: Plastic, Metro Graphite
 - 8. Standards: Cast aluminum (steel standards are not acceptable), with end row letter plate.
 - 9. Frame Color: Graphite
 - 10. Chair Mount: Riser Mount.
 - 11. End Panels: None.
- B. Product Description
 - 1. Number of Chairs and sizes: As indicated.
 - 2. Number of Wheelchair Locations: None.
 - 3. Number of ADA Easy Access End Standards: None.
 - 4. Row Spacing: 2'-8" Common.
 - 5. Rise: Match Existing.
 - 6. Fabric: Sidestep Black
 - 7. Cupholders: Armrest.

2.4 FABRICATION

- A. Upholstered Seats:
- B. The seat assembly shall consist of a padded and upholstered top surface, a polypropylene bottom shell with dual contours, and a dual sprung lifting mechanism. Seat shall have the ability to achieve a full fold position when rearward pressure is applied.
- C. Upholstery Pad: The upholstered seat topper shall consist of a 5/8" thick formed ply form base with contoured molded polyurethane foam padding and fabric upholstered cover. Seat padding shall be properly contoured to support the body without causing discomfort. The upholstered seat cover shall exhibit a high degree of tailoring and will be affixed to the base with upholstery staples.
- D. Seat Mechanism: Seat lifting mechanism shall use lubricated lifting springs to provide whisper quiet fail-safe operation. The seat structure shall rotate on a 3/4" spanner bar to assure shaft alignment and eliminate binding due to irregular floor conditions. Seats shall be certified to withstand 350,000 lifting cycles and a 600lb static load without failure.
- E. Standard Bottom Cover: Seat shell/bottom shall be constructed of polypropylene plastic. The cover shall protect the mechanical parts of the lifting hinge and upholstered seat topper.
- F. Seat foam: Standard Plush.
- G. Classic Series Back (Plastic Outer Back Cover)
 - 1. The outer back panel shall be constructed of injection molded polypropylene plastic. The panel shall be no less than 27" in length and conceal the rear and sides of the upholstered inner panel. The panel shall extend below the rear of the seat to protect the chair occupant's back.
 - 2. The inner upholstered panel shall be 5/8" 11 ply thick-formed hardwood with an ergonomically engineered contour. The wings for attachment of chair back to standard shall be not less than 14 gage and will be attached via concealed fasteners. Wings shall position the chair back at one of three positions: 15, 18, or 21 degrees. There shall be no exposed fasteners above the seat. Chair back upholstery shall exhibit a high degree of workmanship and customization.
 - a. Soft Square - 33": Overall back height is 33" above the floor allowing proper shoulder support of the chair occupant. The back surface shall be contoured to facilitate proper posture of a seated individual.
- H. Back Foam. General Seating shall be 2" cut,
- I. Cast Aluminum Standards: Standards shall be die cast Aluminum AA380 grade.
- J. Standards shall be riser attached.
- K. Cast Aluminum Standards shall be an integral aesthetic part of the chair's appearance and do not require the use of end panels.
- L. Seat hinges shall be fully contained within the seat pan and fitted with a pair of independent nylon bushings.
- M. Each of the independent seat hinges shall be fitted with double acting; self-centering, pre-loaded coiled seat return spring.

- N. Seat hinge and spring installation shall be designed not to require periodic adjustment or lubrication. Seat hinges shall be fully contained within the seat pan and fitted with a pair of independent nylon bushings. Each of the independent seat hinges shall be fitted with double acting; self-centering, pre-loaded coiled seat return spring. Seat hinge and spring installation shall be designed not to require periodic adjustment or lubrication.
- O. Finish for Steel & Aluminum Components: (Indoor) Material shall be pre-treated in an iron phosphate wash system prior to finish application. Finish shall be a specially blended polyester T.G.I.C./Epoxy powder coating with a minimum dry film thickness of 1.5 mils.
- P. Injection molded polypropylene or nylon: Shall be pigmented, in one of manufacturers standard colors and have a textured surface.
- Q. Fabric: Upholstery material shall be 100% polyester with one of manufacturer's standard fabric offerings as selected by Architect from manufacturer's standard full range of fabrics.
- R. Color: As selected by Architect from manufacturer's standard full range of colors.
- S. Armrests, Injection Molded Plastic: Armrests shall be of injection molded, textured polypropylene. Armrest to be secured to standard with concealed fasteners.
- T. Armrest to be secured to standard with concealed fasteners.

2.5 ANCHORAGE

- A. Concrete Riser Attachment:
 - 1. See attachment details on A-501.
 - 2. Threaded rods shall be of approved type with zinc-plate finish or made of stainless steel to suit environmental conditions.
 - 3. Acrylic Adhesive shall be in conformance with ASTM Type IV, Grade 3, and covered by ICBO evaluation.
 - 4. Stanchion to be placed on the bolts, stanchions to be permanently secured with a flat washer, lock washer and nut.

PART 3.0 EXECUTION

3.1 INSTALLATION

- A. Verification of Conditions: Verify areas to receive fixed upholstered chair seating are free of impediments interfering with installation and condition of installation substrates are acceptable to receive audience seats in accordance with seating manufacturer's recommendations. Do not commence installation until conditions are satisfactory.
- B. Surface clean the existing floor/riser surface to remove beverage and food grime. Minimize the use of high-pressure water to prohibit water damage of suites and concourse below.
- C. Alternate anchorage positions may be used where an existing anchorage condition is not conducive to meet structural criteria. Provide a steel offset plate meeting structural criteria to transition from stanchion anchor to concrete anchor.

- D. Perform the following tests and inspections with the assistance of a factory-authorized service representative.
 - 1. Inspect components, assemblies, and equipment, including connections, to verify proper, complete, and sturdy installation in accordance with manufacturer's written instructions and product specifications.
 - 2. Verify that self-rising seats return to uniform at-rest, raised position.
- E. Fixed audience seating will be considered defective if it does not pass tests and inspections.
- F. Prepare test and inspection reports.

2.3 ADJUSTING

- A. Adjust chair backs so that they are at required angles and aligned with each other in uniform rows.
- B. Adjust hardware and moving parts to function smoothly so they operate easily. Lubricate bearings and sliding parts as recommended in writing by manufacturer.
- C. Adjust self-rising seat mechanisms so seats in each row are aligned when in upright position.
- D. Repair minor abrasions and imperfections in finishes with coating that matches factory-applied finish.
- E. Replace damaged and malfunctioning components that cannot be acceptably repaired.
- F. Replace upholstery fabric damaged during installation or work of other trades.

END OF SECTION 126100