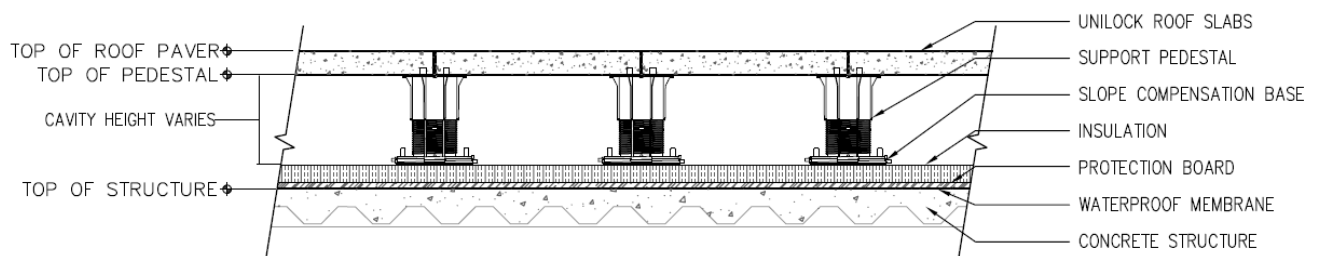


07-76-00

# Roof Slabs 2024

For any additional information or assistance with this spec please contact your Unilock Representative.



**\*\*\* Delete all text in RED after modifying the text in BLUE. All BLUE text requires modification. \*\*\***

## FOREWORD

*These specifications have been prepared for the general guidance of architects, landscape architects, engineers, contractor and superintendents associated with the construction of an elevated roof slab and pedestal system. Consult with a licensed architect, landscape architect or engineer to determine the suitability of the design, confirm site conditions and monitor the installation in critical applications. Unilock is not responsible for the information in this specification meeting local or national building codes. The Architect, Landscape Architect or Engineer of Record is responsible selecting products that meet any and all building code requirements to gain occupancy permit and updating this specification as necessary.*

## INTRODUCTION

*Unilock® roof concrete slabs are manufactured in a variety of shapes and colors. They offer design professionals several options that are efficient, durable, economical and aesthetically attractive. Unilock® roof concrete slabs are manufactured to tight dimensional tolerances meet flexural requirements.*

## SECTION 07 76 00

### ROOF CONCRETE SLAB PEDESTAL SYSTEM

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Section includes the following:
  - 1. Concrete Roof Slabs
  - 2. Support Pedestal System

##### 1.02 REFERENCES

- A. ASTM International, latest edition:
  - 1. C 33, Standard Specification for Concrete Aggregates.
  - 2. C 936, Standard Specification for Solid Concrete Interlocking Paving Units.
  - 3. C 979, Standard Specification for Pigments for Integrally Colored Concrete.
  - 4. C 1645, Standard Test Method for Freeze-thaw and De-icing Salt Durability of Solid Concrete Interlocking Paving Units.
  - 5. C 1782, Standard Specification for Utility Segmental Concrete Paving SlabsNote: In order to determine the latest version of the listed specifications and standards, please consult the ASTM web page ([www.astm.com](http://www.astm.com))
- B. Canadian Standards Association
  - 1. A231.1-06 Precast Concrete Paving Slabs
- C. U.S. Green Building Council Leadership in Energy and Environmental Design (LEED)
  - 1. Building Design + Construction, latest edition

##### 1.03 SUBMITTALS

- A. Roof Concrete Slabs:
  - 1. Samples for verification: Three representative full-size samples of each slab type, thickness, color and finish that indicate the range of color variation and texture expected upon project completion.
  - 2. Accepted samples become the standard of acceptance for the product produced.
  - 3. Test results from an independent testing laboratory for compliance of concrete slabs with ASTM C 1782, ASTM C 293 and/or CSA A231.1.
  - 4. Manufacturer's catalog product data, installation instructions, and material safety data sheets for the safe handling of the specified materials and products.

