SECTION 096566 - RESILIENT 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:

Interlocking, rubber floor tile.

Interlocking, suspended, polymer floor tile.

Interlocking, open-grid, vinyl floor tile.

Rubber mats.

Rubber floor tile.

Rubber-strip floor tile.

Rubber sheet flooring.

Sheet vinyl flooring.

* + - * 1. Related Requirements:

Retain subparagraph 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 resilient athletic flooring.

* + - 1. COORDINATION

Retain this article if Project includes 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: Show installation details and locations of the following:

Border tiles.

Floor patterns.

Layout, colors, widths, and dimensions of game lines and markers.

Locations of floor inserts for athletic equipment installed through flooring.

Retain subparagraph below for sheet flooring.

Seam locations for sheet flooring.

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 exposed product and for each type, color, and pattern specified, 6-inch- square in size and of the same thickness indicated for the Work.

Retain "Game-Line- and Marker-Paint Samples" subparagraph below if required.

Game-Line- and Marker-Paint Samples: Include Sample sets showing game-line- and marker-paint colors applied to flooring.

Retain "Seam Samples" subparagraph below for sheet vinyl flooring with heat-welded or chemically bonded seams.

Seam Samples: For each vinyl sheet flooring color and pattern required; with seam running lengthwise and in center of 6-by-9-inch Sample applied to a rigid backing and prepared by Installer for this Project.

* + - * 1. Samples for Initial Selection: For each type of resilient athletic flooring.

Retain "Game-Line and Marker Paint" subparagraph below if required.

Game-Line and Marker Paint: Include charts showing available colors and glosses.

* + - * 1. Samples for Verification: For each type, color, and pattern of flooring specified, 6-inch- square in size and of same thickness and material indicated for the Work.

Retain "Game-Line- and Marker-Paint Samples" subparagraph below if required.

Game-Line- and Marker-Paint Samples: Include Sample sets showing game-line- and marker-paint colors applied to flooring.

Retain "Seam Samples" subparagraph below for sheet vinyl flooring with heat-welded or chemically bonded seams.

Seam Samples: For each vinyl sheet flooring color and pattern required; with seam running lengthwise and in center of 6-by-9-inch Sample applied to a rigid backing and prepared by Installer for this Project.

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

* + - * 1. Qualification Data: For sheet vinyl flooring Installer.
      1. CLOSEOUT SUBMITTALS
         1. Maintenance Data: For resilient athletic flooring to include in maintenance manuals.
      2. MAINTENANCE MATERIAL SUBMITTALS
         1. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

Floor Tile: Furnish no fewer than 1 box for each 50 boxes or fraction thereof, of each type, color, pattern, and size of floor tile installed.

Sheet Flooring: Furnish full-width rolls of not less than 10 linear feet for each 500 linear feet or fraction thereof, of each type, color, and pattern of flooring installed.

* + - 1. QUALITY ASSURANCE

Retain this article for sheet vinyl flooring with heat-welded or chemically bonded seams.

* + - * 1. Sheet Vinyl Flooring Installer Qualifications: An experienced installer who has completed sheet vinyl flooring installations using seaming methods indicated for this Project and similar in material, design, and extent to that indicated for this Project; who is acceptable to manufacturer; and whose work has resulted in installations with a record of successful in-service performance.
      1. DELIVERY, STORAGE, AND HANDLING
         1. Deliver materials in original packages and containers, with seals unbroken, bearing manufacturer's labels indicating brand name and directions for storing.
         2. Store materials to prevent deterioration.

Store tiles on flat surfaces.

Store rolls upright.

* + - 1. FIELD CONDITIONS
         1. Adhesively Applied Products:

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 postinstallation 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.

Close spaces to traffic for 48 hours after flooring installation unless manufacturer recommends longer period in writing.

* + - * 1. Install flooring after other finishing operations, including painting, have been completed.

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. PERFORMANCE REQUIREMENTS
      2. INTERLOCKING, RUBBER FLOOR TILE <**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=11769) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[Amarco Products](http://www.specagent.com/Lookup?uid=123457010066).

[Conner Sports Surface Solutions](http://www.specagent.com/Lookup?uid=123457010068).

[Pawling Corporation](http://www.specagent.com/Lookup?uid=123457010075).

Approved equivalent.

* + - * 1. Description: Athletic flooring consisting of modular rubber tiles with precision cut, interlocking edges, for free-lay installation.
        2. Material: [**Rubber**] [**Recycled-rubber compound**].

If applicable, insert fire-test-response characteristics. See "Fire-Test-Response Characteristics" Article in the Evaluations.

