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.

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

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. Special Limited Warranty:
   1. Manufacturer's standard form in which manufacturer agrees to repair or replace sports flooring including labor that fails within specified warranty period.
B. Material warranty must be direct from the product manufacturer.
   1. Material warranties from separate or third party insurance providers are not valid.
   2. Material warranties must come from original manufacturer or division thereof. Private label warranties from distributors or brokers are not valid. Supply original point of manufacturing upon request.
C. Failures include, but are not limited to, the following:
   1. Material manufacturing defects.
   2. Surface wear and deterioration to the point of wear-through of wear layer per ASTM F410/ASTM F1303.
   3. Failure due to substrate moisture exposure exceeding 98 percent relative humidity when tested according to ASTM F2170.
D. Warranty Period:
   1. <u>For material defects and surface wear-through:</u> **15** years from date of substantial completion.
   2. <u>For moisture vapor tolerance:</u> **15** years from date of substantial completion.
E. Installer's Limited Warranty:
   1. Installer's standard form in which installer agrees to repair or replace sports flooring that fails due to poor workmanship or faulty installation within the specified warranty period.
   2. Warranty Period: 2 years from date of substantial completion.

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

LEED™ V4 Credit		Contribution
Materials & Resources: Building Product Disclosure & Optimization (BPDO)		
MRc3: Sourcing of Raw Materials	Options 1 & 2	2 Points
MRc4: Material Ingredients	Option 1	1 Point
MRc5: Construction and Demolition Management	Reclamation and Recycling	ReStart® Program

PART 2 - PRODUCTS

2.1 *MANUFACTURERS*

A. The basis of the design for the indoor resilient multipurpose surfacing is Omnisports HPL 9 mm 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*

A. Omnisports HPL 9 mm - Prefabricated sport surface with wood flooring design and slightly textured embossed surface as supplied by Tarkett.
    1. Embossing of wood design and solid colors must be the same; varying embossing or surface textures will not be allowed.
    2. Printing of wood design shall closely resemble standard wood strip flooring in size, color, board length, and grain appearance.
    3. The wood design shall be protected by a clear layer of pure PVC (Polyvinyl Chloride) and TopClean xp, a factory-applied UV cured urethane treatment.
    4. Intermediate layers shall be fortified with a non-woven fiberglass grid for increased dimensional stability.
    5. A high density load resistant underlayment, field constructed and installed per manufacturer's construction specifications incorporated to provide higher load resistance.

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

Width	Omnisports	6’ 6” (2 m)
Length	Omnisports	85’ (25.9m) approx.
Wear Layer	Omnisports	2 mm
Total Thickness	Omnisports HPL	9 mm (7 + 2)
High Density Underlayment	ASTM D297	0.67 g/cm^3
Tear Strength	ASTM D412	410-425 min. Die C
Elongation	ASTM D412	120-125 min. Die C
Static Load	ASTM F970	500 psi
Reaction to Fire	ASTM E648	Class 1
Specular Gloss	EN ISO 2813	13%
Wear Layer	Type 1, Grade 1	ASTM F1303/F410
Taber Abrasion	ASTM D3389	0.02 g (1000 cycles)
Stain Resistance	ASTM F925	Excellent
Moisture Tolerance with Multi-Poxy	ASTM F2170	98% RH
Vertical Deformation	PASSED	ASTM F2772
Surface Finish Effect	PASSED	ASTM F2772 (80 - 100)
Ball Rebound	PASSED	ASTM F2772 >90%
Force Reduction	PASSED	ASTM F2772 Class 2
Phthalate-free technology	—	YES
REACH Compliant	—	YES
Heavy Metals	—	NO
ISO 9001	—	YES
ISO 14001	—	YES

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

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

D. Adhesive: As approved by the indoor resilient athletic surfacing manufacturer.

E. Game Line Paint and Primer: As approved by the indoor resilient athletic surfacing manufacturer.

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 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. *Direct Full Spread Adhering to Concrete Subfloor Multi-Poxy : moisture content less than 98% 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. Install the indoor resilient athletic surfacing minimizing cross seams. Provide a seam diagram during the submittal process for approval prior to installation. Vinyl Sheet Flooring Seams: Comply with ASTM F 1516. Rout joints and heat weld to permanently and seamlessly fuse sections together.
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*

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