

Pressed Concrete Pavers – Sand Set Installation Guide Specifications

Section 02 780

Part 1 – General

1.01 RELATED DOCUMENTS

- A. Drawings and general provision of contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to work of this Section.

1.02 SUMMARY

- A. Perform all work required to complete, as indicated by the Contract Documents, and furnish all supplementary items necessary for the proper installation of Pressed Concrete Pavers.
- B. The paver installation shall be absolutely rigid, and even large slabs when subjected to vehicular traffic, shall not be displaced.
- C. Related Sections include the following:
 - 1. Section 31 22 00 Grading.
 - 2. Section 31 23 00 Excavation, Backfilling and Compaction.
 - 3. Section 32 16 00 Concrete Paving, Walks, Curbs and Gutters.
 - 4. Section 07 00 00 Modified Bituminous Sheet Membrane Waterproofing.
 - 5. Section 07 92 00 Sealants.

1.03 REFERENCES

- A. Testing Standards
 - 1. ASTM C-150 - Specification for Portland Cement.
 - 2. ASTM C-127 - Test method for specific gravity and absorption of Course Aggregates.
 - 3. ASTM C-128 - Test method for specific gravity and absorption of Fine Aggregates.
 - 4. ASTM C-136 - Test method for sieve analysis of Fine and Coarse Aggregates.
 - 5. ASTM C-140 - Testing for sampling and testing Concrete masonry and related units.
 - 6. ANSI A326.3 - Dynamic Coefficient of Friction.
 - 7. ASTM C-1028 - Static Coefficient of Friction.
 - 8. ASTM C-1262 - Test Method for Evaluating Freeze-Thaw Durability.
 - 9. WTCL 99 - Load Carrying Capacity.

1.04 SUBMITTALS

- A. Submit under provisions of Section 01 30 00.
- B. Product Data:
 - 1. Manufacturer's data sheets on each product to be used, including preparation instructions, installation methods, storage, handling requirements and recommendations.
 - 2. Submit test results for compliance with performance requirements specified herein.
 - 3. Submit written instructions for recommended maintenance.
- C. Shop Drawings:

1. Layout drawings of each paved area showing the pattern of pressed pavers, indicate pavers requiring cutting, drainage patterns, drains and relationship of paving joints. Include details of setting beds, noting all materials and their thickness, and show details at curbs and vertical surfaces.
 2. Details of custom (nonstandard) curbs and stair tread/risers, include methods of installation.
- D. Samples:
1. Submit sample to be selected by Architect / Engineer / Landscape Architect / Owner from manufacturer's available standard and custom colors.

1.05 QUALITY ASSURANCE

- A. **Manufacturer Qualifications:** All products covered under this Section shall be produced by a single manufacturer, unless otherwise specified, with a minimum of fifteen (15) years proven production of this concrete paver product.
- B. **Installer Qualifications:** Installer shall have a minimum of five (5) years proven specialized construction experience with this product and be capable of estimating and building from blueprint plans and details, in addition to proper material handling. All work must comply with local, state/provincial licensing and bonding requirements.

1.06 MOCK-UP INSTALLATION

- A. Prior to the start of pressed concrete paver work, construct mock-up of each type of pressed paver size and pattern area for the owner and architect to review. The mock-up will be at the project site or at a location mutually agreed to by the owner and contractor.
 1. Construct the mock-up installation in a minimum 4-foot by 4-foot area of typical concrete units and slabs with all setting beds, joints, edge and curb details as shown on the drawings.
 2. After review of the mock-up, it will be retained and used as a standard of quality for the pressed concrete paver work. At completion of the work, remove the mock-up installations and related materials from the project site. If the mock-ups are incorporated in the actual construction, record their locations and sizes on the actual built record drawings for the project.

1.07 DELIVERY, STORAGE AND HANDLING

- A. In accordance with provisions of Section 01 60 00.
- B. Pressed concrete pavers to be banded on pallets and delivered in original unopened packaging with legible manufacturer identification, manufacturing number and manufacture date.
- C. Protect pressed concrete pavers during shipment, storage and construction against damage.

