



SECTION 02790

ATHLETIC AND RECREATIONAL SURFACING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Resilient interlocking fitness flooring.

1.2 RELATED SECTIONS

1.3 REFERENCES

- A. ASTM C 67 - Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile.
- B. ASTM D 395 - Standard Test Methods for Rubber Property--Compression Set.
- C. ASTM D 412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers--Tension.
- D. ASTM D 573 - Standard Test Method for Rubber-Deterioration in an Air Oven.
- E. ASTM D 624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
- F. ASTM D 1667 - Standard Specification for Flexible Cellular Materials-Vinyl Chloride Polymers and Copolymers (Closed-Cell Foam).
- G. ASTM D 2047 - Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine.
- H. ASTM D 2859 - Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials.
- I. ASTM E 108 - Standard Test Methods for Fire Tests of Roof Coverings.
- J. ASTM E 303 - Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester.
- K. ASTM F 1292 - Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment.
- L. US Consumer Product Safety Commission (CPSC) Handbook for Playground Safety.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- D. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.
- E. Certificate of Compliance: Submit manufacturer's certificate of compliance indicating materials comply with specified requirements.
- F. Manufacturer's Project References:
 - 1. Submit list of successfully completed projects.
 - 2. Include project name and location, name of architect, and type and quantity of surfacing furnished.
- G. Installer's Project References:
 - 1. Submit list of successfully completed projects.
 - 2. Include project name and location, name of architect, and type and quantity of surfacing installed.
- H. Maintenance Instructions: Submit manufacturer's maintenance and cleaning instructions.
- I. Warranty: Submit manufacturer's standard warranty.

1.5 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Manufacturer shall meet at least one of the following requirements.
 - 1. Continuously engaged in manufacturing of surfacing products of similar type to that specified, with a minimum of 10 years successful experience.
 - 2. Furnished a minimum of 1,000,000 square feet per year of surfacing products of similar type to that specified.
- B. Installer's Qualifications:
 - 1. Successful experience in installation of surfacing of similar type to that specified, with a minimum of 25 projects completed within last 5 years.
 - 2. Employ persons trained for installation of surfacing products.
 - 3. Approved by manufacturer.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. Storage:
 - 1. Store materials in accordance with manufacturer's instructions.
 - 2. Store materials in a dry storage area at a minimum temperature of 50 degrees F (10 degrees C) for a minimum of 48 hours before installation.
 - 3. Store materials to be installed indoors at the ambient temperature of the installation location for a minimum of 48 hours before installation.
 - 4. Protect materials from direct sunlight before installation.

5. Store adhesive in a dry area at a minimum temperature of 50 degrees F (10 degrees C).
- C. Handling: Protect materials during handling and installation to prevent damage.
- D. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.7 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
 1. Material Temperature: Ensure surface temperature of surfacing tiles is a minimum of 50 degrees F (10 degrees C) at time of installation.
 2. Air Temperature for Interior Installations: Ensure air temperature is at the same temperature as anticipated during normal operation.
 3. Air Temperature for Exterior Installations: Ensure air temperature is a minimum of 40 degrees F (4 degrees C) and a maximum of 90 degrees F (32 degrees C) for a minimum of 24 hours before and during installation.

1.8 WARRANTY

- A. Materials and Workmanship: Fitness flooring shall be warranted for defects in materials and workmanship for 10 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Fitness Flooring, Inc., which is located at: 6801 Lake Plaza, A105, Indianapolis, IN 46220; Toll Free Tel: 800-428-5306; Tel: 317-849-6181; Fax: 317-842-5384; Email: sales@fitnessfloors.com; Web: www.fitnessfloors.com
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.
 1. Type: Premium Series.
 2. Type: Plus Series.
 3. Material: Compression-molded, recycled rubber and binding agents.
 4. Tile Locking: U-shaped male and female configuration on all four sides to lock tiles to adjacent tiles.
 5. Top Edges: Chamfered.
 6. Tile Bottom: Hollow core stanchion pattern. Stanchions shall have density equivalent to wear layer.
 7. Wear Layer:
 - a. Plus Series: Elongated SBR rubber buffings. Pigmentation used to achieve color. Minimum 0.375 inch (9.5 mm) thick.
 - b. Premium Series: Virgin EPDM rubber granules. Minimum 0.250 inch (6 mm) thick.
 8. Size: 24 inches by 24 inches (610 mm by 610 mm), plus or minus 1/8 inch (3 mm).
 9. Thickness: 1.75 inches-(3 feet CFH) (44.5 mm (914 mm)).
 10. Premium Series Blend: 25 percent color, 75 percent black.

11. Premium Series Blend: 50 percent color, 50 percent black.
12. Premium Series Blend: 75 percent color, 25 percent black.
13. Premium Series Blend: 90 percent color, 10 percent black.
14. Color: As selected by Architect.

