

**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:
  - 1. Manufacturer's promotional brochures, specifications and installation instructions
- B. Manufacturer Certifications:
  - 1. Provide certification that accurately identifies the Original Equipment Manufacturer (OEM) of flooring furnished for this project including manufacturer's name, address and factory location.
  - 2. Suppliers of private label flooring for this project must identify themselves as such and fully disclose the OEM information listed above.
  - 3. All "manufacturer" requirements in these specifications must be complied with by the OEM, including warranties, certifications, qualifications, product data, test results, environmental requirements, performance data, etc.
- C. 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.
- D. 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 competent in the techniques required by the manufacturer.
  - 5. The installer of the indoor resilient multipurpose surfacing shall have a minimum of five (5) years of experience in the field installing indoor resilient multipurpose surfacing and have worked on at least five (5) projects of similar size, type and complexity.

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- B. Certifications:
  - 1. Installer to submit the indoor resilient athletic surfacing manufacturer's certification attesting that they are a trained 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.
- C. Testing:
  - 1. Tests shall be relative for multi-purpose use with certificates from independent testing resources to be made available upon request.
  - 2. Test results shall be no more than 5 years old and performed according to ASTM 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:
  - 1. Store the material in a secure, clean and dry location.
  - 2. Maintain temperature between 55° and 85° Fahrenheit.
  - 3. Store the indoor resilient athletic surfacing rolls in an upright position on a smooth flat surface immediately upon delivery to jobsite.
  - 4. 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.
- 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 11 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

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edge. However, the above specified 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. 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 surfacing product defects for 30 years. 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.

**1.7 ADDITIONAL MATERIALS**

- A. 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**

- A. 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.
- B. LEED categories positively affected by the indoor resilient athletic surfacing:

Product Type			PU with Recycled Base Layer
<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>Recycled Content</b>	<b>MR 4</b>	New/Renovation	2
	<b>20% - 2 points</b>		
<b>Regional Materials</b>	<b>MR 5</b>	New/Renovation	2
	<b>20% - 2 points</b>		
<b>Materials and Resources Rapidly Renewable Materials</b>	<b>MR 6</b>	New/Renovation	1
<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

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***PART 2 - PRODUCTS***

2.1 *MANUFACTURERS*

- A. The basis of the design for the indoor resilient multipurpose surfacing is Polyturf Plus Elite Pad and Pour 9+2 and Lumaflex system as manufactured by Tarkett.
- B. All other installation accessories and related components must be either made or approved by the indoor resilient athletic surfacing manufacturer.
- C. Other products may be approved as equal if deemed qualified and submitted in accordance with the General Conditions.
- D. 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*

Flooring System:

Polyturf Plus Elite 9+2 (11mm total thickness) consists of a recycled resilient sheet force reduction layer integrated with seamless, liquid applied, and self-leveling 2 mm polyurethane topcoat.

A durable protective color coat shall be applied to a thickness of approximately 7 mils. The finished product shall be a seamless surface heterogeneous resilient multipurpose synthetic flooring system. System shall comply with the following criteria. Colors to be selected from manufacturer's standard range.

The Lumaflex System shall incorporate Lumaflex double tongue and grooved multi-ply engineered panels, force reduction cushion, and appropriate vapor retarder.

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

Properties	Standards	PolyTurf Plus Pad & Pour		
		Base Mat + Wear Coat +Top Coat		
<b>Base Mat Properties</b>				
<b>Width</b>		59"		
<b>Length</b>		82 lin. ft		
<b>Weight</b>		1.2 lb/sq ft		
<b>Density</b>	ASTM D297	.67 min (g/cm <sup>3</sup> )		
<b>Tensile Strength</b>	ASTM D412	88 psi (Die Cast C)		
<b>Elongation</b>	ASTM D412	48.5% (Die Cast C)		
<b>Compression</b>	ASTM F36	@50 psi 87%	@100 psi 91%	@200 psi 91%
<b>Tear Strength</b>	ASTM D624	30 PPI Die C		
<b>Flexibility</b>	ASTM F147	0-1		
<b>Compression Set B</b>	ASTM D395	37% (25% deflection 158°F/22hrs)		
<b>Compression Set B</b>	ASTM D395	26% (50% deflection 158°F/22hrs)		
<b>2mm Wear Coat Properties</b>				
<b>Shore Hardness</b>	Shore A	80		
<b>Tensile Strength</b>	ASTM D412	1600psi		
<b>Elongation</b>	ASTM D412	150%		
<b>Tear Strength</b>	ASTM D624	122PLI		
<b>Misc Technical</b>				
<b>Environmental Certification</b>	GreenGuard	GreenGuard Plus Certified		
<b>Sports Characteristics</b>				
<b>Overall Thickness</b>		42 mm		
<b>Shock Absorption</b>	ASTM F2772	Class 5		
<b>Ball Bounce</b>	ASTM F2772	>90%		
<b>Vertical Deformation</b>	ASTM F2772	Passed		
<b>Surface Finish Effect</b>	ASTM F2772	Passed		

- B. Adhesive: As approved by the indoor resilient athletic surfacing manufacturer.  
 C. Game Line Paint and Primer: As approved by the indoor resilient athletic surfacing manufacturer.  
 D. Colors selected from standard color range.

**PART 3 - EXECUTION**

3.1 EXAMINATION

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- 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 are 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. Concrete Subfloor: moisture content less than 85% RH when tested per ASTM F2170.
- G. Follow Fieldturf USA, Inc. installation recommendations.
- H. 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.
- I. Verify that the concrete subfloor surface pH level is within the 7 - 11 range.
- J. Document the results confirming 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.
- D. Follow OSHA guidelines.

3.3 *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. Paint game lines using approved game line paint primer and game line paint in strict accordance with the game line paint manufacturer's instructions.
- E. Install appropriate threshold plates or transition strips where necessary.

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2.0 *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*

- A. 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.

3.7 *RELATED STANDARDS AND GUIDELINES*

- A. ASTM F2170 "Standard Test Method for Determining Relative Humidity In Concrete Floor Slabs Using In-Situ Probes"
- B. ASTM F710 "Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring"
- C. ACI 302.2R-06 "Guideline for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials"
- D. ASTM F2772-11 "Standard Specification for Athletic Performance Properties of Indoor Sports Floor Systems"

**END OF SECTION**