1.08 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity and ventilation). Do not install products under adverse environmental conditions.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturer:
 - 1. Wausau Tile, Inc. | 1.800.388.8728 | info@wausautile.com | www.wausautile.com
- B. Choose from:
 - 1. H-Series: EcoPremier, Estate, Estate II, Frontier, Galaxy, Quattro Series, Ridgeline and Riverside.
 - 2. V-Series: Apex, Aurora, Ballast, Blasted Glass, Brilliance, EcoPremier, ExpoStone, Expressions, Exterior Terrazzo, Granitex, Northern Lights, Ocean View, Riverbend, Sand Series, Series Sesto, Stoney Creek, Textured Granite, Timber, UltraFace and Washed Glass.
- C. Substitutions: Not permitted.
- D. Pressed concrete pavers, equal in appearance and function and meeting these specifications, will be acceptable when the specified submittals from Section 00 26 00 are approved in writing by the Architect prior to bid.

2.02 MATERIAL REQUIREMENTS

- A. The pressed paver system shall include the following components:
 - 1. *Portland Cement*: ASTM C-150 specifications for Portland Cement,
 - 2. *Aggregates*: All aggregates are tested in accordance with ASTM C127, ASTM C128, and ASTM C-136 specifications. Aggregate shall be blended to meet individual project requirements.
 - 3. *Coloring*: Pigments used shall be inorganic and alkali resistant and used per manufacturer's recommendations.
 - 4. *Factory Applied Sealer*: Colorless slip and stain resistant penetrating or acrylic sealer.

2.03 PERFORMANCE REQUIREMENTS*

**Performance Requirements based on 24"x24"x2" pressed paver*

- A. H-Series
 - 1. *Compressive Strength*: (ASTM C-140) The average compressive strength shall not be less than 9,500 psi with no individual unit less than 8,000 psi.
 - 2. *Water Absorption*: (ASTM C-140) The average shall not be greater than 4.5 percent.
 - 3. *Flexural Strength*: (ASTM C-140) Shall not be less than 1800 lbs. avg.
 - 4. *Center Load*: (WTCL 99) Pressed paver units shall have a tested center load capacity of 2,000 lbs.
 - 5. *Freeze/Thaw*: (ASTM C-1262) Durability of the pressed paver shall meet the freeze/thaw tests per Section 8, shall have no breakage and not greater than 1 percent loss in dry weight of any individual unit when subject to 100 cycles of freeze/thaw.
 - 6. *Dynamic Coefficient of Friction*: (ANSI A326.3): Wet: ≥ 0.42
 - 7. *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.

B. V-Series

1. *Compressive Strength:* (ASTM C-140) The average compressive strength shall not be less than 8,000 psi with no individual unit less than 7,500 psi.
2. *Water Absorption:* (ASTM C-140) The average shall not be greater than 6 percent.
3. *Flexural Strength:* (ASTM C-140) Shall not be less than 1200 lbs. avg.
4. *Center Load:* (WTCL 99) Pressed paver units shall have a tested center load capacity of 1,850 lbs.
5. *Freeze/Thaw:* (ASTM C-1262) Durability of the pressed paver shall meet the freeze/thaw tests per Section 8, shall have no breakage and not greater than 1 percent loss in dry weight of any individual unit when subject to 100 cycles of freeze/thaw.
6. *Dynamic Coefficient of Friction:* (ANSI A326.3): Wet: ≥ 0.42
7. *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.

2.04 INSTALLATION MATERIALS

A. Sand Setting Bed - Pedestrian

1. (Optional) Place a layer of the specified geotextile filter fabric uniformly on the surface of the properly prepared grade that is ready to receive the sand setting bed. Cover the designated area in its entirety.
2. Place solid steel, 3/4-inch or 1-inch thick, control bars directly on the sand or geotextile filter fabric. Install shims under bars for minor adjustment of depth and finish pressed paver elevations and slopes. Space bars approximately 7 feet apart and parallel to each other to serve as guides for strike-off boards. Spacing can vary as determined by the size of the area and layout.
3. Place sand setting bed between control bars on the sand or geotextile filter fabric to not less than thickness of the designated control bars. Spread material and strike off by pulling the material with a 8-foot long by 2-inch by 6-inch wood board several times to produce a smooth, firm and even setting bed. Add fresh material in low areas 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 and any shims.

PART 3 – EXECUTION

3.01 INSPECTION

- A. Examine all jobsite surfaces to receive the parts of the paving materials. Notify the contractor in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected. Installation of pressed concrete pavers and associated construction constitutes acceptance of the adjacent and

underlying construction.

