1. Section 09 6566
Resilient Athletic Flooring
	1. PART 1  GENERAL
		1. SECTION INCLUDES
			1. Vinyl sheet flooring, adhesively installed.
			2. Painted game lines.
			3. Accessories.
		2. RELATED REQUIREMENTS
			1. Section 09 0561 - Common Work Results for Flooring Preparation:  Removal of existing floor coverings, cleaning, and preparation.
		3. REFERENCE STANDARDS
			1. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.
			2. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2019a, with Editorial Revision (2020).
			3. ASTM E662 - Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials; 2021a, with Editorial Revision.
			4. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2022.
			5. NFPA 101 - Life Safety Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
			6. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; 2023.
			7. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials; Current Edition, Including All Revisions.
		4. ADMINISTRATIVE REQUIREMENTS
			1. Coordination:
				1. Coordinate completion of flooring installation with other trades.
			2. Pre-Installation Conference: In addition to agenda items specified in Section ​01 3000​, review following:
				1. Participate in pre-installation conference as specified in Section ​09 0561​ and held jointly with Section ​09 6466​ pre-installation conference.
				2. Conference may be held at project site or other convenient site. Participants may also attend by video or audio conference if approved by Project Manager.
				3. Schedule conference after substrate preparation and ONE (1) week minimum before installation of flooring system.
				4. In addition to agenda items specified in Section ​01 3000​ and Section ​09 0561​, review following:

Review Testing Agency testing report of Alkalinity and Concrete Moisture of concrete slab:

See Section ​09 0561​ for Options if concrete moisture tests of concrete slab exceeds Alkalinity and Concrete Moisture requirements for flooring.

Review schedule for installation of athletic flooring and coordination with other trades.

Review Flooring Manufacturer's installation conditions verification procedure and requirements.

Review Building Ambient Conditions including normal levels of humidity, lighting, heating, and air conditioning for acceptability for beginning floor preparation and flooring installation.

Review high moisture remediation options when high moisture exists based on moisture testing specified in Section ​09 0561 - Common Work Results for Flooring Preparation​.

* + - 1. Scheduling:
				1. Testing Agency to provide testing for Alkalinity and Concrete Moisture of concrete slab as specified in Section ​09 0561 - Common Work Results for Flooring Preparation​.
				2. Notify Flooring Installer when Building Ambient Conditions requirements are met before installation of flooring system.
		1. SUBMITTALS
			1. Product Data:  Manufacturer's printed data sheets for products specified.
			2. Manufacturer Instructions: Published installation instructions. Submit before pre-installation conference.
			3. Closeout Submittals:
				1. Include following in Operations And Maintenance Manual specified in Section ​01 7800​:

Warranty Documentation:

Final, executed copy of Warranty.

Record Documentation:

Manufacturers documentation:

Manufacturer's literature.

Testing and Inspection Reports:

Testing Agency Testing Reports of Alkalinity and Concrete Moisture tests.

* + 1. QUALITY ASSURANCE
			1. Installer Qualifications: An experienced installer certified in writing by the flooring manufacturer to be qualified for installation of specified flooring system with not less than five (5) years of installation experience.
			2. Manufacturer Qualifications: Not less than five (5) years of production experience, whose published literature clearly indicates general compliance of products with requirements of this section.
		2. DELIVERY, STORAGE, AND HANDLING
			1. Deliver materials to project site in unopened containers clearly labeled with manufacturer's name and identification of contents.
			2. Store materials in dry and clean location until needed for installation. During installation, handle in a manner that will prevent marring and soiling of finished surfaces.
		3. FIELD CONDITIONS
			1. Maintain temperature in spaces to receive adhesively installed resilient flooring within range of ​70 to 95 degrees F​ for not less than 48 hours before the beginning of installation and for not less than 48 hours after installation has been completed. Subsequently, do not allow temperature in installed spaces to drop below ​50 degrees F​ or to go above 80 degrees F.
			2. Concrete Slab:
				1. General:

Final determination as to whether or not a concrete slab is dry enough for flooring installation should be based on evaluating both Alkalinity and Concrete Moisture Vapor Emission Rate (MVER) testing as specified in Section ​09 0561 - Common Work Results for Flooring Preparation​.

* + - * 1. Alkalinity:

Do not install sheet carpeting if alkalinity of concrete surface exceeds pH level 8.5. Corrective procedures are required.

* + - * 1. Concrete Moisture Vapor Emission Rate (MVER):

Testing conditions inside building shall be brought to same ambient temperature and relative humidity levels to be normal at occupancy of building. Conditions include normal levels of humidity, lighting, heating, and air conditioning.

Follow requirements specified in Section 09 0503 ‘Floor Substrate Preparation’ before installation of synthetic athletic flooring.

