SECTION 07 76 00

ROOF PAVERS AND PEDESTALS

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\*\* NOTE TO SPECIFIER \*\* Tile Tech Pavers; Architectural Pavers, Porcelain Pavers, IPE Wood Deck tiles, Adjustable Pedestals.  
This section is based on the products of Tile Tech Pavers, which is located at:  
4730 E. 26th St.  
Vernon, CA 90058  
Toll Free Tel: 888-380-5575  
Tel: 213-380-5560   
Fax: 213-380-5561   
Email: [request info (sales@TileTechPavers.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=Tile+Tech+Pavers&coid=44152&rep=&fax=213-380-5561)  
Web: <http://www.tiletechpavers.com>   
 [ [Click Here](https://www.arcat.com/arcatcos/cos44/arc44152.html) ] for additional information.  
Tile Tech is a leading manufacturer of Roof Pavers, Porcelain Pavers, IPE Wood Deck Tiles and Adjustable Pedestal Systems. Our complete product lines transforms any roof deck, pool decks, rooftop terraces, plazas, green roofs, walkways, driveways, courtyards or patios into beautiful usable spaces in both high-traffic commercial and high-end residential applications.  
They can be sand set, mortar set or installed on pedestals over waterproof roofs or decks. Tile Tech Deck Support Pedestals hold and elevate numerous decking surface materials such as IPE wood tiles, concrete pavers, porcelain pavers, stone tiles and decks on joist systems. Our system offers all-in-one flexibility for installation, future maintenance or dismantling.  
Tile Tech products are sustainable, offering LEED credits, recycled content and FSC approval. Matching accessories such as stair treads, pool copings, and risers are also available.

1. GENERAL
   1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Roof pavers and pedestal system including the following:
       1. Architectural concrete pavers.
       2. Porcelain pavers.
       3. IPE wood tiles.
       4. Adjustable pedestal system.
       5. ADA detectable warning pavers.
  1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 32 14 13.16 - Precast Concrete Unit Paving Slabs.
    2. Section 03 30 00 - Cast-in-Place Concrete.
    3. Section 06 10 00 - Rough Carpentry.
    4. Section 07 62 00 - Sheet Metal Flashing and Trim.
    5. Section 07 10 00 - Dampproofing and Waterproofing.
    6. Section 07 50 00 - Membrane Roofing.
  1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. ASTM International (ASTM):

\*\* NOTE TO SPECIFIER \*\* C Series standards for ADA Detectable Warning products only. Delete if not required.

* + - 1. ASTM C150 - Specification for Portland Cement.
      2. ASTM C33 - Specification for Concrete Aggregates.
      3. ASTM C140 - Specification for Concrete.
      4. ASTM C293 - Standard Test Method for Flexural Strength of Concrete (Using Simple Beam With Center-Point Loading).
      5. ASTM C1028 - Standard Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method.
      6. ASTM C501 - Standard Test Method for Relative Resistance to Wear of Unglazed Ceramic Tile by the Taber Abraser.
      7. ASTM C241 - Standard Test Method for Abrasion Resistance of Stone Subjected to Foot Traffic.
      8. ASTM D638 - Tensile Properties of Plastics.
      9. ASTM D790 - Flexural Properties of Unreinforced and Reinforced Plastics Insulating.
      10. ASTM D1525 - Vicat Softening Temperature of Plastics.

\*\* NOTE TO SPECIFIER \*\* ADA Detectable Warning products only. Delete if not required.

* + 1. Tile Council of North America (TCNA):
       1. TCA F102 - Installation Method Cement Mortar Bonded.
       2. TCA F101 - Installation Method Cement Mortar Bonded.

\*\* NOTE TO SPECIFIER \*\* ADA Detectable Warning products only. Delete if not required.

* + 1. American National Standards Institute (ANSI):
       1. ANSI A-118.4 - Latex Portland Cement Mortar.
       2. ANSI A-118.6 - Grout - Latex.
  1. SUBMITTALS
     1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
     2. 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.
     3. Shop Drawings: Showing all components required for the paver and pedestal requirements. Shop drawings shall include plan drawings showing layout of all paver areas and detail drawings showing how the various components of the system fit together. Include manufacturer's literature completely describing all components of the paver pedestal systems and giving detailed installation recommendations and instructions. Also include detailed installation drawings for all porcelain pavers.
     4. Structural Analysis: Provide confirmation of (1) the structural capability and adequacy of the structure to carry the dead and live load weights involved, and (2) that the density of any insulation is satisfactory to resist crushing and damaging the waterproofing membrane.

\*\* NOTE TO SPECIFIER \*\* Delete selection samples if colors have already been selected.

* + 1. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

\*\* NOTE TO SPECIFIER \*\* Delete pavers and tiles not required.

* + - 1. Architectural Concrete Pavers: Submit samples for type, color and texture available.
      2. Porcelain Pavers: Submit samples for type, color and texture available.
      3. IPE Wood Deck Tiles: Submit samples for type, color and texture required.
      4. Adjustable Pedestals: Submit sample of each pedestal component.
      5. PVC Pipe: Submit 6 inches (150 mm) long sample of PVC pipe.
    1. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square representing actual product, color, and patterns.

\*\* NOTE TO SPECIFIER \*\* Delete pavers and tiles not required.

