

**SECTION 09 65 66**  
**ARCHITECTURAL SPECIFICATIONS FOR INDOOR RESILIENT ATHLETIC**  
**SURFACING**

**PART 1 – GENERAL**

- 1.1 *SECTION INCLUDES*
- A. Supply and installation of the indoor resilient multipurpose surfacing
  - B. Application of the game lines
  - C. References for the correct construction and preparation of concrete slabs to receive resilient flooring.
- 1.2 *SUBMITTALS*
- A. Product Data:  
Manufacturer's promotional brochures, specifications and installation instructions
  - B. Samples:
    - 1. Submit for selection and approval three (3) sets of the indoor resilient multipurpose surfacing, manufacturer's brochures, samples or sample boards of all of the available colors, textures and styles.
    - 2. Submit color samples of all the available game line paint colors for selection and approval.
  - C. Closeout Submittals:
    - 1. Submit three (3) copies of the indoor resilient multipurpose surfacing and manufacturer's maintenance instructions.
    - 2. Submit three (3) copies of the material and installation warranties as specified.
- 1.3 *QUALITY ASSURANCE*
- A. Qualifications:
    - 1. The indoor resilient multipurpose surfacing shall have been actively marketed for a minimum of ten (10) years.
    - 2. The indoor resilient multipurpose surfacing shall be manufactured in an ISO 9001 certified plant.
    - 3. The indoor resilient multipurpose surfacing shall be manufactured in an ISO 14001 certified plant.
    - 4. The indoor resilient multipurpose surfacing supplier shall be an established firm experienced in the field and appointed as a distributor by the manufacturer of the indoor resilient multipurpose surfacing.
    - 5. The installer of the indoor resilient multipurpose surfacing shall have a minimum of five (5) years experience in the field installing indoor resilient multipurpose surfacing and have worked on at least five (5) projects of similar size, type and complexity.
  - B. Certifications:
    - 1. Installer to submit the indoor resilient athletic surfacing manufacturer's or distributor's certification attesting that they are an approved installer of the indoor resilient multipurpose surfacing.
    - 2. The indoor resilient multipurpose surfacing manufacturer to submit official ISO 9001 certification for the facility in which the indoor resilient multipurpose surfacing is manufactured.

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3. The indoor resilient multipurpose surfacing manufacturer to submit official ISO 14001 certification for the facility in which the indoor resilient multipurpose surfacing is manufactured.
- C. Testing:  
Tests shall be relative for multi-purpose use with certificates from independent testing resources to be made available upon request. Test results shall be no more than 5 years old and performed according to ASTM and/or EN standard testing procedures.

1.4 *DELIVERY, STORAGE AND HANDLING*

- A. Delivery:  
Material shall not be delivered until all related work is in place and finished and/or proper storage facilities and conditions can be provided and guaranteed stable according to FieldTurf USA, Inc. recommendations.
- B. Storage:  
Store the material in a secure, clean and dry location. Maintain temperature between 55° and 85° Fahrenheit. Store the indoor resilient athletic surfacing rolls in an upright position on a smooth flat surface immediately upon delivery to jobsite. Rolls shipped in rigid protective cardboard containers can be laid horizontally prior to unpacking and installation.

1.5 *PROJECT/SITE CONDITIONS*

- A. It is the responsibility of the general contractor/construction manager to maintain project/site conditions acceptable for the installation of the indoor resilient multipurpose flooring.
- B. The area in which the indoor resilient multipurpose surfacing will be installed shall be dry and weather tight. Permanent heat, light and ventilation shall be installed and operable.
- C. All other trades shall have completed their work prior to the installation of the resilient athletic flooring. The general contractor or Construction Manager shall maintain a secure and clean working environment before, during and after the installation. Suspension of other trades' work may be authorized providing their work will not damage the new flooring.
- D. Maintain a stable room temperature of at least 65°F for a minimum of one (1) week prior to, during and thereafter installation.
- E. An effective low-permeance vapor barrier is placed directly beneath the concrete subfloor. For "on" or "below grade" installations, it is recommended to provide a permanent vapor barrier resistant to long term hydrostatic pressure/moisture exposure. Protrusions should be sealed to prevent moisture migration into the slab. Moisture should not be allowed to enter the slab after the completed construction.
- F. Concrete subfloor surface pH level within the 7 to 10 range dependent upon installation type.
- G. Concrete subfloor should be no greater than 1/8" within a 10 ft diameter. This tolerance can be measured in accordance with ASTM E1155. A specified ( $F_F$ ) of 50 and an ( $F_L$ ) of 30 should reach this degree of floor flatness and floor level. There is no numerical correlation between F numbers and the deviation from the straight edge, however the above specified

