

# 3-Part Specification: Performance UltraTile™ Play



## **SURFACE**AMERICA®

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### **PART 1 – GENERAL**

#### **1.01 SUMMARY**

A. Section Includes: Rubber tile playground surfacing system.

**Specifier Note:** Revise paragraph below to suit project requirements. If a reader of this section could reasonably expect to find a product or component specified in this section, but it is actually specified elsewhere, then the related section number(s) should be listed in the paragraph below. In the absence of related sections, delete paragraph below.

**Specifier Note:** Site materials and methods, drainage, playground equipment, fencing, substrate preparation and similar work are provided by others and are described in other sections. Consult manufacturer for specific substrate preparation requirements. Edit, retain or delete paragraph below to suit project requirements and specifier practice.

B. Related Sections: Division 2 Sitework Sections: Materials and Methods, Excavation, Asphalt Paving, Concrete Paving, Sub-Drainage, Storm Drainage, Fencing, Playground Equipment and Structures.

**Specifier Note:** Article below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain References Article when specifying products and installation by an industry reference standard. If retained, list standard(s) referenced in this section. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Conditions of the Contract or Division 1 References Section may establish the edition date of standards. This article does not require compliance with standard. It is a listing of all references used in this section.

#### **1.02 REFERENCES**

A. American Society for Testing and Materials (ASTM):

1. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers-Tension.
2. ASTM D624 Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
3. ASTM D2047 Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine.

4. ASTM D2859 Standard Test Method for Flammability of Finished Textile Floor Covering Materials.
5. ASTM E303 Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester.
6. ASTM F1292 Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment.
7. ASTM F1951 Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment.
8. ASTM D3389 Abrasion Testing.
9. ASTM D297 Standard Test Methods for Rubber Products-Chemical Analysis-Density.
10. DIN 1835 Part 6-Permeability to Water.
11. U. S. Environmental Protection Agency Method 3052:1996.

Specifier Note: Article below should be restricted to statements describing design or performance requirements and functional (not dimensional) tolerances of a complete system. Limit descriptions to composite and operational properties required to link components of a system together and to interface with other systems.

### **1.03 SYSTEM DESCRIPTION**

A. Performance Requirements: Provide a single layer rubber tile playground surfacing system which has been designed, manufactured and installed to meet the following criteria:

1. Shock Attenuation (ASTM F1292) - 2-1/2" meets 5' critical fall height. To achieve 6', 8' or 10' critical fall heights, install a 2-1/2" Ecore polyfoam pad under the 2-1/2" tiles.
  - a. Gmax - Less than 200.
  - b. Head Injury Criteria - Less than 1000.
2. Flammability (ASTM D2859) - Pass.
3. Tensile Strength (ASTM D412) - 180 lbs/in<sup>2</sup> min.
4. Water Permeability Rate: 0.034 cm/sec.
5. Accessibility: Comply with requirements of ASTM F1951-08 - Pass.
6. Lead Content: (US EPA Method 3052: 1996) - Pass.
7. Void Volume: 42% min 2-1/2". 50% min 4-14".
8. Coefficient of Thermal Expansion: .0011 in/ft/° F.
9. Wear Surface Density: 70 lbs/cu ft min.
10. Abrasion Testing (ASTM D3389): Less than 0.010" lost or less than 1 g lost.

11. Elongation At Break (ASTM D412): 70% min.

**Specifier Note:** Article below includes submittal of relevant data to be furnished by Contractor before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Division 1 Submittal Procedures Section.

#### **1.04 SUBMITTALS**

A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.

B. Product Data: Submit manufacturer's product data and installation instructions.

C. Verification Samples: Submit manufacturer's standard verification samples of 9" x 9" (229 x 229 mm) minimum.

D. Quality Assurance/Control Submittals: Submit the following:

1. Certificate of qualifications of the playground surfacing installer.

E. Closeout Submittals: Submit the following:

1. Warranty documents specified herein.

**Specifier Note:** Article below should include statements of prerequisites, standards, limitations and criteria that establish an overall level of quality for products and workmanship for this section. Coordinate article below with Division 1 Quality Assurance Section.

#### **1.05 QUALITY ASSURANCE**

A. Qualifications: Utilize an installer having experience with projects of similar scope and complexity.

**Specifier Note:** Article below should include specific protection and environmental conditions required during storage. Coordinate article below with Division 1 Product Requirements Section.

#### **1.06 DELIVERY, STORAGE & HANDLING**

A. General: Comply with Division 1 Product Requirement Section.

B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

C. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at a minimum temperature of 20 degrees F (-7 degrees C) and a maximum temperature of 100 degrees F (38 degrees C).

**Specifier Note:** In article below, state physical or environmental limitations or criteria for installation such as weather, temperature, humidity, ventilation or illumination required for proper installation or application.

#### **1.07 PROJECT/SITE CONDITIONS**

A. Environmental Requirements: Install surfacing system when minimum ambient temperature is 40 degrees F (1 degree C) and maximum ambient temperature is 90 degrees F (32 degrees C). Do not install in steady or heavy rain.

**Specifier Note:** Coordinate article below with Conditions of the Contract and with Division 1 Closeout Submittals (Warranty) Section. Use this article to require special or extended warranty or bond covering the work of this section.

## 1.08 WARRANTY

A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.

B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under contract documents.

C. Proper drainage is critical to the longevity of the Performance UltraTile Play surfacing system. Inadequate drainage will cause premature breakdown of the system in affected areas; and void the warranty.

**Specifier Note:** Coordinate subparagraph below with manufacturer's warranty requirements.

1. Warranty Period: 10 years from date of product shipment.

## PART 2 – PRODUCTS

**Specifier Note:** Retain article below for proprietary method specification. Add product attributes, performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

### 2.01 RUBBER TILE PLAYGROUND SURFACING SYSTEM

**Specifier Note:** Retain or delete paragraph below per project requirements and specifier's practice.

A. Manufacturer: Surface America, Inc.

1. Contact: PO Box 157, Williamsville, NY 14231; Telephone: (800) 999-0555, (716) 632-8413; Fax: (716) 632-8324; E-mail: [info@surfaceamerica.com](mailto:info@surfaceamerica.com); website: <http://www.surfaceamerica.com>.

B. Proprietary Products/Systems. Rubber tile playground surfacing system, including the following:

1. Performance UltraTile Play:

a. Material: Performance UltraTile Play is a factory-molded surface composed of high-quality, 100% post-consumer SBR (Styrene Butadiene Rubber) tire rubber and EPDM colored granules bound together by a wear and weather resistant polyurethane and a 3 mm top wear layer with tapered, conical support legs. **Specifier Note:** The type of playground equipment determines the required tile thickness. Depending on ASTM F1292 requirements for critical fall height 5' (1.5 m), use just 2-1/2" (63.5 mm) tile. For critical fall height of 6, 8' or 10' (1.8, 2.4 or 3.0 m), install 2-1/2" (63.5 mm) Ecore polyfoam pad under 2-1/2" (63.5 mm) tile. Specify project requirements below and coordinate with working drawings.

b. Thickness and Weight: 2-1/2" thick Performance UltraTile Play: 26 lbs. (12 kg) per tile.

c. Colors:

Tile Colors: [Midnight] [Cherry Blast] [Blueberry Pie 2] [Sour Apple 2] [Rock Candy 2] [Caramel Corn 2] [Funnel Cake 2] [Lemonade] [Orangesicle] [Grape Slushie] [Licorice].

Accessories Colors (Accessories are not manufactured with a Performance UltraTile Play top wear layer. Accessory pieces are available only in 100% black [Midnight].

2. Ecore Polyfoam Pad:

a. Material: The shock-absorbing Ecore Polyfoam Pad is made from 99% recycled, non-contaminated post-industrial, cross-link, closed-cell polyethylene foam. The non-degradable product is 100% recyclable. The highly porous pad features a geotextile fabric on one side to inhibit weed growth. The highly elastic material is completely free of rubber, lead and heavy metals.

b. Pad Panels

Dimensions: 39-1/16" x 90-9/16" panels

Thickness: Direct 2-1/4"

Weight: Average .85 – 1.2 lbs per square foot

Density: Average 5-7 lbs/cubit feet

Tensile Strength: ASTM 3574 34-36 PSI

Drainage Characteristics: Horizontal Flow Rate Average, ASTM 4716, 250 PSF; 41% Slope 5.1709 Gal/Min/Ft

Vertical Permeability: Average ASTM D 2474 >36 Gal/Min/Sq Ft

Transmissivity: m2/sec Average ASTM 4716, 2.14E-003

**Specifier Note:** Edit Article below to suit project requirements. If substitutions are permitted, edit text below. Add text to refer to Division 1 Project Requirements (Product Substitutions Procedures) Section.

## 2.02 PRODUCT SUBSTITUTIONS

A. Substitutions: No substitutions permitted.

**Specifier Note:** Specify subordinate or secondary items that aid and assist primary products specified above or are necessary for preparation or installation of those items.

## 2.03 ACCESSORIES

A. Provide accessory items as follows:

1. Surface America PlayGrip Adhesive.
2. Performance UltraTile Play Reducer: 48" x 8" x 2-1/2".
3. Performance UltraTile Play ADA Access Ramp: 24" x 24" x 2-1/2".
4. Performance UltraTile Play L/R Side Reducer for ADA Access: 24" x 8" x 2-1/2".
5. Performance UltraTile Play Outside 45 Corner Reducer: 16" x 8" x 2-1/2".
6. Performance UltraTile Play Inside 45 Corner Reducer: 12" x 8" x 2-1/2".
7. Performance UltraTile Play Outside 90 Corner Reducer: 12" x 8" x 2-1/2".

8. Performance UltraTile Play Quad Blok Connector: 8" x 8" x 17 mm.

## **PART 3 – EXECUTION**

**Specifier Note:** Revise article below to suit project requirements and specifier's practice.

### **3.01 MANUFACTURER'S INSTRUCTIONS**

A. Comply with the instructions and recommendations of the playground surfacing manufacturer.

**Specifier Note:** Specify actions to physically determine that conditions are acceptable to receive primary products of the section.

### **3.02 EXAMINATION**

A. Site Verification of Conditions: Verify that substrate conditions are suitable for installation of the playground surfacing system.

B. Do not proceed with installation until unsuitable conditions are corrected.

C. Proper drainage is critical to the longevity of the Performance UltraTile Play surfacing system. Inadequate drainage will cause premature breakdown of the poured system in affected areas; and void the warranty.

**Specifier Note:** Specify actions required to physically prepare the surface, area or site or to incorporate the primary products of the section.

### **3.03 PREPARATION**

A. Surface Preparation: Ensure that the concrete or asphalt substrate is level or uniformly sloped since surface variations will be telegraphed through to the rubber tile surface.

**Specifier Note:** Coordinate article below with manufacturer's recommended installation requirements.

### **3.04 INSTALLATION**

A. Site Layout

1. Sweep area clear of all dust and loose debris.

2. Determine a starting point for the first course of tile to best suit the site area. For irregular site configurations, the best starting point is often in the center. This will ensure a symmetrical finish for tiles that require trimming along the perimeter. Other installations are best started in the corner or along the edge that represents the length or width dimension of the site.

3. Mark two points on the base surface at an equal distance from the edge of the installation. These points should be located near the opposite ends of the site in the lengthwise direction.

4. Snap a chalk line through the established points. When installing Performance UltraTile Play over geotextile fabric, string lines must be used in place of chalk lines.

5. Measure the length of the site along the chalk line. Mark a point at half the distance of the site.

6. Using the 3-4-5 right triangle method, snap a chalk line to form a 90 degree angle to the previously established lengthwise chalk line. These perpendicular reference lines will serve as a guide for laying the first course of tile.

## B. General Information

Performance UltraTile Play can be installed using a variety of installation methods. The most common and secure method is full adhesion of tiles and accessories side-to-side and directly to the substrates using Surface America PlayGrip, an easy-to-use one-part polyurethane adhesive.

## C. Fully Adhered Installation

1. Follow the site layout instructions to prepare the site area for installation. The tiles, accessories and substrates must be dry before, during and 24 hours after the application of adhesive.

NOTE: Coverage rates for the PlayGrip adhesive are approximately 60 sq/ft on concrete, and 50 sq/ft on asphalt. PlayGrip is available in 2-gallon and 4-gallon pails.

2. Using a 1/8" square-notched trowel, apply the adhesive slightly wider than the tile being placed.

3. Place tile into fresh adhesive bed following pre-established lines. If applicable, place ramps into fresh adhesive in a similar manner.

4. Allow 24 hours for adhesive to cure before opening area for use.

## D. Quad Blok Installation

1. Follow the site layout instructions to prepare the site area for installation.

2. Once chalk lines are established, place the first tile at the intersection of two chalk lines, aligning adjacent edges of the tile with chalk lines.

3. Apply a continuous 3/8" diameter bead of PlayGrip adhesive along the center axes of all Quad Blok connectors. Working adhesive time is dependent upon environmental conditions.

4. Fit the first tile with four prepared Quad Blok connectors by lifting each tile corner slightly, sliding the connectors under each corner and engaging the four corner legs of each tile with the respective apertures in the Quad Blok. Continue to sequentially lay the tile and to set the Quad Blok connectors along one chalk line until the first course of tile is complete.

NOTE: In the field, cut the Quad Blok connectors in half to properly secure tile around the perimeter edge of surface area.

5. Complete the other three quadrants of the site area in a similar fashion.

6. Depending on manpower availability, one or more quadrants can be worked on simultaneously using the above method.

7. Allow 24 hours for adhesive to cure before opening area for use.

## E. Cutting Tiles & Accessories

1. Avoid leaving a cut edge of a tile exposed to eyesight. To ensure a finished appearance, any tile that has its factory molded edge removed or cut for any reason should be positioned against a transition

ramp, masonry or timber edging unless the edge is to be placed against a wall or other vertical member. Use either a silicone sealant or a permanently elastic urethane sealant/adhesive for filling gaps, if any, between cut edges and walls.

2. The most accurate cuts are made using a heavy-duty utility knife and a straight edge. A saber saw utilizing a 7-10 TPI wood cutting blade also does an acceptable job, especially for free-form cuts. A saw with a 3-3.5 amp rated motor having a 1" stroke with variable orbital setting will produce the best result.

3. When working beneath the play structure, it will be necessary to occasionally notch out portions of tiles so that the tiles will properly fit around the posts supporting the play equipment.

4. Cut tile so that the cutout is approximately 1/4" larger in all dimensions than the support it will surround. The extra distance is to prevent binding of the tile around the support. Voids between the equipment supports and tile cuts should be filled in with silicone sealant or a permanently elastic urethane sealant/adhesive.

5. Tile cuts are normally laid out by referencing dimensions from the edges of tiles already in position. These dimensions are then transferred to and laid out on the tile to be cut.

6. A lead-in cutting line is extended from the tile edge to the portion to be cut. The lead-in cutting line chosen usually represents the shortest distance from the cutout area to an edge of the tile or the one that is least noticeable.

7. Reducers installed at the corners should be miter cut to allow reducers to fit together correctly, or use factory molded corner pieces.

#### F. When Ecore Polyfoam Pad is Installed Under Tiles and Quad Block

1. Sweep area clear of all dust and loose debris.

2. Determine a starting point for the first course of Polyfoam Pad, a 4' x 6' x 2-1/8" thick sheet, to best suit the site area.

a. For irregular site configurations, the best starting point is often in the center. This will ensure a symmetrical finish for tiles that require trimming along the perimeter.

b. Some installations are best started in the corner or along the edge that represents the length or width dimension of the site.

3. Once the layout is determined, use a minimum 1/8" square notched trowel to apply E-Grip III adhesive to a 6" x 6" area at each bottom corner of the Polyfoam Pad. Extra adhesive may be necessary over extremely rough surfaces. Insure that there are no gaps between the Polyfoam pads sheets. Under windy conditions, it may be necessary to weight down the foam until the adhesive develops a firm set.

**NOTE:** The top of the Polyfoam Pad is covered with fabric.

4. The most accurate cuts are made using a heavy-duty high carbon steel linoleum knife and a straight edge. A saber saw utilizing a 7-10 TPI wood cutting blade also does an acceptable job, especially for free-form cuts. Blade must be long enough to penetrate the 2-1/8" pad. A saw with a 3-3.5 amp rated motor having a 1" stroke with variable orbital setting will produce the best results.

5. When installing pad around equipment posts, a minimum 6" perimeter area of adhesive should be utilized. Standard hole saws work well for making cutouts, but a lead in cut is required to place the pad in place around the posts.



6. To install tile and Quad Blok over the Polyfoam Pad, begin by following the Site Layout Installation Instructions to prepare the site for the installation of tile.

7. Follow the Quad Blok Installation Instructions to prepare the site to install tile and Quad Blok connectors.

**Specifier Note:** Specify provisions for protecting work after installation but prior to acceptance by the owner. Coordinate article below with Division 1 Execution Requirements Section.

### **3.05 PROTECTION**

A. Protect the installed playground surface from damage resulting from subsequent construction activity on the site.