* + - 1. Architectural Concrete Pavers: Submit samples for type, color and texture available.
      2. Porcelain Pavers: Submit samples for type, color and texture required.
      3. IPE Wood Deck Tiles: Submit samples for type, color and texture required.
      4. Adjustable Pedestals: Submit sample of each pedestal component.
      5. PVC Pipe: Submit 12 inches (305 mm) long sample of PVC pipe.
  1. QUALITY ASSURANCE
     1. Manufacturer Qualifications: Minimum 5 year experience manufacturing similar products.
     2. Installer Qualifications: Installer shall have a minimum of three years proven construction experience and be capable of estimating and building from blueprint plans and details, determining elevations, in addition to proper material handling. All Work shall comply with paver manufacturer's installation and application procedures for pedestal mounted porcelain pavers.

\*\* NOTE TO SPECIFIER \*\* Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
       1. Finish areas designated by Architect.
       2. Do not proceed with remaining work until workmanship is approved by Architect.
       3. Refinish mock-up area as required to produce acceptable work.
  1. PRE-INSTALLATION MEETINGS
     1. Convene minimum two weeks prior to starting work of this section.
  2. DELIVERY, STORAGE, AND HANDLING
     1. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
     2. Protect Pavers/Tiles and Pedestal System during shipment, storage and construction against damage. Store a minimum of 4 inches (102 mm) off the ground in a dry location and cover with polyethylene to protect from contact with materials which would cause staining or discoloration.
     3. Handling: Handle materials to avoid damage.
  3. PROJECT CONDITIONS
     1. System specified shall be used with pedestrian traffic only with all four sides of a deck system shall be designed to restrain and contain the decking panels with perimeter blocking or walls. Decking panels shall not be allowed to move laterally.
     2. All membrane waterproofing and protection board surfaces to receive pedestals shall be broom clean, frost free, and free of dirt, oil or any rough foreign matter, which may impair the waterproofing / roofing manufacturers guarantee or protection requirements.
     3. The substrate that is to receive pedestals shall have slope and provide positive and adequate drainage in accordance with good building practice and applicable building codes.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Decks over Roofing and Waterproofing:
       1. Where high density closed cell extruded 60 psi (414 kPa) polystyrene insulation is installed on top of the membrane in a protected membrane system, pedestals may be installed directly on top of the insulation.
       2. Do not use pedestals over any insulation less than 60 psi (414 kPa) or with low density polystyrene (bead board) insulation.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Decks on Grade:
       1. Substrate soil that is to receive pedestals shall be adequately compacted and have positive drainage slope. A base of 1/4 inch (6 mm) minus breeze shall be installed and compacted at pedestal locations.
       2. Wall or perimeter containment on all open sides is required. Install structural perimeter containment that restrains the entire decking system.
    2. Installation or anticipated installation of additional items on top of the deck such as planters, hot tubs, sculptures, or industrial equipment shall be supported directly by additional pedestals that are in addition to the main deck paver/tile pedestal system. Failure to adequately support the additional weight of any such features or items may cause significant damage to the deck, underlying structure, or waterproofing.
  1. SEQUENCING
     1. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.
  2. WARRANTY

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Manufacturer's Warranty: Paver and pedestal system manufacturer (Concrete, porcelain, IPE wood pavers and pedestals) shall warrant the materials to remain free from defects for a period of five years.
       1. The complete assembly of insulation (if used), protection board (if used), drainage mat (if used), pedestals and pavers is to be restrained at the perimeter of the deck area.
       2. Perimeter parapet walls, concrete dividers or other perimeter restraint is to be capable of resisting lateral forces (including seismic and wind). Cumulative movement in excess of 1/8 inch (3 mm) will void the pedestal system warranty.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. Pedestal System (IPE Wood Deck Tiles and pedestals) shall remain free from defects for a period of Five years.
    1. Contractor's Warranty: The Contractor shall warrant the Work to remain free from defects of labor and materials used in conjunction with his work in accordance with the General Conditions for this Project for a maximum of two years.
  1. EXTRA MATERIALS
     1. Extra Materials: Deliver supply of maintenance materials to the owner. Furnish not less than 1 percent maintenance materials from same lot as materials installed, and enclosed in protective packaging with appropriate identifying labels.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: Tile Tech Pavers, which is located at: 4730 E. 26th St.; Vernon, CA 90058; Toll Free Tel: 888-380-5575; Tel: 213-380-5560 ; Fax: 213-380-5561 ; Email: [request info (sales@TileTechPavers.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=Tile+Tech+Pavers&coid=44152&rep=&fax=213-380-5561); Web: <http://www.tiletechpavers.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
    2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

\*\* NOTE TO SPECIFIER \*\* Tile Tech roof pavers and adjustable pedestal system offers a solution for all roofing and waterproofing needs from standard Roof Ballast and Walkway, to Architectural Plazas and Green Roofs converting them into functional and attractive spaces.

* 1. PAVERS
     1. Roof Pavers:

\*\* NOTE TO SPECIFIER \*\* Our Cool-Roof™ pavers utilize a high reflective value and low emissivity rate resulting in a high Solar Reflectance Index (SRI) value; Tile Tech Cool-Roof™ pavers have a minimum SRI value of 78. This high SRI value allows you to meet the needs for "LEED" certified projects when used on your roof and balconies and can also be installed on pedestals for a complete roofing system.

* + - 1. Product: Cool-Roof Series Pavers as manufactured by Tile Tech Inc.
         1. Color: Standard and custom range manufactured by Tile Tech Inc.

\*\* NOTE TO SPECIFIER \*\* Delete size not required.