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numbers should achieve a flat floor with minimal deviation in the slab.

Reference ACI 117 and ACI 302.1R. The general contractor should provide a certificate of compliance with the above recommendations.

- H. Concrete subfloor must be clean and free of all foreign materials or objects including, but not limited to, curing compounds and sealers.
- I. Fill cracks, grooves, voids, depressions, and other minor imperfections with Ardex (or equal) cement-based patching/leveling compounds. Follow the manufacturer's directions. Moveable joints must be treated utilizing specific transitioning joint devices depending upon the architect's recommendations. Follow current ASTM F710 guidelines for the preparation of concrete slabs to receive resilient flooring.
- J. Refer to ACI 302.2R "Guidelines for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials" for concrete design and construction.
- K. Concrete slab shall be fortified with continual steel reinforcement. Fiber reinforcement alone shall not be considered adequate fortification.

1.6 *WARRANTY*

A. Materials:

The indoor resilient athletic surfacing shall be covered by the manufacturer against product defects for 8 years. A 3<sup>rd</sup> party limited warranty shall also be provided as reinforcement. The manufacturer of the indoor resilient multipurpose surfacing must provide this warranty upon request.

B. Installation:

The installation of the indoor resilient multipurpose surfacing shall be covered against poor workmanship and faulty installation by a two (2) year written, limited warranty provided by the contractor performing/overseeing the installation.

C. The **Synthetic Flooring Manufacturer's Warranty** must be supported by an insured warranty policy. **A copy of the Warranty policy must be provided with the Bid Submittal and include the following features:**

- 1- The policy must be pre-paid.
- 2- The policy shall be provided by a third-party insurer with an A.M. Best financial strength rating of A or better.
- 3- The policy shall not be a re-insurance or off-shore policy or a letter of credit.
- 4- Insured warranty coverage shall be for the full 100% replacement value of the total square footage installed.
- 5- Insured warranty coverage shall apply to the full 8-year period from substantial completion date of project with no uninsured periods or periods of self-insurance.
- 6- The policy must have a zero deductible.
- 7- Insured warranty coverage shall specifically provide for reimbursement to the warranty holder (i.e., the Participating Public Agency) in the event of a bankruptcy of the synthetic flooring provider.
- 8- Insured warranty coverage shall offer a minimum **limit of \$13,000,000 per claim and aggregate per annum.**

1.7 *ADDITIONAL MATERIALS*

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Furnish to the owner additional materials containing a total of at least 1% of each different color or design of the indoor resilient athletic surfacing used on the project.

1.8 *LEED™ CERTIFICATION*

The indoor resilient athletic surfacing should be able to help this facility to achieve points towards *LEED™ certification*. Flooring system must be certified by FloorScore.

LEED categories positively affected by the indoor resilient athletic surfacing:

Product Type			Vinyl
<b>Total Potential Credits</b>			11
<b>Building Reuse Maintain Interior Nonstructural Elements</b>	<b>MR 1.2</b>	Renovation	1
<b>Construction Waste Management</b>	<b>MR 2</b>	Renovation	2
<b>Construction Waste Management Materials Reuse</b>	<b>MR 3</b>	Renovation	2
	<b>5 % - 1 point</b>		
	<b>10% - 2 points</b>		
<b>Recycled Content</b>	<b>MR 4</b>	New/Renovation	2
	<b>20% - 2 points</b>		
<b>Indoor Environmental Air Quality Low VOC Adhesives/Sealants</b>	<b>IEQ 4.1</b>	New/Renovation	1
<b>Low-emitting Materials Paints and Coatings</b>	<b>IEQ 4.2</b>	New/Renovation	1
<b>Low-Emitting Materials Flooring Systems</b>	<b>IEQ 4.3</b>	New/Renovation	1
<b>Low-Emitting Materials Composite Wood and Agrifiber Products</b>	<b>IEQ 4.4</b>	New/Renovation	1
	<b>Plywood Substructures</b>		
	<b>Wood and Combi-Systems</b>		