Wausau Tile architectural paver

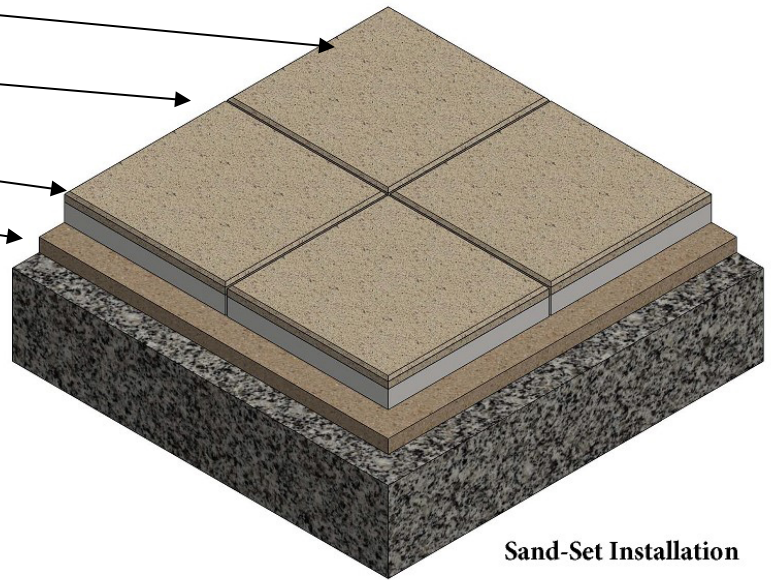
Typical joint is 1/8" to 3/16"

Typical edge condition is 3/16" Chamfer

Sand setting bed (3/4" to 1" thick)

6" - 8" compacted road-grade gravel (#6)

For pavers installed on an incline,
Filter cloth is recommended to
Stabilize the setting bed



Sand-Set Installation

3.02 INSTALLATION

A. Install in accordance with contributing manufacturer's instructions. Installation

requirements vary for each individual project site. Pressed pavers used, pattern, grid layout, starting point and finished elevation should be shown on plan view shop drawings which have been prepared and approved by the designer, installing contractor and/or owner.

1. Install pressed concrete pavers in patterns, allowing for surface drainage as shown on the drawings. Install pressed concrete pavers in accordance with the manufacturer's installation instructions and the final reviewed shop drawings.
2. Lay out pavement in 30-foot working area modules. Set pressed concrete pavers on sand setting bed in patterns shown on the drawings with hand tight joints 1/8-inch to 3/16-inch wide joints and uniform top surfaces.
3. Field cut pressed concrete pavers in accordance with manufacturer's recommendations for methods, equipment and precautions.
4. Maintain accurate alignment and check for creep and shrinkage. Make adjustments to creep and shrinkage within the 30-foot module area.
5. Install edge restraints where required and as shown on the architectural drawings and details.
6. Sweep fine dry polymeric sand of a type and color approved by the architect over pavement surface to fill joints immediately after installing pressed pavers, slabs and curbs on setting bed. Brush in polymeric sand until joints are completely filled, remove surplus sand. Do not allow traffic on installed pressed pavers, slabs or curbing until the joints have been filled.
7. Protect newly laid pressed 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 pressed pavers, slabs and curbs.

8. Install the specified joint filler where pressed concrete pavers abut curbs vertical surfaces and other construction.
 9. Final cleaning to remove all soiling from pressed pavers for final acceptance.
- B. Placement Tolerance:
1. Maximum of 1/16-inch (1.6 mm) height variation between adjacent pavers.
 2. Individual pressed pavers shall not vary more than 1/16 inch (1.6 mm) from level across width of the pressed paver.
 3. Paved areas shall not vary more than 1/4 inch (6 mm) 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 greater than 1/16 inch (1.6 mm).

3.3 CLEANING AND PROTECTION

- A. Remove and replace pressed pavers which are loose, chipped, broken, stained or otherwise damaged, or if units do not match adjoining units as intended. Provide new units to match adjoining units and install in same manner as original units with same joint treatment to eliminate evidence of replacement.
- B. Wash entire surface with phosphate free neutral cleaner, rinse with clean water and allow to dry thoroughly.
- C. Apply sealer in accordance with manufacturer's directions.
 1. Penetrating or topical type sealer designed especially for pressed concrete pavers.