SECTION 096766 - FLUID-APPLIED ATHLETIC FLOORING

Revise this Section by deleting and inserting text to meet Project-specific requirements.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

1. GENERAL
	* + 1. RELATED DOCUMENTS
				1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
			2. SUMMARY
				1. Section Includes:

Polyurethane flooring, fluid applied directly on substrates.

Polyurethane flooring, fluid applied over base mats.

* + - * 1. Related Requirements:

Retain subparagraphs below to cross-reference requirements Contractor might expect to find in this Section but are specified in other Sections.

Section 096513 "Resilient Base and Accessories" for wall base and accessories installed with fluid-applied athletic flooring.

Section 096723 "Resinous Flooring" for polymer floor covering systems intended for other uses.

* + - 1. COORDINATION

Retain this article if Project contains floor inserts for volleyball post standards or other gymnasium equipment. Floor inserts are specified in Section 116623 "Gymnasium Equipment."

* + - * 1. Coordinate layout and installation of flooring with floor inserts for gymnasium equipment.
			1. SUBMITTALS
				1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
				2. Manufacturer’s installation instructions shall be provided along with product data.
				3. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
				4. Product Data: For each type of product.
				5. Sustainable Design Submittals:
				6. Shop Drawings: For flooring. Show installation details including layout, colors, widths, and dimensions of game lines and markers and locations of athletic equipment floor inserts.

Retain "Samples" paragraph below for single-stage Samples, with a subordinate list if applicable. Retain "Samples for Initial Selection" and "Samples for Verification" paragraphs for two-stage Samples.

* + - * 1. Samples: For each color, gloss, and texture of floor required, 12 inches square, applied to a rigid backing.[**Include Sample sets showing the game-line- and marker-paint colors applied to the flooring.**]
				2. Samples for Initial Selection: Manufacturer's color charts showing colors and glosses available for flooring[**and game-line and marker paints**].
				3. Samples for Verification: For each color, gloss, and texture of flooring required, 12 inches square, applied to a rigid backing.[**Include Sample sets showing the game-line- and marker-paint colors applied to the flooring.**]

Coordinate "Qualification Data" paragraph below with qualification requirements in "Quality Assurance" Article.

* + - * 1. Qualification Data: For Installer.
			1. CLOSEOUT SUBMITTALS
				1. Maintenance Data: For fluid-applied athletic flooring to include in maintenance manuals.
			2. QUALITY ASSURANCE
				1. Installer Qualifications: An installer who is approved, trained, or certified by fluid-applied athletic flooring manufacturer.
			3. FIELD CONDITIONS

For work in occupied buildings, consider inserting additional ventilation requirements in "Environmental Limitations" paragraph below.

* + - * 1. Environmental Limitations: Comply with flooring manufacturer's written instructions for substrate temperature, ambient temperature, humidity, ventilation, and other conditions affecting flooring application.

Do not apply flooring until spaces are enclosed and weatherproof; wet-work in spaces is complete and dry; and overhead work, including installing mechanical systems, lighting, and athletic equipment, is complete.

Maintain temperatures during installation within range recommended in writing by manufacturer, but not less than 70 deg F or more than 95 deg F, in spaces to receive flooring 48 hours before installation, during installation, and 48 hours after installation unless longer period is recommended in writing by manufacturer.

After installation period, maintain temperatures within range recommended in writing by manufacturer, but not less than 55 deg F or more than 95 deg F.

Close spaces to traffic during flooring installation.

1. PRODUCTS

Manufacturers and products listed in SpecAgent and Masterworks Paragraph Builder are neither recommended nor endorsed by the AIA or Deltek. Before inserting names, verify that manufacturers and products listed there comply with requirements retained or revised in descriptions and are both available and suitable for the intended applications.

* + - 1. DIRECT-APPLIED FLOORING <**Insert drawing designation**>

Copy this article and re-edit for each product.

Insert drawing designation. Use these designations on Drawings to identify each product.

* + - * 1. [Manufacturers:](http://www.specagent.com/Lookup?ulid=11777) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

Athletic Polymer Systems, Inc.