* + - * 1. Size: 20 x 20 x 2 inches nominal (500 x 500 x 50 mm exact).
        2. Size: 16 x 16 x 1-1/2 inches nominal (400 x 400 x 38 mm exact).
        3. Size: 12 x 12 x 1 inch nominal (300 x 300 x 25 mm exact).
        4. Size: 12 x 12 x 2 inch nominal (300 x 300 x 50 mm exact).
        5. Size: 12 x 24 x 1-1/2 inches nominal (300 x 600 x 38 mm exact).
        6. Size: 16 x 24 x 1-5/8 inches nominal (400 x 600 x 42 mm exact).
        7. Finish: Shot-blasted with 3/16 inch (4.8 mm) bevel on all four sides of finished surface.
        8. Weight: 11 to 22 lbs per square foot (50 to 100 kg per sq. m) depending on paver size and thickness.

\*\* NOTE TO SPECIFIER \*\* Granite-Tech™ pavers are produced under extreme hydraulic pressure by bonding crushed granite and limestone together within a color cement matrix duplicating the forces of nature. The pavers are then ground to expose the beauty of the natural granite chips and can be honed or shot blasted resulting in a granite-like, slip resistant and high strength paver.

* + - 1. Product: Granite-Tech Series Pavers as manufactured by Tile Tech Inc.

\*\* NOTE TO SPECIFIER \*\* Delete size not required.

* + - * 1. Size: 20 x 20 x 2 inches nominal (500 x 500 x 50 mm exact).
        2. Size: 16 x 16 x 1-1/2 inches nominal (400 x 400 x 38 mm exact).
        3. Size: 12 x 12 x 1 inch nominal (300 x 300 x 25 mm exact).
        4. Size: 12 x 12 x 2 inch nominal (300 x 300 x 50 mm exact).
        5. Size: 12 x 24 x 1-1/2 inches nominal (300 x 600 x 38 mm exact).
        6. Size: 16 x 24 x 1-5/8 inches nominal (400 x 600 x 42 mm exact).
        7. Finish: Shot-blasted with 3/16 inch (4.8 mm) bevel on all four sides of finished surface.
        8. Weight: 11 to 22 lbs per square foot (50 to 100 kg per sq. m) depending on paver size and thickness.

\*\* NOTE TO SPECIFIER \*\* Stamp-Tech™ pavers can be manufactured in wide range of surface designs and sizes in addition to endless colors and aggregate mixes. Stamp-Tech™ Slate pavers have been designed to reproduce the texture, color and appearance of natural slate and its irregular top surface was developed from actual sections of stone.

* + - 1. Product: Stamp-Tech Series Pavers as manufactured by Tile Tech Inc.

\*\* NOTE TO SPECIFIER \*\* Delete size not required.

* + - * 1. Size: 20 x 20 x 2 inches nominal (500 x 500 x 50 mm exact).
        2. Size: 16 x 16 x 1-1/2 inches nominal (400 x 400 x 38 mm exact).
        3. Size: 12 x 12 x 1 inch nominal (300 x 300 x 25 mm exact).
        4. Size: 12 x 12 x 2 inch nominal (300 x 300 x 50 mm exact).
        5. Size: 12 x 24 x 1-1/2 inches nominal (300 x 600 x 38 mm exact).
        6. Size: 16 x 24 x 1-5/8 inches nominal (400 x 600 x 42 mm exact).
        7. Finish: Shot-blasted with 3/16 inch (4.8 mm) bevel on all four sides of finished surface.
        8. Weight: 11 to 22 lbs per square foot (50 to 100 kg per sq. m) depending on paver size and thickness.
      1. Product: Recycled Glass Paver as manufactured by Tile Tech Inc.

\*\* NOTE TO SPECIFIER \*\* Delete size not required.

* + - * 1. Size: 20 x 20 x 2 inches nominal (500 x 500 x 50 mm exact).
        2. Size: 16 x 16 x 1-1/2 inches nominal (400 x 400 x 38 mm exact).
        3. Size: 12 x 12 x 1 inch nominal (300 x 300 x 25 mm exact).
        4. Size: 12 x 12 x 2 inch nominal (300 x 300 x 2 mm exact).
        5. Size: 12 x 24 x 1-1/2 inches nominal (300 x 600 x 38 mm exact).
        6. Size: 16 x 24 x 1-5/8 inches nominal (400 x 600 x 42 mm exact).
        7. Finish: Shot-blasted with 3/16 inch (4.8 mm) bevel on all four sides of finished surface.
        8. Weight: 11 to 22 lbs per square foot (50 to 100 kg per sq. m) depending on paver size and thickness.
      1. Product: Win-Loc as manufactured by Tile Tech Inc.

\*\* NOTE TO SPECIFIER \*\* Delete size not required.

* + - * 1. Size: 20 x 20 x 2 inches nominal (500 x 500 x 50 mm exact).
        2. Finish: Shot-blasted with 3/16 inch (4.8 mm) bevel on all four sides of finished surface.
        3. Weight: 11 to 22 lbs per square foot (50 to 100 kg per sq. m) depending on paver size and thickness.

\*\* NOTE TO SPECIFIER \*\* IPE Wood Tiles are as elegant in function as they are in appearance, Tile Tech IPE Wood Tiles let you bring the natural beauty of exotic hardwood to any environment. IPE Wood paving tiles are designed for constructing raised wood decks over exterior surfaces such as rooftops, terraces and plazas, in both residential and commercial applications.

* + 1. IPE Wood Tiles;
       1. Product: IPE Wood Deck Tiles as manufactured by Tile Tech Inc.
       2. Color: Natural State.

\*\* NOTE TO SPECIFIER \*\* Delete size not required.

* + - 1. Size: Nominal 20 x 20 x 1-1/2 inches (508 x 508 38 mm).
      2. Size: Nominal 24 x 24 x 1-5/8 inches (606 x 606 x 42 mm).
      3. Size: Nominal 24 x 48 x 1-5/8 inches (606 x 1212 x 42 mm).
      4. Finish: Smooth finished.
      5. Weight: 6 lb per sq ft (27 kg per sq. m).