- B. Pedestal System:
  - 1. Submit manufacturer's data sheets on each product to be used, including:
    - a. Preparation instructions and recommendations.
    - b. Storage and handling requirements and recommendations.
    - c. Installation methods.
  - 2. Submit shop drawings detailing the installation methods. Coordinate placement with locations noted on the Contract Drawings.
  - 3. Provide the Support Pedestal System manufacturer an executed copy of the manufacturer's standard document outlining the terms, conditions, and limitations of their limited warranty against manufacturing defect for a period of X (X) years (insert the duration).
- C. Roof Concrete Slab and Support Pedestal Installation Contractor:
  - 1. Provide job references from a minimum of three projects similar in size and complexity. Provide Owner/Client/General Contractor names, postal address, phone, fax, and email address.
- D. LEED: (required only for LEED projects, delete otherwise)
  - 1. Submit manufacturer data or certification letter for Concrete Slabs materials meeting LEED (latest edition) criteria for:
    - a. Heat Island Reduction – Non-Roof: Solar Reflectance: initial solar reflectance of 0.33 or greater for on-grade applications.
    - b. Environmental Product Declarations: Option 1. Environmental Product Declarations (EPD).
    - c. Sourcing of Raw Materials: Responsible Sourcing of Raw Materials – Recycled Content: product recycled content percentage by weight of post-consumer and pre-consumer recycled content.
    - d. Material Ingredients: Option 1. Material Ingredient Reporting – Health Product Declaration (HPD): HPD 2.2 or latest transparency data sheet.

#### 1.04 QUALITY ASSURANCE

- A. Utilize a manufacturer having at least ten years of experience manufacturing concrete slabs on projects of similar nature or project size.
- B. Source Limitations:
  - 1. Obtain Roof Concrete Slabs from one source location with the resources to provide products of consistent quality in appearance and physical properties.
  - 2. Obtain Pedestal System from one manufacturer with complete integrated and adjustable products of consistent quality and function.
- C. Roofing and Paving Contractor Qualifications:
  - 1. Utilize an installer having successfully completed a roof concrete slab and pedestal system installation similar in design, material, and extent indicated on this project.
- D. Mockups:
  - 1. Install a minimum 4 ft x 4 ft slab area.
  - 2. Use this area to determine the joint sizes, lines, laying pattern(s) and levelness. This area will serve as the standard by which the workmanship will be judged.
  - 3. Subject to acceptance by owner, mock-up may be retained as part of finished work.
  - 4. If mock-up is not retained, remove and properly dispose.
- E. Special Considerations:
  - 1. Verify and confirm the structural capability and adequacy of the structure to carry the dead and live load weight(s) involved, and that the density of any insulation is satisfactory to resist crushing and damaging the waterproofing membrane.
  - 2. Immediately report any concerns or discrepancies.

#### 1.05 DELIVERY, STORAGE & HANDLING

- A. In accordance with Conditions of the Contract and Division 1 Product Requirement Section.
- B. Deliver Roof Concrete Slabs in manufacturer's original, unopened and undamaged container packaging with identification labels intact.

1. Coordinate delivery and paving schedule to minimize interference with normal use of streets and sidewalks adjacent to slab installation.
  2. Deliver Roof Concrete Slabs to the site in steel banded, plastic banded, or plastic wrapped packaging capable of transfer by forklift or clamp lift.
  3. Unload slabs at job site in such a manner that no damage occurs to the product or adjacent surfaces.
  4. Evenly disperse bundled material on structural areas to eliminate overloading point load limits.
- C. Deliver and store Support Pedestal System components with labels intact and legible.
1. Inspect all delivered materials to ensure they are undamaged and in good condition.
- D. Store and dispose of solvent-based materials such as construction adhesive, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction
- E. Store and protect materials free from mud, dirt, and other foreign materials.