Benyon Sports Surfaces; a Tarkett Sports Company.

Surface America, Inc.

Or equal.

* + - * 1. Description: Fluid-applied athletic flooring system consisting of primer and polyurethane body and topcoats applied directly to substrate.
				2. Materials:

Primer: Manufacturer's primer recommended for substrate indicated.

Body Coat(s): Two-component, self-leveling, pigmented, polyurethane containing no rubber fillers and no mercury.

For a descriptive specification, insert properties of body coat(s). Properties and test methods vary among manufacturers and products.

Topcoat (Finish Coat): Manufacturer's standard pigmented polyurethane.

* + - * 1. Finishes:

If retaining second option in "Color" subparagraph below, insert colors with manufacturers' product designations or in a separate schedule.

Color: [**As selected by Director’s Representative from manufacturer's full range**] [**As indicated by manufacturer's designations**] <**Insert color**>.

Surface Texture: [**Manufacturer's standard**].

* + - 1. FLOORING APPLIED OVER BASE MATS <**Insert drawing designation**>

Copy this article and re-edit for each product.

Insert drawing designation. Use these designations on Drawings to identify each product.

* + - * 1. [Manufacturers:](http://www.specagent.com/Lookup?ulid=11778) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[Action Floor Systems, LLC](http://www.specagent.com/Lookup?uid=123457010196).

[Beynon Sports Surfaces, Inc](http://www.specagent.com/Lookup?uid=123457010197).

[Conner Sports Surface Solutions](http://www.specagent.com/Lookup?uid=123457010198).

[Tarkett Sports; a division of the Tarkett Group](http://www.specagent.com/Lookup?uid=123457010203).

Or equal.

* + - * 1. Description: Fluid-applied athletic flooring system consisting of resilient base mat adhered to substrate, base mat sealer, and fluid-applied polyurethane body and topcoats.
				2. Base Mat: Manufacturer's standard base mats of granulated recycled rubber in polyurethane binder.

Thickness: [**5/32 inch**] [**1/4 inch**] [**9/32 inch**] [**11/32 inch**] [**15/32 inch**].

* + - * 1. Base-Mat Adhesive: Manufacturer's standard two-component polyurethane.
				2. Base-Mat Sealer: Manufacturer's standard two-component polyurethane compound formulated for sealing base mat.
				3. Body Coat(s): Two-component, self-leveling, pigmented, polyurethane containing no rubber fillers and no mercury.

For a descriptive specification, insert properties of body coat(s). Properties and test methods vary among manufacturers and products.

* + - * 1. Topcoat (Finish Coat): Manufacturer's standard pigmented polyurethane.
				2. Finishes:

If retaining second option in "Color" subparagraph below, insert colors with manufacturers' product designations or in a separate schedule.

Color: [**As selected by Director’s Representative from manufacturer's full range**] [**As indicated by manufacturer's designations**].

Surface Texture: Manufacturer's standard.

* + - 1. ACCESSORIES
				1. Trowelable Leveling and Patching Compound: Latex-modified, hydraulic-cement-based formulation approved by flooring manufacturer.
				2. Game-Line and Marker Paint: Complete system including primer, if any, compatible with flooring and recommended in writing by flooring and paint manufacturers for use indicated.
1. EXECUTION
	* + 1. EXAMINATION

Coordinate requirements specified in other Sections for subfloor construction and tolerances to ensure that they are appropriate for products selected.

* + - * 1. Examine substrates, with Installer present, for compliance with requirements for installation tolerances, moisture content, and other conditions affecting performance of the Work.

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 resilient products.

* + - * 1. Proceed with installation only after unsatisfactory conditions have been corrected.

If products are applied on substrates other than concrete, including existing concrete, insert examination requirements in this article and revise "Preparation" Article.

* + - 1. PREPARATION
				1. Concrete Substrates: Prepare substrates according to manufacturer's written instructions to ensure adhesion of flooring.

Verify that substrates are dry and free of curing compounds, sealers, and hardeners. Remove contaminants using mechanical means.