* + 1. WARRANTY
			1. Manufacturer Warranty:
				1. Synthetic Athletic Flooring:

Flooring Company's standard warranty covering product defects on materials supplied including full replacement (material and workmanship) for warranty period.

Flooring Company's ten (10) year written guarantee covering poor workmanship and faulty installation:

Follow Manufacturer's verification procedures of installation conditions necessary for issuance of warranty.

* 1. PART 2  PRODUCTS
		1. **REGULATORY AGENCY APPROVAL**
			1. Fire Test Performance:
				1. Provide flooring system in compliance which complies with the following fire test performance criteria as determined by an independent testing laboratory acceptable to authorities having jurisdiction:

Critical Radiant Flux (CRF):

Class 1, not less than 0.45 watts per square cm per ASTM E648 and NFPA 101 and IBC 804.2 (also referenced in NFPA 253 and FTM 372).

Flame Spread:

Flame spread index 0-25 in accordance with ASTM E84 or UL 723 Type 1.

Smoke Density:

Smoke-developed index 0-450 in accordance with ASTM E662.

* + - 1. Testing and Inspection:
				1. Owner will provide Testing for Alkalinity and Concrete Moisture of concrete slab before installation of flooring.
		1. PREFORMED ATHLETIC FLOORING
			1. Manufacturers:
				1. Approved Manufacturers. See Section ​01 6000​ for definitions of Categories.

Gerflor, Chicago, IL:

Contact: Adrian Boon: (623) 221-8447, e-mail adrianrossboon@gmail.com.

Tarkett Sports, Peachtree City, GA:

Contact: Josh Brown: (801) 686-5435, e-mail josh.brown@tarkettsports.com.

* + - 1. Product:
				1. Approved Products. See Section ​01 6000​ for definitions of Categories:

Gerflor:

Recreation 60.

Tarkett Sports:

Omnisports 7.1 mm.

* + - 1. Components:
				1. Recreation 60 by Gerflor:

Description:

Prefabricated vinyl sports surface with authentic maple flooring wood grain design and smooth embossed surface.

Printing of maple wood design shall closely replicate standard maple strip flooring in size (approximately 2-1/4 inch (57 mm) face width), color, board length, and grain appearance.

Anti-Fungal Treatment.

General:

Thickness: Not less than 2.1 mm (.08 inch).

Finish: Manufacturer's, factory-applied, permanent and UV-cured.

Anti-fungal treatment provided.

Seaming Method: Heat welded.

Adhesive:

As approved and supplied by Manufacturer:

Gerflor Gerfix Spray Adhesive.

Color: Maple design.

Game Line Paint:

Complete system including primer, compatible with flooring and recommended by flooring and paint manufacturers.

Colors (No changes in game line colors are acceptable without prior written approval of ​Owner​):

Basketball: Black.

Volleyball: White

Pickleball: Blue

VOC Content (when required by local AHJ):

Use only adhesives with VOC content of 50 g/l or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

Game-Line and Marker Paint: VOC content of not more than 150 g/L.

Moisture Barrier (if requred):

Moisture barrier as required by flooring manufacturer.

Tile Base:

3 inch x 4 inch (76 mm x 100 mm) heavy duty, molded, vented cove base with premolded corners by Manufacturer:

Approved color as selected by ​Architect​ from Manufacturer's standard colors.

* + - * 1. Tarkett Sports:

Description:

Prefabricated sport surface with wood grain design and slightly textured embossed surface.

Wood design closely resembles standard wood strip flooring in size, color, board length, and grain appearance.

General:

Thickness: 7.1 mm (0.28 inch).

Hardwood Design Series: Wood look design.

Texture: Texture to remain consistent between solid colors and wood design when blending colors.

Embossing of wood design and solid colors must be same; varying embossing or surface textures will not be allowed.

Top layer: clear layer of pure PVC (Polyvinyl Chloride) and top coat with factory applied UV cured urethane treatment.

Intermediate layers: fortified with non-woven fiberglass grid.

Foam Layers:

Foam force reduction layer: High-density closed cell PVC foam with honeycomb embossing.

Laminated or adhered foam layers not allowed. Field constructed products not accepted.

Welding Rod:

As supplied by Manufacturer or Supplier: Color to blend with athletic surfacing color or design. All seams shall be welded to create monolithic and impermeable surface.

Tile Base:

Heavy duty, molded, vented cove base with pre-molded corners in standard size available by Manufacturer:

Approved color as selected by ​Architect​ from Manufacturer's standard colors.

Adhesive:

As approved and supplied by Manufacturer:

One-component acrylic by Manufacturer.

Game Line Primer and Paint:

As approved and supplied by Manufacturer.

Colors (No changes in game line colors are acceptable without prior written approval of ​Owner​):

Basketball: Black.