#### 1.06 PROJECT/SITE CONDITIONS

- A. Environmental Requirements:
1. Install Support Pedestal Systems free of standing water or ice.
  2. Install Support Pedestal Systems free of saturated or frozen granular base materials.
  3. There are no Support Pedestal System installation temperature restriction guidelines other than the practical considerations of working in any unsafe condition or inclement weather.
- B. Do not exceed the structural capacity of the roof.
- C. Roof Concrete Slabs and Support Pedestal System specified are to be used with pedestrian traffic only.
- D. Restrain Roof Concrete Slabs by perimeter blocking or walls on all sides. Lateral movement greater than one tab width is unacceptable and will be rejected.
- E. Provide positive drainage to the substrate immediately below the Support Pedestal System.
- F. Roof Concrete Slabs and Support Pedestal System over roofing and waterproofing:
1. Install roof systems meeting local building codes and be per the NRCA recommended good construction practices. Use only roofing manufacturer's approved systems.
  2. Install the Support Pedestal System only over substrate surfaces structurally capable of carrying the dead and live loads anticipated.
  3. If integral roof insulation is installed immediately below the membrane, the type and density of the insulation is of utmost importance.
  4. If high density closed cell extruded 60 psi polystyrene insulation is installed on top of the membrane in a protected membrane system, Roof Concrete Slab Support Pedestals Systems may be installed directly on top of this type of insulation.
  5. Do not use Roof Concrete Slab and Supports Pedestal Systems over any insulation less than 20 psi or with low-density polystyrene (bead board) insulation.
- G. Roof Concrete Slabs and Support Pedestal Systems on grade:
1. Install the Support Pedestal System only over well-compacted soils structurally capable of carrying the dead and live loads anticipated.
  2. Adequately compact and slope to drain any substrate soil that is to receive Support Pedestals Systems. Install and compact granular base (at 1/4 inch minus) at each Support Pedestals location.
  3. A wall or perimeter containment on all open sides is required. Install structural perimeter containment that restrains the entire Roof Concrete Slabs.

#### 1.07 WARRANTY

- A. Warrant all work will remaining free from installation and manufacturer defects used for a minimum of one (1) year.
  - B. Coordinate warranty requirements with any related sections or adjacent work. Notify the Architect immediately of any potential lapses or limitations in warranty coverage.
- Note: For use with pedestrian traffic only – Never use Support Pedestal Systems to support Roof Concrete Slabs that have wheeled, motorized or equipment traffic.

#### 1.08 ROOF CONCRETE SLAB OVERAGE AND ATTIC STOCK

- A. Provide a minimum of 5% additional material for overage to be used during construction for any slab units with undesirable surface imperfections, chips, cracks, or breakage.
- B. Furnish 10 square feet of each product and size used to the owner for maintenance and repair. Furnish Roof Concrete Slabs from the same production run as installed materials.
- C. Manufacturer to supply maintenance manuals for Roof Concrete Slab units.

### PART 2 PRODUCTS

#### 2.01 ROOF CONCRETE SLABS

- A. Basis-of-Design Product: The Roof Concrete Slabs products are based on:
    - 1. Unilock: (Select product or products being used)
      - a. Umbriano and Umbriano XL
      - b. Arcana
      - c. Soreno
      - d. Skyline Premier
      - e. Beacon Hill XL
      - f. Other Unilock Product
    - 2. As manufactured by:
      - Unilock Midwest
      - 301 E. Sullivan Road
      - Aurora, IL 60505
      - Contact: Brad Swanson, [brad.swanson@unilock.com](mailto:brad.swanson@unilock.com) (630) 742-4168 or your local Territory Manager
    - 3. The specified products establish minimum requirements that substitutions must meet to be considered acceptable.
      - a. To obtain acceptance of unspecified products, submit written requests at least 7 days before the Bid Date.
- Note: Unless required by the owner, an "or equal" line is not necessary when using a basis-of-design specification with the above information is listed and outline in Division 1, Product Substitution Procedures.
- Or choose number 3 below and delete above number 3.
- 3. Substitutions: No substitutions permitted.