**PART 2 - PRODUCTS**

2.1 *MANUFACTURERS*

The basis of the design for the indoor resilient multipurpose surfacing is Omnisports 6.5 mm and Tarkolay as manufactured by FieldTurf USA, Inc. All other installation accessories and related components must be either made or approved by the indoor resilient athletic surfacing manufacturer. Other products may be approved as equal if deemed qualified and submitted in accordance with the General Conditions. Test reports confirming compliance from an Independent Sports Laboratory must be provided along with samples, technical data, installation, maintenance, and warranty prior to acceptance as an alternative product.

2.2 *MATERIALS*

Omnisports 8.3 mm - Prefabricated sport surface with wood flooring design and slightly textured embossed surface as supplied by FieldTurf USA, Inc. Embossing of wood design and solid colors must be the same; varying embossing or surface textures will not be allowed. Printing of wood design shall closely resemble standard wood strip flooring in size, color, board length, and grain appearance. The wood design shall be protected by a clear

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layer of pure PVC (Polyvinyl Chloride) and Top Clean, a factory applied UV cured urethane treatment. Intermediate layers shall be fortified with a non-woven fiberglass grid for increased dimensional stability. The foam force reduction layer shall be high-density closed cell PVC foam with honeycomb embossing, and is applied in one continuous manufacturing process. Laminated or adhered foam layers will not be allowed. Field constructed products will not be accepted. Physical properties of the indoor resilient athletic surfacing shall conform to the following minimums:

Width	.....	6'6" (2 m)
Length	.....	85' (25.9m) approx.
Total Thickness	.....	8.3 mm
Vertical Deformation	PASSED	ASTM F2772
Rolling Load	PASSED	<.50 mm (EN 1569 {11/1999})
Surface Finish Effect	PASSED	ASTM F2772 (80 – 110)
Allergy and Asthma Friendly	ASP: 05-01/101	Certified Compliant
Abrasion Resistance	Excellent	0.02 g (1000 cycles) ASTM D3389
Sound Insulation	Excellent	+/- 20 dB (ISO 717/2)
In Room Sound Insulation	Excellent	62 dB (NF S31-074)
Ball Rebound	PASSED	ASTM F2772 > 90%
Shock Absorption	PASSED	ASTM F2772 Category 3

Tarkolay – A high quality low permeance slip sheet vapor retarder designed to separate the installed system from the substrate below. Tarkolay as manufactured by Fieldturf can be used below, on, or above grade substrates that experience elevated moisture conditions. Moisture tolerances shall not exceed 15 lbs per ASTM F1869 or 96% RH per ASTM F2170.

- Physical properties of the indoor resilient athletic surfacing shall conform to the following minimums:

Width	.....	6'6" (2 m)
Length	.....	147'7" (45 m) approx.
Total Thickness	.....	1.3 mm
Dimensional Stability	PASSED	.01% (EN 1434)
Permeance	Excellent	<0.20 (ASTM E96)

- Color: As available from the indoor resilient athletic surfacing manufacturer's standard range.
- Hardwood Design Series: A wood look design as available from the indoor resilient athletic surfacing manufacturer's standard range.
- Texture: Texture to remain consistent between solid colors and wood design when blending colors.

B. Welding Rod:

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As supplied by the indoor resilient athletic surfacing manufacturer or supplier. Color to blend with the indoor resilient athletic surfacing color or design. All seams shall be welded to create a monolithic and impermeable surface.

