Tile Tech Pavers

Paving America one step at a time.

Architectural Pavers

Specification Guide

&

Installation Details

CONCRETE PAVERS SPECIFICATIONS GUIDE

SANDSET METHOD

PART 1 GENERAL

1.1 SUMMARY

A. Furnish materials, labor, transportation, services, and equipment necessary to furnish and install Architectural Concrete Pavers as indicated on drawings and as specified herein.

1.2 REFERENCES

A. American Society of Testing Materials (ASTM):

1. ASTM C-150
2. ASTM C-33
3. ASTM C-140
4. ASTM C-293
5. ASTM C-1028
6. ASTM C501, 50
7. ASTM C241

B. Performance Requirements

1. Compressive Strength at the time of delivery to be not less than 5,000 psi; Averaging 7,000 psi when tested in accordance with ASTM C-140.
2. Water Absorption shall not be greater than 5-1/2% to 6-1/2%, when tested In accordance with ASTM C-293.
3. Flexural Strength shall not be less than 900psi average. 950psi when tested In accordance with ASTM C-293.
4. Static Coefficient of Friction ASTM C-1028 conditionally slip resistant:
   a. Wet: 0.50 - 0.60
   b. Dry: 0.60 - 0.70

1.3 QUALITY ASSURANCE

A. Manufacturer: Company specializing in the manufacture of pre-cast concrete pavers for a minimum of three (3) years.

B. Installation shall be by a contractor and crew with at least (1) year of experience in placing concrete pavers on projects of similar nature or dollar cost.

C. Installation Contractor shall conform to all local, state/provincial licensing and bonding requirements.

1.4 SUBMITTALS

A. Submit installation instructions as recommended by manufacturer.

B. Submit full size sample sets of concrete paving units to indicate color and shape selections. Color will be selected by Architect / Engineer / Landscape Architect / Owner from manufacturer's available colors.

C. Submit sieve analysis for grading of bedding and joint sand.

D. Submit test results from an independent testing laboratory for compliance with performance requirements specified herein.

E. Indicate layout, pattern, and relationship of paving joints to fixtures and project formed details.

F. Submit two copies of written instructions for recommended maintenance.

1.5 PROJECT CONDITIONS

A. Do not install sand or pavers during heavy rain or snowfall.
B. Do not install sand and pavers over frozen base materials.
C. Do not install frozen sand.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Packaging and Shipping: Precast pavers to be stretch wrapped in rows and banded on pallets, delivered in original unopened packaging with legible manufacturer identification, including size, quantity, manufacture date and inspector initials.

B. Sand shall be covered with waterproof covering to prevent exposure to rainfall or removal by wind. The covering shall be secured in place.

1.7 WARRANTY

A. Manufacturer/Installer shall warrant installed system for a period of 3 year from date of substantial completion against failure of workmanship and materials.

1.8 MAINTENANCE

A. Extra Materials: Deliver supply of maintenance materials to the owner. Furnish maintenance materials from same lot as materials installed, and enclosed in protective packaging with appropriate identifying labels.

1. Furnish not less than 1 percent of total product installed maintenance stock for each type, color, pattern and size of paver product installed.

PART 2 - PRODUCTS

2.1 CONCRETE PAVERS

A. Manufacturers

1. Acceptable Manufacturer
   a. Tile Tech Industries - Los Angeles, CA - (213) 380-5560, www.TileTechPavers.com
2. Drawings and installation specifications are based on manufacturer's proprietary literature from Tile Tech Industries. Other manufacturer's shall comply with the minimum levels of material specifications and detailing indicated on the drawings or specified herein.

2.2 MATERIALS

A. *Portland Cement:* ASTM C-150 specifications for Portland Cement.

B. *Aggregates:* All aggregates to meet ASTM C-33 specifications, cleaned and properly graded to size. Aggregate shall be blended to meet individual project requirements. Aggregates to meet ASTM C241 HA 10 minimum.

C. *Coloring:* Pigments used shall be inorganic, resistant to alkalinity and used per manufacturer's recommendations.

D. *Color Blending:* Factory-blend pre-cast paver that has a natural color range so products taken from one container will have the same range as products from a separate container.

E. *Cleaner:* Liquid neutral chemical cleaner with pH factor between 7 and 8, of formulation recommended by sealer manufacturer for type of precast paver used.

F. *Sealer:* Colorless, slip and stain resistant penetrating or acrylic sealer with pH factor between 7 and 8 that does not affect color or physical properties of precast paver surface.

2.3 MANUFACTURED UNITS

A. Precast Pavers
1. Sizes: 11.875" x 11.875" (Actual)
11.875" x 23.622" (Actual)
15.75" x 15.75" (Actual)
19.68" x 19.68" (Actual)
15.75" x 15.75" Octagonal
2. Square face edges or beveled.
3. Finish: Rough ground and shot blast surface.
4. Color:
a. Custom - Colors selected from blended aggregate and matrix colors.
b. Colors to be selected from Tile Tech stocking color chart.
5. Concrete pavers are not factory sealed.

2.4 MIXES

A. *Aggregate:* natural, sound, crushed marble chips without excessive flats or flakes

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B. *Matrix Pigments:* Pure mineral or synthetic pigments, resistant to alkalies and non-fading. Mix pigments with matrix to provide required colors.