- B. Product requirements:
  - 1. Roof Concrete Slab Type 1: Unilock Umbriano/Umbriano XL
    - a. Finish: Umbriano – granite face mix, mottled appearance with integral factory-applied coating
    - b. Color: Insert product color
    - c. Edge: Chamfer - 3 mm rolled
    - d. Size: Manufacture the sizes indicated with a maximum tolerance of plus or minus 1/16 inch for length and width. Maximum height tolerance of plus or minus 1/8 inch.
      - 1. 600 mm (24 in) x 600 mm (24 in) x 70 mm (2-3/4 in) thick (32 lbs./SF)
      - 2. 606 mm (24 in) x 606 mm (24 in) x 50 mm (2 in) thick (24 lbs./SF)
      - 3. 570 mm (22-1/2 in) x 950 mm (37-1/2 in) x 60 mm (2-3/4 in) thick (28 lbs./SF)
    - Note: Imperial dimensions are nominal equivalents to the metric dimensions.
    - e. LEED: HPD 2.2 or latest transparency data

2. **Roof Concrete Slab Type 2: Unilock Arcana**
  - a. Finish: Arcana – face mix, shot-blasted with EasyClean factory-applied coating
  - b. Color: [Insert product color](#)
    1. Avorio
    2. Modena
    3. Corvara
    4. Vivanto
  - c. Edge: Chamfer
  - d. Size: Manufacture the sizes indicated with a maximum tolerance of plus or minus 1/16 inch for length and width. Maximum height tolerance of plus or minus 1/8 inch.
    1. 606 mm (24 in) x 606 mm (24 in) x 50 mm (2 in) thick (24 lbs./SF)
    2. 453 mm (18 in) x 606 mm (24 in) x 50 mm (2 in) thick (24 lbs./SF)
    3. 301 mm (12 in) x 606 mm (24 in) x 50 mm (2 in) thick (24 lbs./SF)Note: Imperial dimensions are nominal equivalents to the metric dimensions.
  - e. LEED: Provide slabs with documentation for:
    1. EPD's – third-party verified
    2. HPD's, 2.2 or latest transparency data
3. **Roof Concrete Slab Type 3: Unilock Soreno**
  - a. Finish: Soreno – face mix, shot-blasted, flamed-like texture and with EasyClean factory-applied coating
  - b. Color: [Insert product color](#)
    1. Light Granite
    2. Toscana Beige
    3. Dark Charcoal
  - c. Edge: Chamfer
  - d. Size: Manufacture the sizes indicated with a maximum tolerance of plus or minus 1/16 inch for length and width. Maximum height tolerance of plus or minus 1/8 inch.
    1. 400 mm (16 in) x 800 mm (32 in) x 50 mm (2 in) thick (22 lbs./SF)Note: Sizes are imperial sizes.
  - e. LEED: Provide slabs with documentation for:
    1. EPD's – third-party verified
    2. HPD's, 2.2 or latest transparency data
4. **Roof Concrete Slab Type 4: Unilock Skyline Premier**
  - a. Finish: Premier – smooth, face mix
    1. standard without EasyClean factory-applied coating (as provided with stock colors)
    2. with EasyClean factory-applied coating (additional cost)
  - b. Color: [Insert product color](#)
    1. Chamois
    2. Silver Grey
    3. other (special order)
  - c. Edge: Rounded
  - d. Size: Manufacture the sizes indicated with a maximum tolerance of plus or minus 1/16 inch for length and width. Maximum height tolerance of plus or minus 1/8 inch.
    1. 606 mm (24 in) x 606 mm (24 in) x 50 mm (2 in) thick (22 lbs./SF)Note: Sizes are imperial sizes.
  - e. LEED: Provide slabs with documentation for:
    1. EPD's – third-party verified
    2. HPD's, 2.2 or latest transparency data
5. **Roof Concrete Slab Type 5: Beacon Hill XL**
  - a. Finish: Premier – smooth face mix
  - b. Color: [Insert product color from regional options](#)
  - c. Edge: N/A

- d. Size: Manufacture the sizes indicated with a maximum tolerance of plus or minus 1/16 inch for length and width. Maximum height tolerance of plus or minus 1/8 inch.
  - 1. 570 mm (22-1/2 in) x 950 mm (37-1/2 in) x 60 mm (2-3/4 in) thick (28 lbs./SF)