* + - * 1. Tile Interlock: Visible.
        2. Traffic-Surface Texture: [**Smooth**] [**Nondirectional, stipple texture**] [**Textured**].

Provide reversible tiles (with traffic-surface texture on both sides).

* + - * 1. Size: 24 inches square.
        2. Thickness: [**3/8 inch**] [**7/16 inch**] [**1/2 inch**] [**9/16 inch**] [**3/4 inch**].
        3. Weight: Not less than <**Insert weight**> per tile.

If retaining second option in "Color and Pattern" paragraph below, indicate colors and patterns with manufacturers' product designations in "Basis-of-Design Product" paragraph or in a separate schedule.

* + - * 1. Color and Pattern: [**As selected by Director’s Representative from manufacturer's full range**] [**As indicated by manufacturer's designations**].
        2. Border: Interlocking, beveled-edge tiles, of same material as floor tile; with bevels that transition from thickness of floor tile to surface below it; with straight outside edges; for use where flooring corners and edges do not abut vertical surfaces.

If retaining third option in "Border Color and Pattern" subparagraph below, indicate colors and patterns with manufacturers' product designations above or in a separate schedule.

Border Color and Pattern: [**Matching floor tile**] [**As selected by Director’s Representative from manufacturer's full range to contrast with floor tile**] [**As indicated by manufacturer's designations**].

* + - 1. INTERLOCKING, SUSPENDED, POLYMER FLOOR TILE <**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=11770) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[Amarco Products](http://www.specagent.com/Lookup?uid=123457010122).

[Mateflex](http://www.specagent.com/Lookup?uid=123457010123).

[Sport Court](http://www.specagent.com/Lookup?uid=123457010124).

Approved equivalent.

* + - * 1. Description: Athletic flooring consisting of modular, polymer tiles raised above substrate on gusseted ribs or posts; with hidden, interlocking connectors; for free-lay installation[**over adhered rubber sheet underlayment**].
        2. Material: Solid polypropylene.

If applicable, insert fire-test-response characteristics. See "Fire-Test-Response Characteristics" Article in the Evaluations.

* + - * 1. Tile Interlock: Manufacturer's standard.
        2. Traffic-Surface Texture: [**Solid**] [**Raised disc**].

Most manufacturers offer 12-inch-square tile; however, most of Sport Court's products are 9.8 inches square.

* + - * 1. Size: Manufacturer's standard-size square tile.
        2. Thickness: 1/2 inch.
        3. Weight: Not less than <**Insert weight**> per tile.

If retaining second option in "Color and Pattern" paragraph below, indicate colors and patterns with manufacturers' product designations in "Basis-of-Design Product" paragraph or in a separate schedule.

* + - * 1. Color and Pattern: [**As selected by Director’s Representative from manufacturer's full range**] [**As indicated by manufacturer's designations**].

Retain "Underlayment" paragraph below if required.

* + - * 1. Underlayment:

Material: Manufacturer's standard rubber sheet.

Thickness: [**0.08 inch**] [**0.12 inch**].

* + - * 1. Border: Interlocking, beveled-edge tiles, of same material as floor tile; with bevels that transition from thickness of floor tile to surface below it; with straight outside edges; for use where flooring corners and edges do not abut vertical surfaces.

If retaining third option in "Border Color and Pattern" subparagraph below, indicate colors and patterns with manufacturers' product designations above or in a separate schedule.

Border Color and Pattern: [**Matching floor tile**] [**As selected by Director’s Representative from manufacturer's full range to contrast with floor tile**] [**As indicated by manufacturer's designations**].

* + - 1. INTERLOCKING, OPEN-GRID, VINYL FLOOR TILE <**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=11771) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[Amarco Products](http://www.specagent.com/Lookup?uid=123457010125).

[American Floor Products Company, Inc](http://www.specagent.com/Lookup?uid=123457010126).

[Mateflex](http://www.specagent.com/Lookup?uid=123457010127).

Approved equivalent.

* + - * 1. Description: Athletic flooring consisting of modular, polymer tiles with openings to permit free drainage of water; with hidden, interlocking connectors; for free-lay installation.
        2. Material: [**Vinyl**] [**Recycled-vinyl compound**] .

If applicable, insert fire-test-response characteristics. See "Fire-Test-Response Characteristics" Article in the Evaluations.

* + - * 1. Tile Interlock: Manufacturer's standard.
        2. Size: 12 inches square.
        3. Thickness: [**1/4 inch**] [**3/8 inch**] [**7/16 inch**] [**3/4 inch**].