D. **Material Characteristics:**

1. Freeze Thaw, ASTM C 67: No deterioration.
2. Rubber Deterioration / Air Oven, ASTM D 573: No deterioration.
3. Slip Resistance:
 - a. ASTM E 303:
 - 1) Dry: 102.
 - 2) Wet: 62.
 - b. ASTM D 2047:
 - 1) Dry: 0.81.
 - 2) Wet: 0.82.
4. Compression Deflection, ASTM D 1667: 29.5 psi (2.1 kgs/sq. cm) to 25 percent compression.
5. Compression Set, ASTM D 395: 4.37 percent permanent set.
6. Tensile Strength, ASTM D 412: 107 psi (7.5 kgs/sq. cm).
7. Elongation at Break, ASTM D 412: 165 percent.
8. Tear Strength, ASTM D 624: 33.1 psi (2.3 kgs/sq. cm).
9. Wear Surface Density (Durability): 60 pcf (961 kg/cu. m) minimum.
10. Flammability:
 - a. Burning Pill, ASTM D 2859: Pass.

E. **Accessories:**

1. Corners:
 - a. Prefabricated outside and inside corners.
 - b. Material: Same as surfacing tiles.
2. Ramps:
 - a. Prefabricated Ramps: "DuraFLEX Jr."
 - b. Prefabricated ADA-Compliant Ramps: "Duraflex ADA".
 - c. Material: Same as surfacing tiles.
3. Adhesive:
 - a. Waterproof single-component, 100 percent solids, polyurethane.
 - b. Provided and approved by manufacturer.

2.2 FITNESS FLOORING

A. **Resilient Interlocking Premium Series Fitness Flooring:** Duraflex Premium Series as manufactured by Fitness Flooring, Inc.

1. Manufactured with an EPDM rubber granule on the wear layer to provide a speckled appearance. Any combination of Premium Series colors can be used to create a speckled appearance.
2. Premium Series Blend: 25 percent color, 75 percent black.
3. Premium Series Blend: 50 percent color, 50 percent black.
4. Premium Series Blend: 75 percent color, 25 percent black.
5. Premium Series Blend: 90 percent color, 10 percent black.
6. Color: As selected by Architect.

B. **Resilient Interlocking Plus Series Fitness Flooring:** Duraflex Plus Series as manufactured by Fitness Flooring Inc.

1. Manufactured utilizing 100 percent recycled rubber. Elongated rubber strands are utilized in the top wear course of the product for increased durability and a smooth visual texture. Color is achieved through the use of specially formulated pigments.

2. Color: As selected by Architect.
- C. Tile Construction:
1. Hollow Core Pedestal Design: Evenly distributes fitness equipment weight over 64 pedestals per tile.
 2. Omni-Directional Locking Design: Locks the system firmly in place with or without the use of adhesive.
 3. Wear Layer: High compression wear layer.
 - a. Type: Plus Series, elongated SBR rubber buffings. Pigmentation used to achieve color. Minimum 0.375 inch (9.5 mm) thick.
 - b. Type: Premium Series, virgin EPDM rubber granules. Minimum 0.250 inch (6 mm) thick.
 4. Size: 24 inches by 24 inches (610 mm by 610 mm), plus or minus 1/8 inch (3 mm).
 5. Thickness: 1.75 inches (44.5 mm).
 6. Freeze Thaw, ASTM C 67: No deterioration.
 7. Rubber Deterioration / Air Oven, ASTM D 573: No deterioration.
 8. Slip Resistance:
 - a. ASTM E 303:
 - 1) Dry: 102.
 - 2) Wet: 62.
 - b. ASTM D 2047:
 - 1) Dry: 0.81.
 - 2) Wet: 0.82.
 9. Compression Deflection, ASTM D 1667: 29.5 psi (2.1 kgs/sq. cm) to 25 percent compression.
 10. Compression Set, ASTM D 395: 4.37 percent permanent set.
 11. Tensile Strength, ASTM D 412: 107 psi (7.5 kgs/sq. cm).
 12. Elongation at Break, ASTM D 412: 165 percent.
 13. Tear Strength, ASTM D 624: 33.1 psi (2.3 kgs/sq. cm).
 14. Wear Surface Density (Durability): 60 pcf (961 kg/cu. m) minimum.
 15. Flammability:
 - a. Burning Pill, ASTM D 2859: Pass.
 - b. Roof Covering, ASTM E 108: Class A.
- D. Accessories:
1. Corners:
 - a. Prefabricated outside and inside corners.
 - b. Material: Same as surfacing tiles.
 2. Ramps:
 - a. Prefabricated Ramps: "Duraflex Jr."
 - b. Prefabricated ADA-Compliant Ramps: "Duraflex ADA".
 - c. Material: Same as surfacing tiles.
 3. Adhesive:
 - a. Waterproof single-component, 100 percent solids, polyurethane.
 - b. Provided and approved by manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Subsurface: Install adhesive at the perimeter of the installation as recommended by the manufacturer.
- D. Variations in Elevation: Repair variations in elevation of completed subsurface greater than plus or minus 1/4 inch (6 mm) over 10 feet (3 m) in any direction.

3.3 INSTALLATION

- A. Install surfacing in accordance with manufacturer's instructions at locations indicated on the Drawings.
- B. Ensure prepared subsurface is dry and clean.
- C. Layout surface pattern in accordance with manufacturer's instructions.
- D. Install tiles in a single installation session.
- E. Apply adhesive in accordance with manufacturer's instructions for tile-to-tile and perimeter tile-to-base installation.
- F. When practical, install cold seams in areas containing graphics and as indicated on the Drawings.

3.4 CLEANING

- A. Clean tiles in accordance with manufacturer's instructions.

3.5 PROTECTION

- A. Protect completed tiles from damage during construction.

END OF SECTION