\*\* NOTE TO SPECIFIER \*\* Architectural pavers are the ideal solution to most paving needs either on roof deck or on grade for both commercial and residential applications. We strive to meet the needs of all our architects and specifiers by combining superior strength of >8,000psi and our ability to produce custom mix designs and colors.

* + 1. Porcelain Pavers:

\*\* NOTE TO SPECIFIER \*\* Porce-Pave™ pavers are comprised of a 20 mm single layer of load-bearing porcelain designed for use in conjunction with raised pedestals and support pad systems as well as other dry installation and traditional fixing methods allowing total flexibility in design applications.

* + - 1. Product: Porcelain Paver Series as manufactured by Tile Tech Inc.
         1. Color: Standard range manufactured by Tile Tech Inc.
         2. Size: 24 x 24 x 3/4 inches nominal (596 mm x 596 mm x 20 mm exact).
         3. Weight: 9 lbs per sq. ft (41 kg per sq. m.).
         4. Finish: Wood-Plank.
         5. Finish: Wood-Rustic.
         6. Finish: Stone Series.

\*\* NOTE TO SPECIFIER \*\* Oceanic-Series™ Pavers combines the natural elements of the sea with the latest manufacturing techniques to produce a truly breathtaking and highly durable architectural paver, used in pool decks, courtyards, plazas, drive ways, walk ways and roof decks.

* + - 1. Product: Oceanic Series Pavers as manufactured by Tile Tech Inc.
      2. Product: Coral-Pave as manufactured by Tile Tech Inc.
      3. Product: Shell-Pave as manufactured by Tile Tech Inc.
      4. Product: Wave-Pave as manufactured by Tile Tech Inc.
      5. Product: Traver-Pave as manufactured by Tile Tech Inc.

\*\* NOTE TO SPECIFIER \*\* Stair Treads and Pool Copings image In addition to various other complimentary products, we also manufacture various sizes and profiles of reinforced pool copings, stair treads and rises to match any of our paver series.

* + 1. Stair Treads and Pool Copings: Selected from manufacturer's standard configuration.

\*\* NOTE TO SPECIFIER \*\* Our detectable warning pavers are manufactured in several sizes and colors to suit various design requirements and conform to all ADA Codes. Projects will benefit from its high 8,000psi strength and are used in railway platforms, curb ramps and handicap ramps. Custom color and aggregate mixes are available upon special request at no additional cost.

* 1. ADA DETECTABLE WARNING PAVERS
     1. Truncated Domes and Detectable Warning Pavers as manufactured by Tile Tech Inc.
     2. Performance Requirements
        1. Compressive Strength: At the time of delivery, the average compressive strength shall not be less than 8,000 psi (55,000 kPa) with no individual unit less than 7,000 psi (48,000 kPa) per ASTM C140.
        2. Water Absorption: Shall not be greater than 6 percent per ASTM C936.
        3. Flexural Strength: Shall not be less than 800 psi (5,500 kPa) per ASTM C293.
        4. Freeze/Thaw: Durability of the paver shall meet the freeze/thaw tests per Section 8 of ASTM C67 and shall have no breakage and not greater than 1 percent loss in dry weight of any individual unit when subject to 50 cycles of freeze/thaw.
        5. Static Coefficient of Friction: ASTM C1028 conditionally slip resistant:
           1. Wet: 0.50 - 0.60.
           2. Dry: 0.60 - 0.70.
        6. Sizing Dimensions: Shall not differ by more than 1/16 inch (1.6 mm) from width, height, length or thickness. Unit shall conform to a true plane and not differ by more than 1/16 inch (1.6 mm) in either concave and/or convex warpage.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Sand-Set Method:
       1. Sand Setting Bed Material: Sand shall be common sand generally referred to as concrete sand and shall be free of organic materials and any other contaminates that could potentially stain or otherwise damage the unit pavers.
       2. Joint Filler Materials: Sand conforming with ASTM C144 with 100 percent passing a No. 16 sieve.
       3. Landscape Filter Fabric: Woven or non-woven non-biodegradable filter between the compacted base and the sand leveling bed.
       4. Preformed Asphalt Joint Filler: As indicated on Drawings. ASTM D994, 1/2 inch (13 mm) thick, for expansion joints which are not sealed, one of the following:
          1. Code 1301 by W.R. Grace and Co.
          2. Asphalt Expansion Joint by W. R. Meadows, Inc.
          3. Elastite Asphalt Expansion Joint by The Celotex Corporation.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Mortar Setting Bed (Thin-Set) Method - Pedestrian:
       1. Latex Mortar Mix: ANSI A118.4.
       2. Water: Clean and free of deleterious acids, alkalies or organic materials.
       3. Grout: ANSI A118.6, Grout - Latex.
       4. Sealant, Back-up and Bond Breaker: As specified in Section 07 91 26 - Joint Fillers.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Portland Cement Setting Bed (Thick-Set) Method:
       1. Portland Cement Mortar Mix: ASTM C150 Custom Building Products thick Bed Mortar Mix with Admixture, or approved equal.
       2. Reinforcement: 2 by 2 inches (51 by 51 mm) - 16/16 welded galvanized wire mesh used in thick mortar bed.
       3. Water: Clean and free of deleterious acids, alkalis or organic materials.
       4. Grout: Custom Building Products Grout with Admix, color as selected or approved equal.
       5. Bond Slurry: Custom Building Products bond coat or approved equal.
       6. Sealant, Back-up and Bond Breaker: As specified in Section 07 91 26 - Joint Fillers.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Bituminous Setting Bed Method
       1. Asphalt Setting Bed Materials:
          1. Asphalt Cement: ASTM D3381, viscosity grade AC-10 or AC-20.
          2. Fine Aggregate: Clean, hard sand, free of organic matter, uniformly graded from coarse to fine, all passing the No.4 sieve meeting the gradation requirements when testing in accordance with ASTM C136.
          3. Mixing: Provide plant mixed asphalt setting bed by combining approximately 93 percent dry fine aggregate and approximately 7 percent hot asphalt cement and heat to approximately 300 degrees F (149 degrees C). Provide each ton of setting bed material apportioned by weight with the approximate ratio of 145 lb (66 kg) of asphalt to 1,855 lb (841 kg) of sand.
       2. Setting Bed Primer: Cut back asphalt, ASTM D2028, grade as recommended by manufacturer.
       3. Asphalt Adhesive: Standard neoprene modified asphalt adhesive containing oxidized asphalt combined with 2 percent neoprene and 10 percent long fibered mineral fibers with a softening point of 155 degrees F (68 degrees C).
       4. Joint Filler Materials: Sand conforming to ASTM C144 with 100 percent passing a No. 16 sieve.
       5. Pre-formed Asphalt Joint Filler: ASTM D994, 1/2 inch (13 mm) thick, for expansion joints which are not sealed, one of the following:
          1. Code 1301 by W.R. Grace and Co.
          2. Asphalt Expansion Joint by W. R. Meadows, Inc.
          3. Elastite Asphalt Expansion Joint by The Celotex Corporation.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. PEDESTAL SYSTEM