Note: Sizes are imperial sizes. Beacon Hill XL includes attached, concrete spacers with a 3/16 inch joint which may eliminate the need to Support Pedestal Spacer Tabs. Verify acceptability for approving.
- e. LEED: Provide slabs with documentation for:
  - 1. EPD's – third-party verified
  - 2. HPD's, 2.2 or latest transparency data

- C. Provide slabs meeting the minimum material and physical properties set forth in ASTM C 1782, Standard Specification for Utility Segmental Concrete Paving Slabs. Efflorescence is not a cause for rejection.
  - 1. Average Modulus of Rupture 725 psi (5 MPa) with no individual unit under 650 psi (4.5 MPa).

Note: Breakage of one or more units during installation is not grounds for rejecting all unbroken slab units. Notify the manufacturer immediately if breakage does occur.

- 2. Conforming to ASTM C 1645 when tested for freeze-thaw requirements.

Note: Efflorescence is a whitish powder-like deposit that sometimes appears on concrete products. Calcium hydroxide and other water-soluble materials form or are present during the hydration of Portland cement. Pore water becomes saturated with these materials, and diffuses to the surface of the concrete. When this water evaporates, the soluble materials remain as a whitish deposit on the concrete surface. The calcium hydroxide is converted to calcium carbonate during a reaction with carbon dioxide from the atmosphere. The calcium carbonate is difficult to remove with water. However, the efflorescence will wear off with time, and it is advisable to wait a few months before attempting to remove any efflorescence. Commercially available cleaners can be used, provided directions are carefully followed. Some cleaners contain acids that may alter the color of the slabs.

#### OR FOR CANADIAN SPECIFICATIONS

- C. Provide slabs meeting the minimum material and physical properties set forth in CSA A231.1-06, Precast Concrete Paving Slabs. (For all Roof Slab types)
  - 1. Minimum compressive strength 5,000 psi (55MPa).
- D. Accept only pigments in concrete slabs conforming to ASTM C 979.
 

Note: ACI Report No. 212.3R provides guidance on the use of pigments.

## 2.02 SUPPORT PEDESTAL SYSTEM

- A. Basis-of-Design Product: The Support Pedestal System is based on:
  - 1. Unilock Pedestals: (Select product or products being used)
    - a. Height range from 3/8 inch to 37-3/8 inches with minimum FS:2 (Factor of Safety of 2) weight bearing capacity of 1,250 lbs/pedestal. Spacer Tabs: Specify 1/8 inch
  - 2. As supplied by:
    - Unilock Midwest
    - 301 E. Sullivan Rd.
    - Aurora, IL 60505
    - Contact: Brad Swanson (630) 742-4168, Brad.Swanson@Unilock.com
  - 3. The specified products establish minimum requirements that substitutions must meet to be considered acceptable.
    - a. To obtain acceptance of unspecified products, submit written requests at least 7 days before the Bid Date.

Note: Unless required by the owner, an “or equal” line is not necessary when using a basis-of-design specification with the above information is listed and outline in Division 1, Product Substitution Procedures.

Or choose number 3 below and delete above number 3.

3. Substitutions: No substitutions permitted.

B. Product requirements:

1. Unilock:

a. M Series Adjustable Pedestals:

1. M1: 1-3/4in to 2-7/8in (45mm – 75mm)
2. M2: 2-7/8in to 5-7/8in (75mm – 150mm)
3. M3: 5-7/8in to 13-3/4in (150mm – 350mm)
4. M4: 13-3/4in to 21-5/8in (350mm – 550mm)
5. M5: 21-5/8in to 29-1/2in (550mm – 750mm)
6. M6: 29-1/2in to 37-3/8in (750mm – 950mm)

b. P Series Adjustable Pedestals:

1. P1: 3/8in to 3/4in (10mm – 17mm)
2. P2: 3/4in to 1-1/4in (17mm – 30mm)
3. P3: 1-1/4 in to 1-7/8” (30mm – 50mm)

c. Spacer Tabs for uniform spacing between slabs:

1. Width: 1/8in (3mm) included
2. Height: 7/16 inch (11mm)

2. Pedestal System Accessories:

a. Shims:

1. M and P Series Rubber Shims: 1.5mm

b. Self-Leveling Head

c. Base Slope Corrector

d. M Series Height Coupler: DS200

C. Consult the Manufacturer regarding the following:

1. When spacer tab condition or design requires spacing between Roof Concrete Slabs other than the standard spacing required by the manufacturer.
2. When considering use for other than a raised decks (e.g. interior floors, stairs, etc.).
3. When the required pedestal height exceeds the safe limits as determined by the Manufacturer.
4. When pedestal load capacity exceeds the maximum listed.
5. When anticipating installation of any items with excess weight on top of the Roof Concrete Slab surface.
6. When using Support Pedestals System on grade (soil).
7. When greater pedestal load capacity is required.

2.03 SLAB ACCESSORIES (Optional depending on project needs)

A. [Cleaners] [Sealers] [Joint sand stabilizers]

1. Supplier: Unilock (add location, address, City, State and Zip)  
Contact: (Insert Unilock representative name and phone number) or your local Territory Manager
2. Material Type and Description: (Specify material type and description)
3. Material Standard: (Specify material standard)

**PART 3 EXECUTION**

3.01 EXAMINATION

A. Examine areas indicated to receive Support Pedestal System bases for compliance with requirements for installation tolerances and other conditions affecting performance for the following items before placing Roof Concrete Slabs.

1. Verify location, type, and elevations of edge restraints, concrete collars around utility structures, and drainage inlets.



2. Notify Architect of unsatisfactory preparation before proceeding if substrate preparation is the responsibility of another installer.
  3. Verify all elevations, required pedestal heights and deck dimensions before commencing work.
- B. Do not begin installation until substrates have been properly prepared.
1. Proceed with installation only after unsatisfactory conditions have been corrected.
  2. Setting of Support Pedestal units signifies acceptance of building roof membrane and protection board substrates.

### 3.02 PREPARATION

- A. Keep area where Roof Slab Pedestal System is to be constructed free from nails, screws, debris, etc. during entire job. Repair all damage to roof substrate.
- B. Complete construction of all roof drain inlets and other drainage structures before the commencement of Support Pedestal System installation.
- C. Do not damage roof drains, roof substrate, and/or other drainage appurtenances during installation. Report all damage immediately.
- D. Protect HVAC, ventilation pipes and other structures during Roof Concrete Slab and Support Pedestal System installation.
- E. Clean and free projections and debris impairing the performance of the pedestals or the total system from the substrate.
- F. Establish accurate lines, levels and pattern.
- G. Installation requirements vary for each individual project site. Provide Roof Concrete Slabs materials used, pattern, grid layout, starting point, and finished elevation on plan view shop drawings which have been prepared and approved.
- H. Establish a starting point and the finished elevation of the Roof Concrete Slab surface. Mark the Support Pedestal System elevation (finished elevation minus slab material thickness) around the perimeter using a transit "torpedo" water level or laser leveling device.
- I. Define the slab surface area by accurately taking precise measurements. Mark off and square all outside edges with control lines (chalk lines or spray paint). Install two (2) lines that are perpendicular to each other across the slab surface area. Continue to mark a grid of lines in both directions marking the location of each pedestal. Implement control lines as references to periodically check the layout during installation to assure a square layout.

### 3.03 INSTALLATION

- A. PEDESTAL SYSTEM
1. Install in accordance with manufacturer's instructions.
  2. If required, place a neoprene pad under the Support Pedestal.
  3. Place a Support Pedestal where each measured grid line meets the perimeter.
    - a. Remove two (2) spacer tabs in line with one another on top of each pedestal placed around the perimeter.
    - b. Remove all four (4) spacer tabs at corners.
  4. Adjust each Support Pedestal to a "top of pedestal" elevation marked around the perimeter. (Normally the deck support is positioned as close to the perimeter as possible, with the two remaining spacer tabs aligned with the grid line.) Stretch a string line along (or utilize a laser leveling device) and slightly ahead of the second row of Support Pedestals.
  5. Pre-sort and pre-set the Support Pedestals to the proper elevation and place in position prior to the installation of the Roof Concrete Slabs.
  6. Plumb Support Pedestals for units taller than 14 inches with the Bottom Slope Corrector.
  7. Rotate the Bottom Slope Corrector tabs to vertically adjust the Support Pedestal elevation while being loaded with slabs.

8. Support Pedestal Systems have built in safety thread engagement 'bumps'. When pedestal is fully extended, thread engagement "bumps" will be felt and heard, indicating the maximum height of the pedestal.
  - a. Do not extend pedestal beyond the thread engagement "bumps".
  - b. Do not exceed maximum height listed on pedestal, use the next size pedestal.
  - c. Always maintain adequate thread engagement. Never over extend any pedestal.
9. Slight irregularities in Roof Concrete Slab thickness can be compensated for by using one to two shim segments. Place shims on top of the pedestal, under the corner(s) of the decking tile or slab. Never use more than two (2) shims on top of the pedestal and always adhere 1/4 wedges with construction adhesive.
10. Slope Adjustment:
  - a. Self-Leveling heads will adjust up to 5% for roof pitch.
11. Support items (such as planters, concrete benches, sculptures, hot tubs, grills, or industrial equipment) directly with additional pedestals directly and independently of the main Roof Concrete Slabs and Support Pedestal System.

#### B. ROOF CONCRETE SLABS

1. Do not use slabs with chips, cracks, voids, discolorations, and other defects that might be visible in finished work.
2. Mix slabs from a minimum of three (3) bundles simultaneously as they are placed, to produce uniform blend of colors and textures.

NOTE: Color variations occur with all concrete products. This phenomenon is influenced by a variety of factors, e.g. moisture content, curing conditions, different aggregates and, most commonly, from different production runs. By installing from a minimum of three (3) bundles simultaneously, variation in color is dispersed and blended throughout the project.
3. Exercise care in handling slabs to prevent surfaces from contacting backs or edges of other units.
4. Install Roof Concrete Slabs using pattern as indicated.
5. Place the corner of the Roof Concrete Slab directly over the center of the Support Pedestal where more than one unit meets.
6. Place units hand tight against spacer bars or pedestal spacer tabs. Adjust the horizontal placement of laid slabs to align straight.
7. Provide space between slabs units of 1/8 in. (3 mm) wide to achieve straight bond lines.
8. Set surface elevation of Roof Concrete Slabs 1/16 in. (1.5 mm) above adjacent drainage inlets, concrete collars or channels.
9. Do not exceed joint (bond) lines more than  $\pm 1/2$  in. ( $\pm 15$  mm) over 50 ft. (15 m) from string lines.
10. Cut unit slabs with motor-driven masonry saw equipment to provide clean, sharp, unchipped edges. Cut units to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting where possible. Hammer cutting is not acceptable.
11. Remove any cracked or structurally damaged slabs and replace with new units.
12. Tolerances: Do not exceed 1/32-inch (0.8-mm) unit-to-unit offset from flush (lippage). Do not exceed 1/8 inch in 10 feet (3 mm in 3 m) from level, or indicated slope, for finished surface of paving.

#### 3.04 SUPPORT PEDESTAL SYSTEM PLACEMENT AND FINAL ADJUSTMENT

- A. Place Support Pedestal System and the Roof Concrete Slabs per the manufacturer written instructions. Utilizing labor saving devices, such as slab lifters or vacuum devices where applicable, especially on large jobs.
- B. Support Pedestals are designed to be rotated for final slight adjustment when system is fully loaded. Level Support Pedestals in each succeeding row as the installation proceeds.

Adjust final height or maintenance adjustments by rotating the base in a clockwise or counter-clockwise direction to raise or lower the surface material.

- C. Provide additional sections of shims for regular maintenance. Install Shims in multiples, whole or segmented, and placed under the base or on top the pedestal to level the Roof Concrete Slabs.
- D. On top of pedestal: Provide construction adhesive to adhere sections of shims. Construction adhesive is not required when using whole shims on top of a pedestal.
- E. Beneath a pedestal: Provide a small amount of construction adhesive to adhere sections of shims and/or whole shims to each other or to the pedestal. Unless specified to do so, DO NOT adhere pedestal or shims to insulation, roofing or waterproofing membrane.

### 3.05 PERIMETER CONTAINMENT

- A. Contain and 'box-in' any area of a Roof Concrete Slabs that are not restrained by a parapet or foundation wall. The Roof Concrete Slab panels will move if all sides are not adequately restrained. Restrain Roof Concrete Slabs on all sides and do not allow lateral movement in excess of one tab width.

### 3.06 FIELD QUALITY CONTROL

- A. Verify final elevations for conformance to the drawings after sweeping the surface clean.
  - 1. Prevent final surface finish grade elevations from deviating more than  $\pm 1/4$  in. ( $\pm 5$  mm) under a 10 ft (3 m) straightedge or indicated slope, for finished surface of Roof Concrete Slabs.
- B. Lippage: No greater than  $1/32$  in. (1 mm) difference in height between Roof Concrete Slabs or adjacent surfaces such as walkways and door thresholds.
- C. Inspect often during installation to assure that grid spacer lines are being maintained in a straight and consistent pattern and that Roof Concrete Slabs are level and not rocking.
- D. Confirm that Support Pedestals height does not exceed the specified height for the V Series:
  - 1. 24 inches (610mm) maximum pedestal height unless using the Support Pedestal Brace System.
- E. Unless otherwise specified in writing to allow for expansion, inspect to assure that all slab spacing between units and at perimeter containment does not exceed a tab width. Pay particular attention to assure that all pedestrian entry or access points to the Roof Concrete Slabs are level and that the surfaces are not randomly raised or uneven creating a tripping or safety hazard.

### 3.07 IMMEDIATELY FOLLOWING INSTALLATION

- A. Carefully inspect the Roof Concrete Slab and Support Pedestal System to ensure that:
  - 1. The new Roof Concrete Slab system is adequately blocked on all sides to contain the material and related components.
  - 2. There is no more than tab width spacing between any deck panels and at all sides of the deck perimeter.
  - 3. There is no ballasting rock used to fill in any perimeter voids.
  - 4. There is no 'rocking' of Roof Concrete Slabs as foot traffic is applied to the surface.
  - 5. All required spacer tabs are in place and visible.

### 3.08 REPAIRING, CLEANING AND SEALING

- A. Remove and replace Roof Concrete Slabs that are chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Provide new units to match adjoining units and install in same manner as original units, with same joint treatment and with no evidence of replacement.
- B. Cleaning: Remove excess dirt, debris, stains, grit, etc. from exposed Roof Concrete Slab surfaces; wash and scrub clean.
  - 1. Clean Roof Concrete Slabs in accordance with the manufacturer's written recommendations.

- C. Seal as indicated. (If not indicated elsewhere in the contract documents, sealing is not required and remove this section 3.05, C.)
  - 1. Apply Sealer for Permeable Concrete Slabs in accordance with the sealer and slab manufacturer's written recommendations.

### 3.09 PROTECTION

- A. Protect completed work from damage due to subsequent construction activity on the site.

### 3.10 LIFE CYCLE ACTIVITIES

- A. Cleaning:
  - 1. Clean Roof Concrete Slabs as needed to remove staining, dirt, debris, etc.
  - 2. Clean per manufacturers recommendations.
- B. Maintenance:
  - 1. Provide information about performing routine maintenance of the Concrete Roof Slab and Support Pedestal System as part of the close out documents.
  - 2. Check for rocking slabs and adjust or shim immediately. Substrates can settle and pedestals may have to be readjusted. Failure to do so can cause a tripping hazard.
  - 3. Periodically check spacer tabs and immediately replace broken tabs to limit deck movement. Verify the edge restraint stays intact and structurally sound.

END OF SECTION