

**SECTION 09645**  
**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.
- 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 and sample boards. To be included are actual samples 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 the specified 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:

Submit shock absorption (force reduction) test results of the indoor resilient multipurpose surfacing and sub-structure when tested in accordance with the DIN V 18032-2 standard and certified by an independent testing laboratory approved to perform such testing.

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 manufacturer's 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.

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 8.5 range.
- G. Concrete subfloor moisture content less than five (5) pounds per 1,000 Sq.Ft. per 24 hours when tested using calcium chloride per ASTM F 1869.
- H. 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

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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.

- I. Concrete subfloor must be clean and free of all foreign materials or objects.
- J. Fill cracks, grooves, voids, cuts and joints with Ardex Portland-based patching/leveling compounds. Follow the manufacturer's directions. Joints designed to allow expansion and contraction of the slab may exceed the floor patching manufacturer's limitations/recommendations. Moveable joints may have to be treated utilizing specific transitioning joint devices depending upon the architect's recommendations.

1.6 **WARRANTY**

A. **Materials:**

The indoor resilient athletic surfacing shall be covered against manufacturing defects by a two (2) year written, limited warranty. The manufacturer of the indoor resilient multipurpose surfacing must provide this warranty.

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 manufacturer-approved installer.

C. **Wear:**

The indoor resilient multipurpose surfacing wear layer shall be covered against wear through by a fifteen (15) year written, limited warranty. This warranty must be provided by the manufacturer of the indoor resilient athletic surfacing.

D. **Durability:**

The sub-structure shall be warranted for a minimum of 2 years against loss of resiliency of the foam channels or breakdown of the double tongue-and-groove connection joint.

1.7 **ADDITIONAL MATERIALS**

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 and 3% of the sub-structure material.

1.8 **LEED™ CERTIFICATION**

The indoor resilient athletic surfacing should be able to help this facility to achieve up to seven points towards *LEED™ certification*.

LEED categories positively affected by the indoor resilient athletic surfacing

- Water Efficiency	credit reference WE 3.1 & 3.2	Points Attainable 1- 2
- Materials & Resources	credit reference MR 4.1 & 4.2	Points Attainable 1- 2
- Indoor Environmental Quality	credit reference EQ 4.1 & 4.2	Points Attainable 1
- Design Innovation	credit reference ID 1.1 & 1.4	Points Attainable 1- 2

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**PART 2 - PRODUCTS**

2.1 *MATERIALS.*

A. Indoor Resilient Athletic Surfacing:

All products submitted for proposal/approval must meet or exceed the following listed performance characteristics. Products submitted may include but is not limited to Pad & Poured, Solid PVC, and Rubber.

(Note: No substitutions will be accepted if the flooring material does not meet or exceed the minimum technical requirements specified below.)

B. The wood subfloor system shall consist of a DIN patented Certified Birch plywood laminate having a thickness of 23mm and surface width of 137mm. The plywood laminates are glued together at double tongue-and-groove joints. Cushioning is provided by two Evazote 50 extruded foamed-plastic strips, 10mm thick and bonded to the underside along the entire length of the laminate. Both foamed-plastic strips are recessed into 5mm grooves cut into the underside of the laminates. By this means, compression of the foamed-plastic is limited to max. 50% of the minimal thickness.

a. Performance properties of the wood subfloor shall conform to the following:

Shock Absorption.....	63%
Deflection.....	2.6mm
W 500 Load Propagation.....	5%
Ball bounce return.....	94%
Rolling load.....	more than 1500 N

C. EBS – Evolution Barrier System is an integral part of the Evolution Installation System providing service for up to **12 lbs** of moisture emissions as outlined in ASTM F2170 and up to 90% Relative Humidity as outlined in ASTM F2170.

D. The Taraflex Multi- Use 5.0 resilient athletic PVC sheet vinyl shall consist of 5.0 mm total thickness, heterogeneous, closed cell foam backed, and with an over 95% pure polyvinyl chloride (PVC) wear layer. A fungistatic and bacteriostatic treatment shall be incorporated throughout the wear layer. The surface shall be treated with a photo reticulated factory applied UV polyurethane coating.

a. Physical Properties of the indoor resilient athletic surfacing shall conform to the following:

Roll width.....	4' 11"
Roll length.....	96' (max)
Total thickness.....	5.0mm
Fire Rating.....	less than .45
Anti-bacterial/fungicidal treatment.....	SANOSOL

b. Color: As available from the indoor resilient athletic surfacing manufacturer's standard range.

c. Hardwood Design Series: A wood look design as available from the indoor resilient athletic surfacing manufacturer's standard range.

d. Texture: Slightly grained (Hardwood Design Series) or textured (Colors)

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- D. Welding Rod for PVC floor:  
As supplied by the indoor resilient athletic surfacing manufacturer or supplier. Color to match the indoor resilient athletic surfacing color or design. All seams shall be welded to create a monolithic and impermeable surface.
- E. Adhesive:  
As approved by the indoor resilient athletic surfacing manufacturer.
- F. Game Line Paint Primer:  
As approved by the indoor resilient athletic surfacing manufacturer.
- G. Game Line Paint:  
As approved by the indoor resilient athletic surfacing manufacturer. Colors are to be selected from the manufacturer's standard range.
- H. Resilient Base to be vented as recommended by the flooring manufacturer.
- I. Transitions shall conform to local building codes and comply to ADA requirements. Use Pemko aluminum thresholds or equal.

**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. Review and document the results of the moisture tests, to verify that the moisture evaporative rate is less than five (5) pounds per 1,000 sq.ft. per 24 hours per ASTM F1869.
- G. Review the results of the tests for concrete subfloor surface pH, done by others to verify that the concrete subfloor surface pH level is within the 7 - 8.5 range.
- H. Document the results indicating the slab is within manufacturer's tolerances for slab deviation.

3.2 *PREPARATION OF SURFACES*

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- A. Remove foreign debris from the surface of the concrete.
- B. Sweep the concrete slab so as to remove all dirt and dust.

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 wood substructure according to manufacturer's recommendations.
- D. Install the indoor resilient athletic surfacing in strict accordance with the indoor resilient athletic surfacing manufacturer's written instructions.
- E. Install the indoor resilient athletic surfacing minimizing cross seams for PVC floor. Provide a seam diagram during the submittal process for approval prior to installation.
- F. Paint game lines using approved game line paint primer and game line paint in strict accordance with the game line paint manufacturer's instructions.
- G. Install appropriate threshold plates or transition strips where necessary.

3.4 *CLEANING*

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

3.5 *PROTECTION*

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

**END OF SECTION**