\*\* NOTE TO SPECIFIER \*\* Our new patented Hybrid Pedestal™ System consists of 6 standard components and off-the-shelf, 4.215 inches diameter SDR-35 PVC pipe. The PVC pipe allows the pedestal system to vary in height up to 22+ inches and is cut to the desired height using 12 inches chop saw and also features a built in screw adjustment with a self-leveling head for fine height and slope compensation.

* + 1. Adjustable Pedestal Systems:
       1. Hybrid Pedestal as manufactured by Tile Tech Inc.
       2. Uni-Just as manufactured by Tile Tech Inc.
       3. Stak-Cap as manufactured by Tile Tech Inc.
    2. Pedestals:

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. Stak-Cap Pedestals: PVC Pipe and Stack Adjustable:
         1. Stack or use SDR35 PVC pipe to accommodate various height adjustments of 1/2 inch to 6 inches (13 mm to 152 mm).
         2. Each cap provides maximum of 1/2 inch (13 mm) of height and 1 percent slope. Rotate and stack one cap relative to another to accommodate slope adjustments from 0 percent to 4 percent.
         3. Base diameter of 6 inches (152 mm) and top diameter of 5-1/4 inches (133 mm) and is 1/2 inch (13 mm) high.
         4. Made of high impact and flame resistant ABS plastic.
         5. Use of Buffer Pads under Stak-Cap Pedestals is mandatory.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. Uni-Just Pedestals: PVC Pipe and Screw Adjustable:
         1. Assembly Consist of 5 Parts: Uni-Base, Uni-Collar, Uni-Insert, Uni-Cap and Buffer Pads.
         2. Use 4 inch -SDR35 PVC pipe to accommodate various height adjustments from 2 inches to 24 inches (50 mm to 610 mm).

\*\* NOTE TO SPECIFIER \*\* Additional precise height adjustment of up to 1-1/2 inches (38 mm) with the use of Uni-Insert™ which can screw up or down while loaded.

* + - * 1. Self-leveling and can tilt in any direction to a level plane to accommodate slope adjustments from 0 to 4 percent.
        2. Base diameter of 7 inches (178 mm) with bearing surface area of 38 square inches (0.0245 sq. m).
        3. Made of 100 percent recycled and flame resistant High Density Polypropylene.
        4. Use of Buffer Pads under Uni-Just Pedestals is mandatory.
      1. Uni-Shims:
         1. 1/8 inch (3 mm) and 1/16 inch (1.5 mm) thick.
         2. Can be used whole or broken into halves or quarters and can be stacked up to 2 high.
         3. Used on top of Stak-Cap or Uni-Just Pedestals for fine leveling of pedestals and or individual Paver/Tiles.
         4. Made of high impact and flame resistant ABS plastic.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. IPE Lock Washer and 1-1/4 inch (32 mm) deck screws.
         1. Once level, used to lock down the 4 tiles corners and ensure a safe, secure and level surface.
    1. Other Components: Installer or user supplied.
       1. Pedestal Pipe: 4 inch diameter SDR35 PVC Sewer Pipe.
          1. Used with either Stak-Cap or Uni-Just Pedestals and is cut to required height.
          2. Dimensions: 4.215 inches (107 mm) outside diameter and 3.890 inch (99 mm) inside diameter.
          3. Meet ASTM D-3034 and F-679.
          4. NOT supplied with pedestal components by Tile Tech Inc.
       2. Protection Course:
          1. Protection board (required over insulated BUR systems, and when specified for use over bituminous asphalt-based waterproofing): W.R. Meadows "Vibraflex" or equal, minimum 3/8 inch (9.5 mm) thick asphaltic composition protection board.
          2. Insulation (when specified): Dow Styrofoam "Highload 100" or equal, minimum compressive strength of 100 psi recommended for foam plastic insulation placed beneath Pedestal System to prevent damage to the waterproofing membrane.
          3. NOT supplied with pedestal components by Tile Tech Inc.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. Decking Screw: 1-1/4 inches (32 mm) long used to secure 4 corners of IPE Deck Tiles to pedestal system.