- C. Adhesive:  
As approved by the indoor resilient athletic surfacing manufacturer.
- D. Game Line Paint Primer:  
As approved by the indoor resilient athletic surfacing manufacturer.
- E. Game Line Paint:  
As approved by the indoor resilient athletic surfacing manufacturer. Colors are to be selected from the manufacturer's standard range.

**PART 3 - EXECUTION**

3.1 *EXAMINATION*

- A. It is the responsibility of the general contractor/construction manager to ensure that project/site conditions are acceptable for the installation of the indoor resilient athletic flooring.
- B. Verify that the area in which the indoor resilient athletic surfacing will be installed is dry and weather tight. Verify that permanent heat, light and ventilation is installed and operable.
- C. Verify that all other work that could cause damage, dirt and dust or interrupt the normal pace of the indoor resilient athletic flooring installation is completed or suspended.
- D. Verify that there is a stable room temperature of at least 65°F.
- E. Verify that there are no foreign materials or objects on the subfloor and that the subfloor is clean and ready for installation.
- F. *Installation with Tarkolay to Concrete Subfloor* : moisture content less than 12 pounds/1,000 sq.ft./24 hours when tested using calcium chloride per ASTM F 1869 or no more than 92 % RH when tested per ASTM F2170.
- G. If both tests are performed, use the highest value. Do not average the results of the tests. Report all field test results in writing to the General Contractor, Architect, and End User prior to installation.
- H. Verify that the concrete subfloor surface pH level is within the 7 - 11 range.
- I. Document the results indicating the slab is within manufacturer's tolerances for slab deviation.

3.2 *PREPARATION OF SURFACES*

- A. Sand the entire surface of the concrete slab.
- B. Sweep the concrete slab so as to remove all dirt and dust. If a sweeping compound is to be used it must be a sweeping compound that does not contain oil or other items that may inhibit the adhesive bond.
- C. Slab must be dust free. In the event that dust impairs adhesive bond, priming the slab prior to application of adhesive may be necessary. Follow installation guidelines.

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3.3 *TESTING FOR MOISTURE*

- A. Project must be tested prior to installation with either ASTM F8169 (Calcium Chloride) or ASTM F2170 (In-Situ Probe). If both tests are performed, the higher values must be respected. It is not acceptable to perform both tests and submit a value from one type of test as a measure of compliance with Tarkett Sport's installation guidelines. Refer to FieldTurf USA, Inc. documentation for more information.

3.4 *INSTALLATION*

- A. The installation area shall be closed to all traffic and activity for a period to be set by the indoor resilient athletic surfacing installer. The indoor resilient athletic surfacing installation shall not begin until the installer is familiar with the existing conditions.
- B. All necessary precautions should be taken to minimize noise, smell, dust, the use of hazardous materials and any other items that may inconvenience others.
- C. Install the indoor resilient athletic surfacing in strict accordance with the indoor resilient athletic surfacing manufacturer's written instructions.
- D. Install the indoor resilient athletic surfacing minimizing cross seams. Provide a seam diagram during the submittal process for approval prior to installation.
- E. Paint game lines using approved game line paint primer and game line paint in strict accordance with the game line paint manufacturer's instructions.
- F. Install appropriate threshold plates or transition strips where necessary.

3.5 *CLEANING*

- A. Remove all unused materials, tools, and equipment and dispose of any debris properly. Clean the indoor resilient athletic surfacing in accordance with the manufacturer's instructions.

3.6 *PROTECTION*

If required, protect the indoor resilient athletic surfacing from damage using coverings approved by the manufacturer until acceptance of work by the customer or their authorized representative.

3.6 *RELATED STANDARDS AND GUIDELINES*

- A. ASTM F1869 "Standard Test Method for Measuring Moisture Evaporation Rate of Concrete Subfloor Using Anhydrous Calcium Chloride"
- B. ASTM F2170 "Standard Test Method for Determining Relative Humidity In Concrete Floor Slabs Using In-Situ Probes"
- C. ASTM F710 "Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring"
- D. ACI 302.2R-06 "Guideline for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials"

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**END OF SECTION**