Alkalinity Testing: Perform pH testing according to ASTM F710. Proceed with installation only if pH readings are not less than 7.0 and not greater than 8.5.

Retain "Moisture Testing" subparagraph below; excessive moisture vapor can cause failure of systems installed on slabs-on-grade. ASTM F1869 (anhydrous calcium chloride test) and ASTM F2170 (relative humidity test) both recommend one test per 1000 sq. ft., but no fewer than three tests per test area.

Moisture Testing: Perform tests so that each test area does not exceed 1000 sq. ft., and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.

Retain "Anhydrous Calcium Chloride Test" or "Relative Humidity Test" subparagraph below, or both. When tested according to ASTM F1869, a maximum moisture-emission level of 3 lb of water/1000 sq. ft. of slab area in a 24-hour period is generally accepted in resilient flooring industry.

Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.

Relative Humidity Test: Using in situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.

* + - * 1. Remove substrate coatings and other substances that are incompatible with flooring system components and that contain soap, wax, oil, or silicone, using mechanical methods recommended in writing by manufacturer. Do not use solvents.
				2. Use trowelable leveling and patching compound to fill cracks, holes, and depressions in substrates.
				3. Treat nonmoving substrate cracks and control joints to prevent cracks from telegraphing (reflecting) through flooring, according to manufacturer's written instructions.
				4. Protect substrate voids and joints to prevent flooring resins from flowing into or leaking through them.
				5. Move flooring installation materials into spaces where they will be installed at least 48 hours in advance of installation unless manufacturer recommends a longer period in writing.

Do not install flooring until it is same temperature as space where it is to be installed.

* + - * 1. Sweep and vacuum clean substrates to be covered by flooring immediately before installation. After cleaning, examine substrates for moisture, alkaline salts, carbonation, and dust. Proceed with installation only after unsatisfactory conditions have been corrected.
				2. Protect walls, floor openings, athletic equipment inserts, electrical openings, door frames, and other obstructions during installation. Cover floor and wall areas at mixing stations.
			1. FLOORING INSTALLATION, GENERAL
				1. Mix and apply flooring components according to manufacturer's written instructions.

Retain subparagraph below for moving joints in floor; otherwise, indicate joints on Drawings and revise to suit Project.

At substrate expansion, isolation, and other moving joints, install continuous joint of same width through flooring.

* + - 1. INSTALLATION OF DIRECT-APPLIED FLOORING
				1. Apply primer over prepared substrate at manufacturer's recommended spreading rate.
				2. Apply body coat(s) and topcoat to produce a uniform, level surface and finish.
			2. INSTALLATION OF FLOORING APPLIED OVER BASE MATS
				1. Adhesively apply resilient base mats to substrate according to manufacturer's written instructions.

Do not compress mats when fitting into place. Leave gap of width recommended in writing by manufacturer at butted base-mat sheets, walls, floor openings, athletic equipment inserts, electrical openings, door frames, and other obstructions.

Roll base mats to set them into adhesive and eliminate air pockets.

Repair ridges at seams, loose areas, and air pockets according to manufacturer's written instructions.

* + - * 1. Apply seal coat to base mats before applying body coat(s).
				2. Smooth ridges and high spots in seal coat before applying body coat(s).
				3. Apply body coat(s) and topcoat to produce a uniform surface and finish.
			1. GAME LINES AND MARKERS
				1. Mask flooring at game lines and markers, and apply paint to produce sharp edges. Where crossing, break minor game line at intersection; do not overlap lines.
				2. Apply game lines and markers in widths and colors according to [**requirements indicated on Drawings**] <**Insert name of sport association publication**>.
			2. PROTECTION
				1. Close spaces to traffic for 48 hours after flooring installation unless manufacturer recommends longer period in writing.
				2. Protect flooring from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period. Use protection methods recommended in writing by manufacturer.

Do not move heavy and sharp objects directly over flooring. Protect flooring with plywood or hardboard panels to prevent damage from storing or moving objects over flooring.

Insert other protective measures recommended in writing by manufacturers for products selected.

END OF SECTION 096766