1. EXECUTION
   1. EXAMINATION
      1. Do not begin installation until substrates have been properly prepared.
      2. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. PAVER/TILE INSTALLATION
     1. Examination: Prior to starting work inspect the substrate to ensure that it has been properly prepared to accept the Tile Tech Pedestal System. The substrate and or surface shall be clean and free of any projections and debris which may impair the performance of the pedestal and or the deck system. Verify all elevations, required pedestal heights and deck dimensions. Commencement of work shall imply acceptance of surfaces and deck conditions.
     2. Preparation: The substrate surface that will receive the Pedestal System shall be well compacted (on Grade) or structurally capable of carrying the dead and live loads anticipated.

\*\* NOTE TO SPECIFIER \*\* Delete option not required.

* + - 1. Insulation over the membrane: (Option 1) Insulation and/or protection board (if specified) shall be applied over the waterproofing substrate and/or specified drainage mat. Install the system according to the membrane manufacturer's recommendations and specifications.
      2. Insulation under membrane: (Option 2) Insulation required to be installed within a roofing system below deck supports shall meet the roofing membrane manufacturers' specifications and shall have a minimum core density of 60 psi (414 kPa).
      3. Protection Board: (for asphalt type systems used over waterproofing) Full coverage 1/8 inch (3 mm) asphaltic composition protection board is recommended. When protection is specified only under the pedestal cut protection board pads to extend beyond the outside perimeter of the pedestal system base or buffer pad by a minimum of two inches (51 mm).
      4. Drainage Mat: (when desired or specified) Install drainage mat according to the manufacturers recommendations to avoid crushing.
    1. Install in accordance with Tile Tech Inc and other contributing manufacturer's instructions. Installation requirements vary for each individual project site. Decking paver or tile used, pattern, grid layout, starting point, and finished elevation shall be shown on plan view shop drawings, which have been prepared and approved by the designer, installing contractor and/or Owner.
    2. Grid Layout and Elevations:
       1. Once the starting point and the finished elevation of the deck surface have been determined, the "Top of Pedestal Elevation" (finished elevation less decking paver or tile thickness) is established and marked around the perimeter using a transit water level or laser leveling device.
       2. Precise measurements shall be taken and deck area shall be accurately defined. Mark off and ' square up' all outside edges with control lines using "snapped" chalk lines. Mark two lines that are perpendicular to each other across the deck area. Continue to mark a grid of lines in both directions marking the location of each pedestal. Use the control lines as references to periodically check and assure a square layout during installation.
       3. Next, a pedestal shall be placed where each measured grid line meets the perimeter. Remove two spacer tabs in line with one another atop each pedestal system placed around the perimeter. Remove all four spacer tabs at corners.
       4. Adjust each pedestal height to the "Top of Pedestal Elevation" marked on the perimeter. Position the pedestal as close to the edge of the perimeter as possible, with the two remaining spacer tabs aligned with the grid line. Using the elevation marked on the perimeter, stretch a mason's line along and slightly ahead of the second row of pedestals. A laser leveling device may also be used for this purpose.
       5. On larger decks, it is recommended that Tile Tech Pedestal System be pre-assembled and pre-set to the proper elevation and placed in position prior to the installation of decking paver or tile.
       6. As the pedestals located along the grid lines are loaded with porcelain pavers or tiles, fine vertical height adjustment can be made by inserting and rotating, from the top, a T-handle Hex Key in to the Uni-Insert of the Pedestal assembly. Clockwise rotation of the Uni-Insert will raise the bearing surface and the deck. Counter-clockwise rotation will lower the top bearing surface and deck.
       7. Always maintain adequate thread engagement. Tile Tech Pedestal Uni-Insert contains a locking tab that will not allow the screw to extend past its maximum extension. Never use if the locking tab is broken. If the height required goes beyond the Uni-Insert limit re-cut PVC pipe to the correct height and re-assemble the pedestal using the correct size pipe.
       8. Slight irregularities in decking paver or tile thickness can be compensated for by using one to two shim segments. Place on top of the pedestal, under the corner(s) of the decking paver or tile. Use no more than two shims on top of the pedestal and always adhere quartered (1/4) wedges with construction adhesive.
       9. Stak-Cap Pedestal can be used for limited and or fixed height requirements. Complete deck and grid layout as instructed above. Stack no more than five fixed height Stak-Cap Pedestals together and place in lieu of Uni-Just Pedestals where needed. Stak-Cap Pedestal can also be used with PVC pipe to reduce cost. Spacer tabs can be removed to accommodate perimeter and corner support locations.
    3. Slope and Height Compensation:
       1. Stak-Cap Pedestals can provide limited slope and height compensation to maintain a level decking surface over sloping substrates and is accomplished using a combination of the following:
          1. Rotate and stack one cap in relation to another to change slope and add height. Each cap will add 1/2 inch (13 mm) of height and provide 1 percent slope. Stack no more than 5 caps.
          2. Can also be used with PVC Pipe cut to required height of maximum of 6 inches (152 mm).
       2. Uni-Just Pedestals can provide both slope and height compensation to maintain a level decking surface over sloping substrates and is accomplished using a combination of the following:
          1. PVC Pipe cut to varying lengths to compensate for general height requirements.
          2. Screw extension for precise height adjustment.
          3. Self-Leveling cap that pivots and tilts in any direction for slope compensation from 0 percent to 4 percent.
       3. Tile Tech Pedestals are designed to be rotated for final precise adjustment when they are fully loaded. Pedestals shall be leveled in each succeeding row as the installation proceeds. Final height adjustment or maintenance is easily made by simply using a T-handle Hex Key that allows you to adjust the pedestals without removing the Porcelain Pavers. T-handle Hex Key is inserted between the four paver corners to engage Uni-Insert portion and is adjusted clockwise or counter clockwise to level as needed.
       4. Uni-Shims may be used in multiples, whole or quarters, and placed under the pedestal base or on top the pedestal cap to level pedestals. Use a small amount of construction adhesive to adhere sections of shims and/or whole shims to each other or to the pedestal. DO NOT use construction adhesive to adhere pedestal or shims to insulation, roofing or waterproofing membrane. Additional sections of shims may be used and shall be available for regular maintenance.

