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## **PART 1 - GENERAL**

### **1.1 SECTION INCLUDES**

- A. Artificial Turf Tile.
- B. Tile support system.
- C. Supplementary support system components and accessories necessary for installation.
- D. Other system components, provided by Installer.

### **1.2 RELATED REQUIREMENTS**

- A. Section 321400 "Unit Paving" for brick, asphalt, concrete, and stone pavers on aggregate, mortar, and bituminous setting beds.

### **1.3 ACTION SUBMITTALS**

**Product Data:** For each type of product and system indicated.

1. Include manufacturer's specifications for materials, finishes, construction details, installation instructions, and recommendations for maintenance.

**Shop Drawings:** For tile and tile support system layout; indicate adjacent construction, perimeter containment components, penetrations, attachment details, and other conditions.

1. Include data indicating compliance with performance requirements.

**Samples for Initial Selection:** For each type of Artificial Turf Tile for Pedestals, provide representative charts of manufacturer's full range of patterns and colors.

**Samples for Verification:** For each type of exposed finish for each Artificial Turf Tile for Pedestals selected.

1. Tile Size: Manufacturers' standard size, [23.6 by 23.6 inches] [23.6 by 47.2 inches] [12.75 by 23.6 inches][other].
2. Accessories: [Adjustable pedestal support] [base pad] [and] [shims].

**Delegated Design Submittal:** For tile support system installation, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

### **INFORMATIONAL SUBMITTALS**

**Qualification Statements:** For delegated design engineer.

**Sample Warranty:** For warranty.

## **1.4 CLOSEOUT SUBMITTALS**

**Operation and Maintenance Data:** For Artificial Turf Tile and tile support system to include in operation and maintenance manuals.

## **1.5 MAINTENANCE MATERIAL SUBMITTALS**

**Extra Stock Material:** Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents. Include inventory list of items delivered.

1. Artificial Turf Tile: Full-size units in quantity equal to percent of quantity installed for each type, pattern, color, and size.
2. Tile Supports: Units in quantity equal to percent of quantity installed for each type and size. Include manufacturer-furnished adjustment tool.
3. Deliver materials to location determined by Owner.

## **1.6 QUALITY ASSURANCE**

**Delegated Design Engineer:** A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated.

## **MOCKUPS**

**Mockup:** Build mockups to verify selections made under Sample submittals and to set quality standards for materials and execution.

1. Build mockup in size and location indicated on Drawings, or if not indicated, no fewer than [four] Artificial Turf Tile and [nine] tile supports.
2. Acceptance of mockups does not constitute acceptance of deviations from the Contract Documents contained in mockups unless Architect specifically accepts such deviations in writing.
3. Subject to compliance with requirements, accepted mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

## **1.7 DELIVERY, STORAGE, AND HANDLING**

**Protect products during shipping, handling, and storage to prevent staining, chipping, deterioration of components, or other damage. Store unused materials in original packaging.**

## 1.8 WARRANTY

**Manufacturer's Warranty:** Manufacturer and Installer agree to repair or replace the following:

1. Damaged Artificial Turf Tile that are delivered to Project site chipped, cracked, or broken prior to being unpackaged.
  2. Artificial Turf Tile and tile supports that fail in materials or workmanship within specified warranty period when installed and used in accordance with manufacturer's written instructions.
  3. Manufacturer's Warranty Period: Ten years from date of Substantial Completion.
  4. Installer's Warranty Period: [Three] years from date of Substantial Completion.
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## PART 2 - PRODUCTS

### 2.1 SOURCE LIMITATIONS

**Obtain Artificial Turf Tile and tile supports from single source or producer.**

### 2.2 ARTIFICIAL TURF TILE

**Structural Artificial Turf Tile:** An eco-friendly tile designed for exterior use with a tile support system.

1. **Base Structure Material:** Recycled polycarbonate (PC).
2. **Foam Layer Material:** Cross-linked polyethylene foam (XPE), thickness 20 mm ( $\pm$  10%).
3. **Surface Layer:** Synthetic turf.
4. **Module Dimensions:** Length/Width: 530 x 530 mm ( $\pm$  1%), Height: 50 mm ( $\pm$  5%), Weight: 2.5 kg ( $\pm$  10%).
5. **Drainage Holes:** 12 per tile with 6 mm diameter.
6. **Tile Size:** [23.6 by 23.6 inches] [23.6 by 47.2 inches] [12.75 by 23.6 inches][other].
7. **Thickness:** 3/4 inch (20 mm).
8. **Weight:** 9 lb/sq. ft. (44 kg/sq. m).
9. **Breaking Strength:** 2200 lbf/sq. ft. (1.053 MPa), minimum.

**10. Bending Strength:** Class 14.

**11. Static Load Capacity:** 1700 lbf/sq. ft. (0.814 MPa), minimum.

**12. Modulus of Rupture:** 7000 lbf/sq. in. (0.335 MPa), minimum.

**13. Colors and Textures:** [As indicated by manufacturer's designations] [Match Architect's samples] [As selected by Architect from manufacturer's standard range] [As selected by Architect from manufacturer's custom range] [As selected by Architect from manufacturer's full standard and custom range].