If retaining second option in "Color and Pattern" paragraph below, indicate colors and patterns with manufacturers' product designations in "Basis-of-Design Product" paragraph or in a separate schedule.

* + - * 1. Color and Pattern: [**As selected by Director’s Representative from manufacturer's full range**] [**As indicated by manufacturer's designations**].
        2. Border: Interlocking, beveled-edge tiles, of same material as floor tile; with bevels that transition from thickness of floor tile to surface below it; with straight outside edges; for use where flooring corners and edges do not abut vertical surfaces.

If retaining third option in "Border Color and Pattern" subparagraph below, indicate colors and patterns with manufacturers' product designations above or in a separate schedule.

Border Color and Pattern: [**Matching floor tile**] [**As selected by Director’s Representative from manufacturer's full range to contrast with floor tile**] [**As indicated by manufacturer's designations**].

* + - 1. RUBBER 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=11772) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[Amarco Products](http://www.specagent.com/Lookup?uid=123457010128).

[Musson Rubber Co](http://www.specagent.com/Lookup?uid=123457010130).

[Pawling Corporation](http://www.specagent.com/Lookup?uid=123457010131).

Approved equivalent.

* + - * 1. Description: Individual rubber mats specifically designed for free-lay athletic flooring applications.
        2. Material: Recycled-rubber compound.

If applicable, insert fire-test-response characteristics. See "Fire-Test-Response Characteristics" Article in the Evaluations.

* + - * 1. Traffic-Surface Texture: Smooth.
        2. Size: 48 by 72 inches.
        3. Thickness: [**3/8 inch**] [**1/2 inch**].

If retaining second option in "Color" paragraph below, indicate colors and patterns with manufacturers' product designations in "Basis-of-Design Product" paragraph or in a separate schedule.

* + - * 1. Color: [**As selected by Director’s Representative from manufacturer's full range**] [**As indicated by manufacturer's designations**].
      1. RUBBER FLOOR TILE <**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=11773) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[Conner Sports Surface Solutions](http://www.specagent.com/Lookup?uid=123457010085).

[Nora Systems, Inc](http://www.specagent.com/Lookup?uid=123457010092).

[Robbins Sports Surfaces](http://www.specagent.com/Lookup?uid=123457010094).

Approved equivalent.

* + - * 1. Description: Athletic flooring consisting of modular rubber tiles with smooth edges for adhered application.
        2. Material: [**Rubber**] [**Recycled-rubber compound**] [**Rubber wear layer and rubber shock-absorbent layer, vulcanized together**].

If applicable, insert fire-test-response characteristics. See "Fire-Test-Response Characteristics" Article in the Evaluations.

* + - * 1. Traffic-Surface Texture: [**Smooth**] [**Nondirectional, stipple texture**] [**Textured**].
        2. Size: [**Manufacturer's standard-size square tile**] [**18 inches square**] [**24 inches square**] [**36 inches square**].
        3. Thickness: [**5/32 inch**] [**1/4 inch**] [**3/8 inch**] [**1/2 inch**].
        4. Weight: Not less than <**Insert weight**> per tile.

If retaining second option in "Color and Pattern" paragraph below, indicate colors and patterns with manufacturers' product designations in "Basis-of-Design Product" paragraph or in a separate schedule.

* + - * 1. Color and Pattern: [**As selected by Director’s Representative from manufacturer's full range**] [**As indicated by manufacturer's designations**].
        2. Border: Interlocking, beveled-edge tiles, of same material as floor tile; with bevels that transition from thickness of floor tile to surface below it; with straight outside edges; for use where flooring corners and edges do not abut vertical surfaces.

If retaining third option in "Border Color and Pattern" subparagraph below, indicate colors and patterns with manufacturers' product designations above or in a separate schedule.

Border Color and Pattern: [**Matching floor tile**] [**As selected by Director’s Representative from manufacturer's full range to contrast with floor tile**] [**As indicated by manufacturer's designations**].

* + - 1. RUBBER-STRIP FLOOR TILE <**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=11774) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[Flexco; Roppe Holding Company](http://www.specagent.com/Lookup?uid=123457010134); flextuft.

[Johnsonite; a Tarkett company](http://www.specagent.com/Lookup?uid=123457010135); Terra-Turf.

[Musson Rubber Co](http://www.specagent.com/Lookup?uid=123457010136).; TT-12 Fluff Cord Strip Tile.

Approved equivalent.