C. *Face layer:* Minimum depth of 3/8" (nominal) and shall include 70% coverage of the Paver face with marble aggregate.

2.5 FABRICATION

A. Mechanically vibrated in the molds.
B. Hydraulically pressed by 600 tons of pressure.
C. Moisture cured with 100% humidity for 24 hours.

D. Factory finish: In-line grinding and shotblasting.

2.6 SAND BEDDING COURSE

A. Bedding and joint sand shall be clean, non-plastic, and free from deleterious or foreign matter. The sand shall be natural or manufactured from crushed rock. Limestone screenings or stone dust shall not be used.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that subgrade preparation, compacted density and elevations conform to the specifications. Compaction of the soil subgrade to at least 95% 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. Stabilization of the subgrade and/or base material may be necessary with weak or saturated subgrade soils. The Architect/Engineer should inspect subgrade preparation, elevations, and conduct density tests for conformance to specifications.

B. Verify that Geotextiles, if applicable, have been placed according to specifications.

C. Verify that aggregate base materials, thickness, compaction, surface tolerances, and elevations conform to the specifications.

D. Verify location, type, installation and elevations of edge restraints around the perimeter area to be paved.

E. Verify that base is dry, uniform, even, and ready to support sand, pavers, and imposed or anticipated vehicular loads.

3.2 INSTALLATION

A. Spread a sand/cement mix evenly over the base course and screed to a nominal 1 in. (25 mm.) thickness, not exceeding 1-1/2 in. (40mm) thickness. The screened sand should 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.

B. Ensure that pavers are free of foreign materials before installation.

C. Lay the pavers in the pattern(s) as shown on the drawings. Maintain straight pattern lines.

D. Fill gaps at the edges of the paved area with cut pavers.

E. Cut pavers to be placed along the edge with a wet masonry saw.

G. Tamp into bedding or use a low amplitude, high frequency plate vibrator to vibrate the pavers into the sand (cover vibrator plate to prevent surface damage to pavers).

H. Sweep dry joint sand into the joints.
I. Sweep off excess sand when the job is complete.
J. The final surface elevations shall not deviate more than 1/16 in. under a 10 ft. (3 m) long straightedge.

K. The surface elevation of pavers shall be 1/8 in. to 1/4 in. (3 to 6 mm) above adjacent drainage inlets, concrete collars or channels.

3.3 CLEANING AND SEALING

A. Wash entire surface with neutral cleaner.
1. pH factor between 7 and 10.
2. Biodegradable phosphate free.

B. Rinse with clean water and allow to dry thoroughly.

C. Apply sealer in accordance with manufacturer's directions.
1. pH factor between 7 and 10
2. Non-discoloring or amber.
3. Penetrating type designed especially for precast concrete pavers.

END OF SECTION

BONDED AND THIN SET METHOD

PART 3 – EXECUTION (BONDED METHOD)

3.1 EXAMINATION

A. Inspect areas to receive underbed for:
1. Defects in existing concrete work that affect proper execution of Paver installation.
2. Variances beyond allowable tolerances.
   Note: Structural cracks in substrate will usually be transmitted through Pavers. All cracks to have control joint installed directly over crack. Small cracks can use a fracture membrane system.

3.2 INSTALLATION

A. Underbed
1. Thoroughly saturate concrete with water, slush and broom with neat cement paste.
2. Place underbed mix approximately 1" to 1 ¼".
3. Screed underbed to elevation of "paver thickness" below finished floor elevation.

PART 3 – EXECUTION (THINSET METHOD)

3.1 EXAMINATION

A. Inspect areas to receive underbed for:
1. Defects in existing work that affect proper execution of Paver installation.
2. Variances beyond allowable tolerances.
3. Maximum variation in subfloor not to exceed 1/8" in 10'0" from required plane.

3.2 INSTALLATION

A. Thinset application
1. Apply latex cement mortar, conform with ANSI A118.4 utilizing a 3/8" x 1/4" square notch trowel.
2. Apply thin set for a minimum of 1/8" setting bed. Allow for thinset manufacturers' recommended setting time before grouting (if required).
3. Coat underside of each unit with latex cement mortar, firmly set, tamp into bedding to ensure minimum 95% surface contact with mortar bed.
4. All units to be installed level, square, parallel, except where otherwise indicated in a true plane with adjacent units and other floor finishes.
5. Maintain a maximum joint of 1/32" or less.

B. Control Joints
1. Over all structural expansion joints
2. All perimeter edges to have soft joints.

END OF SECTION

INSTALLATION DETAILS

- PEDESTRIAN INSTALLATION
  1. SANDSET INSTALLATION
     A. Over compacted aggregate base
     B. Overlay on existing asphalt
     C. Overlay on existing concrete

- PEDESTRIAN INSTALLATION
  2. MORTAR SET INSTALLATION
     A. Thin set over concrete
     B. Thick mortar set

- STAIR TREADS AND RISERS

- VEHICULAR INSTALLATION
  1. MORTAR SET INSTALLATION
     A. Thin set over concrete
     B. Thick mortar set

- ROOF DECK INSTALLATION

- ROOF DECK INSTALLATION ON PEDESTALS

- ROOF DECK INSTALLATION ON PEDESTALS