## **2.3 TILE SUPPORT SYSTEM**

**Adjustable-Height-Pedestal Tile Supports:** Continuously variable, adjustable-height, high-impact and flame-resistant ABS plastic system components. Accommodate height adjustments from 1/2 to 39 inches to provide level tile installation. System shall maintain 1/8- to 1/4-inch tile joint width and alignment of tiles while allowing for drainage, air circulation, and preventing water accumulation.

1. Basis-of-Design Product: Subject to compliance with requirements, provide MRP Adjustable Pedestals or comparable product by one of the following:
  - a. .
2. Load Capacity: Not less than 1500 lbs.

**Tile Support System Components and Accessories:** Provide manufacturer's standard high-impact and flame-resistant ABS plastic spacer tabs, shims, extenders, reducers, lateral bracing support members, and other accessories as necessary for a complete assembly.

## **2.4 OTHER SYSTEM COMPONENTS, PROVIDED BY INSTALLER**

**Protection Course:** As recommended by roofing membrane manufacturer to prevent damage to roofing while allowing adequate flow to drainage system.

**Perimeter Containment Components:** System as provided by Installer to restrain tile support system.

## **2.5 PERFORMANCE REQUIREMENTS**

**Delegated Design:** Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design tile support and perimeter containment systems.

**Tile Support System:** Capable of withstanding effects of gravity loads and the following loads and stresses, within limits and under conditions indicated:

1. Floors: Uniform load of 125 lbf/sq. ft. (610 kg/sq. m) or a concentrated load of 2000 lbf (8.9 kN), whichever produces greater stress.
2. Walkways and Elevated Platforms Other Than Exits: Uniform load of 60 lbf/sq. ft. (293 kg/sq. m).
3. Walkways and Elevated Platforms Used as Exits: Uniform load of 100 lbf/sq. ft. (488 kg/sq. m).
4. All Roof Zones (Corner, Perimeter, and Field-of-Roof) Uplift Pressures: As indicated on Drawings.
5. Roof Zone 1 (Field-of-Roof) Uplift Pressure: .
6. Roof Zone 2 (Perimeter) Uplift Pressure: , located within of roof perimeter.
7. Roof Zone 3 (Corners) Uplift Pressure: , located within of roof outside corner.  
**Perimeter Containment System:** Capable of resisting lateral forces in tile support system without displacement exceeding 1/8 inch.

## 2.6 MATERIALS

**ABS Plastic:** Complying with ASTM F2806.

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## PART 3 - EXECUTION

### 3.1 EXAMINATION

**Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.**

1. Verify suitability of perimeter containment components.  
**Examine roofing installation, with roofing Installer present, for protection from tile support system installation.**  
**Examine areas where roofing system is turned up or flashed against vertical surfaces and horizontal roofing.**  
**Proceed with installation only after unsatisfactory conditions have been corrected.**

### 3.2 PREPARATION

**Coordinate placement of tile support system with roofing membrane Work.**  
**Lay out Artificial Turf Tile for Pedestals and tile support locations, and mark for installation.**

### **3.3 INSTALLATION OF TILE SUPPORT SYSTEM**

**Install protection course and bearing pads below pedestals in accordance with manufacturer's written instructions to protect roofing substrate surface.**  
**Accurately set tile supports in locations coordinated with approved Artificial Turf Tile for Pedestals layout. Install in accordance with manufacturer's written instructions and accepted Shop Drawings.**  
**Adjust tile support heights prior to, and following, installation of Artificial Turf Tile.**  
**Shim where fine adjustment is necessary using manufacturer-provided shims.**  
**Install [wind uplift and safety system components] [and] [lateral bracing support system components] in accordance with manufacturer's written instructions and accepted Shop Drawings.**

### **3.4 INSTALLATION OF ROOF TILES**

**Install Artificial Turf Tile over support system in accordance with manufacturer's written instructions and accepted Shop Drawings. Align joint patterns parallel in each direction. Lay out tile units to avoid less than half-width units at perimeter or other terminations.**  
**Set Artificial Turf Tile in place using placement methods that result in stable installation free from rocking, using sound tiles with no edge or surface damage.**  
**Make final in-place level adjustments using manufacturer's furnished tool to adjust tile support heights. Do not use tile units with chips, cracks, voids, discolorations, and other defects that might be visible or cause staining in finished work.**

### **3.5 CONSTRUCTION TOLERANCES**

**Variation of Level Across Width of Each Artificial Turf Tile for Pedestals:** 1/16 inch, maximum.

**Variation from Level for Paved Areas:** Do not exceed 1/4 inch in 10 ft., when measured at any location and in any direction.

**Variation in Joint Width:** Do not vary joint thickness more than one-fourth of nominal joint width.

**Variation in Plane at Joints (Lipping):** Do not exceed 1/16-inch difference between planes of adjacent units.

**Variation in Line of Edge at Joints (Lipping):** Do not exceed 1/16-inch difference between edges of adjacent units, where edge line continues across joint.

### **3.6 CLEANING AND PROTECTION**

**Remove and replace loose, chipped, broken, stained, or otherwise damaged Artificial Turf Tile or tiles that do not match adjoining units or pattern indicated on Drawings.**

**Cleaning:** Remove soiling from exposed Artificial Turf Tile for Pedestals surfaces; wash and scrub clean. Leave joints between tiles open and clean of debris to allow for proper drainage and airflow.

**Provide final protection and maintain Artificial Turf Tile without damage or deterioration at time of Substantial Completion.**

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**END OF SECTION**