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* + - 1. Once level, IPE Lock Washer shall be used so secure the tiles to the pedestal system. Insert special washer in to the slot in the corners of 3 tiles than install the 4th tile. Screw down the washer with 1-1/4 inches (32 mm) deck screw, locking down the 4 tiles corners and ensure a safe, secure and level surface.
    1. Perimeter Containment: Any area of the pedestal deck that is not restrained by a parapet or foundation wall shall be ' boxed-in' and contained. The deck panels will move if all sides are not adequately restrained. Perimeter framing and edging boards located at the outside of the deck perimeter shall be installed to provide restraint. No movement shall be allowed at the perimeter of the deck system greater than one tab width.
    2. Field Quality Control: Inspect often during installation to assure that grid spacer lines are being maintained in a straight and consistent pattern and that deck Porcelain Pavers or tiles are level and not rocking. Unless otherwise specified in writing to allow for expansion, inspect to assure that all paver spacing between tiles and at perimeter walls does not exceed a tab width. Particular attention shall be made to assure that all pedestrian entry or access points to the deck are level and that the deck surface tiles are not randomly raised or uneven creating a tripping or safety hazard.
    3. Confirm that deck pedestal height excess of 24 inches (610 mm) have been braced in accordance with Tile Tech Inc written instructions.

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* 1. ADA DETECTABLE WARNING:
     1. Prior to starting work inspect the sub-grade to ensure that it has been properly prepared. Commencement of work shall imply acceptance of sub-grade conditions.
        1. Verify that sub-grade preparation, compacted density and elevations conform to the specifications. Compaction of the soil sub-grade to at least 95 percent Standard Proctor Density per ASTM D-698 is recommended. Higher density or compaction to ASTM D-1557 may be necessary for areas subject to vehicular traffic.
        2. Stabilization of the sub-grade and/or base material may be necessary with weak or saturated sub-grade soils. The Architect/Engineer shall inspect sub-grade preparation, elevations, and conduct density tests for conformance to specifications.
        3. Verify that Geotextiles, if applicable, have been placed according to specifications.
        4. Verify that aggregate base materials, thickness, compaction, surface tolerances, and elevations conform to the specifications.
        5. Verify that base is dry, uniform, even, and ready to support sand, pavers, and imposed or anticipated vehicular loads.
        6. Verify location, type, installation and elevations of edge restraints around the perimeter area to be paved.
     2. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.
     3. Install in accordance with Tile Tech Inc. and other contributing manufacturer's instructions. Installation requirements vary for each individual project site. Precast Pavers used, pattern, grid layout, starting point, and finished elevation shall be shown on plan view shop drawings, which have been prepared and approved by the designer, installing contractor and/or owner.
     4. Placement Tolerance:
        1. Maximum of 1/16 inch (1.6 mm) height variation between adjacent pavers.
        2. Individual pavers shall not vary more than 1/16 inch (1.6 mm) from level across width of the paver.
        3. Paved areas shall not vary more than 1/4 inch (6 mm) from level in a distance of 10 feet (3 m) measured at any location and in any direction.
        4. The surface elevation of pavers shall be 1/8 inch to 1/4 inch (3 mm to 6 mm) above adjacent drainage inlets, concrete collars or channels.
        5. Joints between pavers to be 3/16 inch (4.8 mm) or 1/8 inch (3 mm).
        6. Concrete shall not exceed 1/8 inch in 10 feet (3 mm in 3 m) from required plane. Concrete shall be steel troweled with fine broom finish. No curing or sealing compound shall be used.

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* + 1. Sand-Set Method Installation:
       1. Spread a sand/cement mix evenly over the base course and screed to a nominal 1 inch (25 mm) thickness, not exceeding 1-1/2 inches (40 mm) thickness. The screened sand shall not be disturbed. Place sufficient sand to stay ahead of the laid pavers. Do not use the bedding sand to fill depressions in the base surface.
       2. Lay the pavers in patterns as shown on the drawings. Maintain straight pattern lines.
       3. Field cut pavers with wet masonry saw in accordance with manufacturer's recommendations for methods, equipment and precautions.
       4. Tamp into bedding or use a low amplitude, high frequency plate vibrator to vibrate the pavers into the sand. Cover vibrator plate with carpet or card board to prevent surface damage to pavers.
       5. Sweep dry joint sand into the joints and sweep off excess sand when the job is complete.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Mortar Setting Bed (Thin-Set) Method Installation - Pedestrian:
       1. Installation of Mortar bed as per TCA F102. All Materials used shall follow instructions of manufacturer for use in mortar method.
       2. Install precast concrete pavers.
       3. Grouting of pavers in strict accordance with grout manufacturer's directions and instructions. Use latex or acrylic additives from the same manufacturer as the grout.
       4. All expansion and Control joints shall be installed per TCA EJ171. Joint materials used shall follow manufacturer's directions and instructions.
       5. Rework mixes from time to time to maintain proper consistency, as recommended by manufacturer but do not add ingredients. Discard mortar that has reached its initial set.
       6. Field cut pavers with wet masonry saw in accordance with manufacturer's recommendations for methods, equipment and precautions.
       7. Remove, scrub and wash clean mortar stains and all other types of soiling from exposed paver surfaces.