Volleyball: White

Pickleball: Blue​

VOC Content (when required by local AHJ):

Use only adhesives with VOC content of 50 g/l or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

Game-Line and Marker Paint: VOC content of not more than 150 g/L.

* + - * 1. Adhesives:

VOC Content VOC Content (when required by local AHJ):

Manufacturer's standard for application indicated that has VOC content of 100 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

* + 1. ACCESSORIES
			1. Leveling Compound:  Latex-modified cement formulation as recommended by flooring manufacturer for substrate conditions.
			2. Flooring Adhesive:  Waterproof; types recommended by flooring manufacturer.
	1. PART 3  EXECUTION
		1. EXAMINATION
			1. Examine substrates for conditions detrimental to installation of athletic flooring. Proceed with installation only after unsatisfactory conditions have been corrected.
			2. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of athletic flooring to substrate.
			3. Follow Flooring Manufacturer's prescribed inspection procedure for determining acceptability of installation conditions, including environmental conditions in building during and after installation, moisture content of slab, flatness and levelness of slab, etc.
			4. Verify concrete surfaces are sufficiently cured and moisture content is within acceptable levels before beginning installation.
			5. Verify with General Contractor and by visual inspection that no curing compounds and/or sealers have been applied to concrete surface.
			6. Verify installed flooring concrete surface will be dry and weather tight.
			7. Verify Ambient Conditions as specified in Field Conditions in Part 1 of this specification have been maintained before proceeding with applying synthetic athletic flooring.
			8. Verify concrete floor flatness meeting manufacturer’s requirements.
			9. Verify work from other trades will not cause damage, dirt and dust or interrupt normal pace of flooring installation have been completed or suspended.
			10. Cementitious Subfloor Surfaces:  Verify that substrates are ready for resilient flooring installation by testing for moisture and alkalinity (pH).
				1. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.
		2. PREPARATION
			1. Prepare floor substrates for installation of flooring in accordance with Section 09 0561.
			2. Prepare floor substrates as recommended by flooring and adhesive manufacturers.
			3. Concrete: Use leveling compound as necessary to achieve substrate flatness of plus or minus 1/8 inch within 10 ft radius.
			4. Correct deficiencies identified during Pre-Installation Conference and confirm acceptance and approval of substrate with Architect before beginning installation of flooring system.
			5. Cracks, chips and joints must be properly patched or repaired.
			6. Cleaning requirements:
				1. Sweep and clean concrete slab to remove all dirt and dust.
				2. Sweeping compound if used must not contain oil or other items that may inhibit adhesive bond.
				3. Slab must be dust free. In the event that dust impairs adhesive bond, priming slab prior to application of adhesive may be necessary. Follow installation guidelines.
			7. Remove coatings that are incompatible with flooring adhesives, using methods recommended by flooring manufacturer.
			8. Broom clean areas to receive athletic flooring immediately before beginning installation.
		3. INSTALLATION
			1. Starting installation constitutes acceptance of subfloor conditions.
			2. Install in accordance with manufacturer's written instructions.
			3. Resilient Sheet Flooring:
				1. Unroll flooring and allow to relax before beginning installation.
				2. Mix adhesive thoroughly and apply to substrate with notched trowel. Roll flooring into fresh adhesive, overlapping end seams and double cutting, butting factory edges and compression fitting.
				3. Roll entire flooring surface with steel roller to assure adhesion to substrate and eliminate air bubbles.
				4. Immediately remove any adhesive from flooring surface, using chemical recommended by flooring manufacturer.
				5. Weld seams using techniques and equipment recommended by manufacturer.
				6. Lay out game lines using tape and taping machine approved by flooring manufacturer. Apply game line paint with roller, and allow to dry before removing tape.
				7. Apply transparent top coat over flooring if recommended by manufacturer, to achieve a uniform finished appearance.
		4. FIELD QUALITY CONTROL
			1. Field Tests And Inspections:
				1. Tests:

See Section ​09 0561 - Common Work Results for Flooring Preparation​ for Field Testing for Alkalinity and Concrete Moisture of concrete slab.

* + 1. CLEANING
			1. Clean flooring using methods recommended by manufacturer.
			2. Installer’s Responsibility:
				1. All work areas are to be kept clean, clear and free of debris at all times.
				2. Disposal of rubbish in provided dumpster(s) or if not provided, dispose of empty containers in accordance with federal and local statutes.
				3. Remove all unused materials, tools, and equipment and dispose of any debris properly.
				4. Clean synthetic athletic surfacing in accordance with manufacturer’s instructions.
			3. General Contractor’s Responsibility:
				1. Provide adequate waste receptacles (dumpsters) and dispose of ​Owner​ Furnished materials from building and property as specified in Section ​01 7419​.
		2. PROTECTION
			1. Protect finished athletic flooring from construction traffic to ensure that it is without damage upon Date of Substantial Completion.
1. END OF SECTION  09 6566

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