* + - * 1. Description: Modular, close-nap, carpetlike tiles of rubber-fabric strips; made from recycled tires; bonded to a backing; for adhered installation.
        2. Materials: Recycled rubber.

Pill test in "Fire-Test-Response Characteristics" paragraph below is typically required for rubber-strip floor tile. If applicable, insert other fire-test-response characteristics. See "Fire-Test-Response Characteristics" Article in the Evaluations.

* + - * 1. Fire-Test-Response Characteristics: Passing 16 CFR 1630 (DOC FF-1-70).
        2. Size: 12 inches square.
        3. Thickness: 3/8 inch.

If retaining second option in "Color and Pattern" paragraph below, indicate colors and patterns with manufacturers' product designations in "Basis-of-Design Product" paragraph or in a separate schedule.

* + - * 1. Color and Pattern: [**As selected by Director’s Representative from manufacturer's full range**] [**As indicated by manufacturer's designations**].
      1. RUBBER SHEET 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=11775) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[Conner Sports Surface Solutions](http://www.specagent.com/Lookup?uid=123457010102).

[Nora Systems, Inc](http://www.specagent.com/Lookup?uid=123457010108).

[Robbins Sports Surfaces](http://www.specagent.com/Lookup?uid=123457010110).

Approved equivalent.

* + - * 1. Description: Rubber athletic flooring provided as rolled goods for adhered installation.
        2. Material: [**Recycled-rubber compound**] [**Rubber wear layer and rubber shock-absorbent layer, vulcanized together**].

If applicable, insert fire-test-response characteristics. See "Fire-Test-Response Characteristics" Article in the Evaluations.

* + - * 1. Traffic-Surface Texture: Smooth.
        2. Roll Size: Not less than 48 inches wide by longest length that is practical to minimize splicing during installation.
        3. Thickness: [**1/4 inch**] [**3/8 inch**].

If retaining second option in "Color and Pattern" paragraph below, indicate colors and patterns with manufacturers' product designations in "Basis-of-Design Product" paragraph or in a separate schedule.

* + - * 1. Color and Pattern: [**As selected by Director’s Representative from manufacturer's full range**] [**As indicated by manufacturer's designations**].
        2. Border: Interlocking, beveled-edge tiles, of same material as sheet flooring; with bevels that transition from thickness of sheet flooring to surface below it; with straight outside edges; for use where flooring corners and edges do not abut vertical surfaces.

If retaining third option in "Border Color and Pattern" subparagraph below, indicate colors and patterns with manufacturers' product designations above or in a separate schedule.

Border Color and Pattern: [**Matching sheet flooring**] [**As selected by Director’s Representative from manufacturer's full range to contrast with floor tile**] [**As indicated by manufacturer's designations**].

* + - 1. SHEET VINYL 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=11776) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[Gerflor](http://www.specagent.com/Lookup?uid=123457010117).

[Johnsonite; a Tarkett company](http://www.specagent.com/Lookup?uid=123457010118).

[Lonseal, Inc](http://www.specagent.com/Lookup?uid=123457010119).

Approved equivalent.

* + - * 1. Description: Sheet vinyl flooring specifically designed for adhered athletic flooring applications.
        2. Sheet Vinyl Flooring with Backing: ASTM F1303.

Type (Binder Content): Type I, minimum binder content of 90 percent.

Wear-Layer Thickness: Grade 1.

Overall Thickness: <**Insert dimension**>.

Interlayer Material: [**Foamed plastic**] [**None**].

Backing Class: [**Class B (nonfoamed plastic)**] [**Class C (foamed plastic)**].

If applicable, insert fire-test-response characteristics. See "Fire-Test-Response Characteristics" Article in the Evaluations.

* + - * 1. Seaming Method: Heat welded.
        2. Traffic-Surface Texture: Smooth.

Verify availability of applied finish for products retained.

* + - * 1. Applied Finish: Factory-applied UV urethane.
        2. Roll Size: Not less than 48 inches wide by longest length that is practical to minimize splicing during installation.

If retaining second option in "Color and Pattern" paragraph below, indicate colors and patterns with manufacturers' product designations in "Basis-of-Design Product" paragraph or in a separate schedule.

* + - * 1. Color and Pattern: [**As selected by Director’s Representative from manufacturer's full range**] [**As indicated by manufacturer's designations**].
      1. ACCESSORIES
         1. Trowelable Leveling and Patching Compound: Latex-modified, hydraulic-cement-based formulation approved by flooring manufacturer.

Retain "Adhesives" paragraph below for adhered products.

* + - * 1. Adhesives: Water-resistant type recommended in writing by manufacturer for substrate and conditions indicated.

Game-line and marker paint may require using a field-applied polyurethane; verify, with manufacturers, availability and applicability for flooring products.

* + - * 1. 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

Retain this article if flooring is adhered.

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

* + - * 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.
      1. PREPARATION

Retain this article if flooring is adhered.

Extensive surface preparation is required over substrates from which existing adhered products have been removed. Requirements vary among manufacturers. Insert requirements to suit Project.

* + - * 1. Prepare substrates according to manufacturer's written instructions to ensure adhesion of flooring.
        2. Concrete Substrates: Prepare according to ASTM F710.

Verify that substrates are dry and free of curing compounds, sealers, and hardeners.

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 adhesives 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. Move flooring and 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 the 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.
      1. FLOORING INSTALLATION, GENERAL
         1. Comply with manufacturer's written installation instructions.
         2. Scribe, cut, and fit flooring to butt neatly and tightly to vertical surfaces, equipment anchors, floor outlets, and other interruptions of floor surface.
         3. Extend flooring into toe spaces, door reveals, closets, and similar openings unless otherwise indicated.
         4. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating subfloor markings on flooring. Use nonpermanent, nonstaining marking device.
      2. FLOOR TILE INSTALLATION
         1. Lay out tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half tile at perimeter.

Lay tiles [**square with room axis**] [**at a 45-degree angle with room axis**] [**in pattern indicated**].

* + - * 1. Discard broken, cracked, chipped, or deformed tiles.

Retain "Tile Matching" paragraph below if applicable.

* + - * 1. Tile Matching: Match tiles for color and pattern by selecting tiles from cartons in same sequence as manufactured and packaged if so numbered.

Lay tiles [**with grain running in one direction**] [**with grain direction alternating in adjacent tiles (basket-weave pattern)**] [**in pattern of colors and sizes indicated**].

Retain "Adhered Tile" paragraph below if tiles are adhered to substrates.

* + - * 1. Adhered Floor Tile: Adhere products to substrates using a full spread of adhesive applied to substrate to comply with adhesive and flooring manufacturers' written instructions, including those for trowel notching, adhesive mixing, and adhesive open and working times.

Provide completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

Retain "Free-Lay Tile" paragraph below if tiles are free laid.

* + - * 1. Free-Lay Tile: Place flooring at locations indicated with units securely interconnected and fully seated on substrate to form a smooth, level surface.
      1. SHEET FLOORING INSTALLATION
         1. Unroll sheet flooring and allow it to stabilize before cutting and fitting.
         2. Lay out sheet flooring as follows:

Maintain uniformity of flooring direction.

Minimize number of seams; place seams in inconspicuous and low-traffic areas, at least 6 inches away from parallel joints in flooring substrates.

Match edges of flooring for color shading at seams.

Locate seams according to approved Shop Drawings.

* + - * 1. Adhere products to substrates using a full spread of adhesive applied to substrate to comply with adhesive and flooring manufacturers' written instructions, including those for trowel notching, adhesive mixing, and adhesive open and working times.

Provide completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

Retain "Vinyl Sheet Flooring Seams" paragraph below if required.

* + - * 1. Vinyl Sheet Flooring Seams: Prepare and finish seams to produce surfaces flush with adjoining flooring surfaces.

Retain "Heat-Welded Seams" or "Chemically Bonded Seams" subparagraph below, or both, to coordinate with requirements in Part 2.

Heat-Welded Seams: Comply with ASTM F1516. Rout joints and use welding bead to permanently fuse sections into a seamless flooring.

Chemically Bonded Seams: Comply with ASTM F693. Seal seams to prevent openings from forming between cut edges and to prevent penetration of dirt, liquids, and other substances into seams.

* + - 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. FIELD-APPLIED FINISHES

Retain this article if field-applied finishes are required for sheet vinyl flooring.

Retain first paragraph below if game lines and markers are required.

* + - * 1. Apply finish after game-line and marker paint is fully cured.
        2. Apply finish according to manufacturer's written instructions to produce a sealed surface that is ready for use.
        3. Do not cover flooring after finishing until finish reaches full cure.
      1. CLEANING AND PROTECTION
         1. Perform the following operations immediately after completing flooring installation:

Retain first subparagraph below if products are adhered.

Remove adhesive and other blemishes from flooring surfaces.

Sweep and vacuum flooring thoroughly.

Damp-mop flooring to remove marks and soil after time period recommended in writing by manufacturer.

* + - * 1. 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 retained.

END OF SECTION 096566