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* + 1. Portland Cement Setting Bed (Thick-Set) Method Installation:
       1. Installation of Mortar bed as per TCA F101. All materials used follow instructions of manufacturer for use in mortar method.
       2. Install precast concrete pavers and firmly set, tamp into bedding to ensure minimum 95 percent surface contact with mortar bed. Coat underside of each precast pavers unit with latex cement mortar.
       3. Grouting of pavers in strict accordance with grout manufacturer's directions and instructions. Use latex or acrylic additives from the same manufacturer as the grout.
       4. All expansion and Control joints shall be installed per TCA EJ171. Joint materials used shall follow manufacturer's directions and instructions.
       5. Field cut pavers with wet masonry saw in accordance with manufacturer's recommendations for methods, equipment and precautions.
       6. Remove, scrub and wash clean mortar stains and all other types of soiling from exposed paver surfaces.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Bituminous Setting Bed Method Installation:
       1. Place solid steel 3/4 inch (19 mm) thick control bars directly on the base or slab. Install shims under bars for minor adjustment of depth and finish paver elevations. Space bars approximately 11 feet (3.4 m) apart and parallel to each other to serve as guides for strike-off boards.
       2. Place asphalt setting bed at not less than 200 degrees F (93 degrees C) in panels between control bars on the primed concrete slab or binder course to no less than 3/4 inch (19 mm) compacted thickness. Spread material and strike off by pulling the material with a 12 feet long by 2 inches by 6 inches (3.7 m by 51 mm by 152 mm) wood board several times to produce a smooth firm and even setting bed. Add fresh material in low, porous spots after each pass of the strike-off board. After each panel is complete remove and advance the first control bar to the next panel position in readiness for placing and striking adjacent panels. Fill in depressions left by the control bar.
       3. Roll setting bed with a roller (not over one ton in weight) to a nominal depth of 3/4 inch (19 mm) thick while it is still hot. Add additional material to adjust thickness required and to allow for setting of pavers to finish elevations and slopes.
          1. If setting bed is installed greater than 1-1/2 inches (38 mm) thick, place in two equal lifts. Place the second lift immediately after the first to assure bond between lifts.
          2. If pavers are not installed immediately after setting bed, provide protection of setting bed with minimum 1/2 inch (13 mm) plywood sheet laid on the setting bed with butted joints. Repair all damage to the setting bed prior to installing pavers.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Concrete Slab Installation - Vehicular:
       1. Install precast concrete pavers, slabs and curbs in locations, patterns and at elevations and with slopes for surface drainage as shown on the Drawings and in accordance with the manufacturer's printed installation instructions and the final reviewed shop drawings.
       2. Apply neoprene modified asphalt adhesive on the cured setting bed by squeegeeing or troweling. If troweled on, use a trowel with serrations not exceeding 1/16 inch (1.5 mm) depth. Place adhesive to not more than 1/16 inch (1.6mm) thickness over the total surface of the setting bed. Do not begin installation of pavers, slabs and curbs until adhesive is dry to the touch.
       3. Lay out pavement in 30 feet (9 m) working area modules. Set precast concrete pavers, slabs and curbs by hand on dry adhesive in patterns shown on the Drawings with hand tight joints 1/16 inch to 1/8 inch (1.6 mm to 3 mm) wide joints and uniform top surfaces.
       4. Field cut pavers with wet masonry saw in accordance with manufacturer's recommendations for methods, equipment and precautions.
       5. Maintain accurate alignment and check for creep and shrinkage. Make adjustments to creep and shrinkage within the 30 feet (9 m) module area.
       6. Sweep fine dry sand over pavement surface to fill joints immediately after installing pavers, slabs and curbs on setting bed. Brush in sand until joints are completely filled, remove surplus sand. Do not allow traffic on installed pavers, slabs or curbing until the joints have been filled.
       7. Protect newly laid pavers, slabs and curbs with plywood panels on which workers stand. Advance protective panels as work progresses but maintain protection in areas subject to continued movement of materials and equipment to avoid creating depressions or disrupting alignment of installed pavers, slabs and curbs.
       8. Install the specified joint filler where precast concrete pavers, slabs and curbs abut curbs, other vertical surfaces and other construction.
       9. After the precast concrete paving is completed, backfill the spaces along the edges of the walks, metal edging and pavements to the required elevations with material reviewed by the Testing Laboratory. The Material shall then be compacted until firm and the surface neatly graded, with allowance made for top soil.
    2. Cleaning and Sealing:
       1. Wash entire surface with phosphate free neutral cleaner with pH factor between 7 to 10 and rinse with clean water and allow to dry thoroughly.
       2. Apply sealer in accordance with manufacturer's directions.
          1. pH factor between 7 and 10.
          2. Non-discoloring and UV resistant.
          3. Penetrating type designed especially for precast concrete pavers.
    3. Final Acceptance: Prior to final acceptance check for rocking porcelain pavers and adjust using T-Handle Hex Key or shim immediately. Pedestals can settle and may have to be realigned. Failure to do so can cause a tripping hazard. Periodically check spacer tabs and immediately replace broken tabs to limit deck movement. Make sure the edge restraint stays intact and structurally sound.
  1. PROTECTION
     1. Protect installed products until completion of project.
     2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION