

## **Pressed Concrete Pavers - Bituminous Set Installation Guide Specifications**

### **Section 32 14 13**

#### **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-1262 - Test Method for Evaluating Freeze-Thaw Durability.
  - 8. ASTM C-144 - Specification for Aggregate used in Masonry Mortar.
  - 9. ASTM D-3381 - Specification for Asphalt Cement.
  - 10. ASTM D-2028 - Specification for Cutback Petroleum Asphalt.
  - 11. ASTM D-994 - Specification for Preformed Expansion Joint Filler.
  - 12. WTCL 99 - Load Carrying Capacity.
- B. Tile Council of America (TCA)
  - 1. TCA F102 - Installation Method Cement Mortar Bonded.
- C. American National Standards Institute (ANSI)
  - 1. ANSI A-118.4 - Latex Portland Cement Mortar.
  - 2. ANSI A-118.6 - Cement Grouts.

##### **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.



## WAUSAU TILE

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:  $\geq 0.42$
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:  $\geq 0.42$
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. Asphalt Setting Bed Materials:

1. *Asphalt Cement:* ASTM D 3381, 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 C 136.
3. *Mixing:* Provide plant mixed asphalt setting bed by combining dry fine aggregate (approximately 93 percent) and hot asphalt cement (approximately 7 percent) and heat to approximately 300 degrees Fahrenheit. Provide each ton of setting bed material apportioned by weight with the approximate ratio of 145 lbs. of asphalt to 1,855 lbs. of sand.

### B. Setting Bed Primer: Cut back asphalt, ASTM D 2028, grade as recommended by the asphalt paving manufacturer.

### C. 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 Fahrenheit.

- D. Joint Filler Materials: Sand conforming to ASTM C 144 with 100 percent passing a No. 16 sieve.
- E. Pre-formed Asphalt Joint Filler: ASTM D 994, 1/2-inch thick for expansion joints.

## 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 edge condition is 3/16" chamfer

2% modified neoprene tackcoat

3/8" thick bituminous

Setting bed

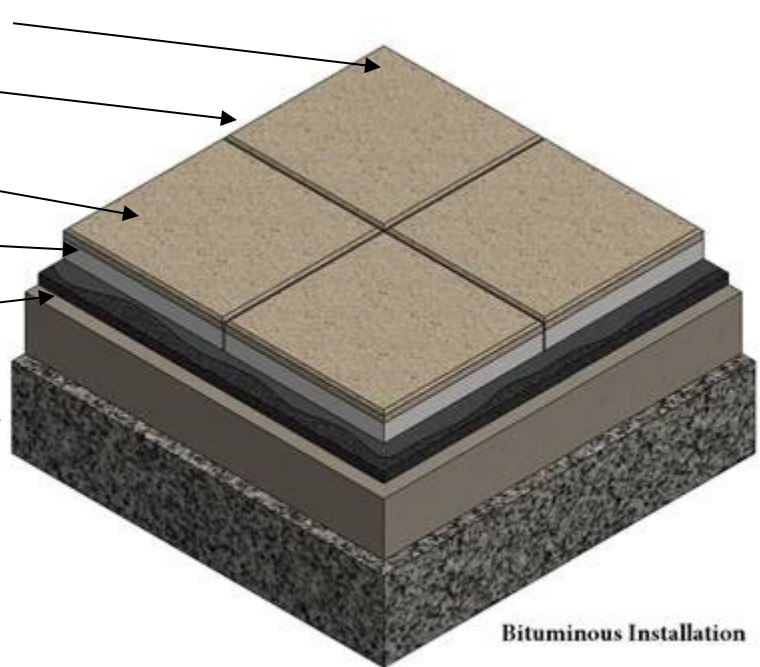
4" concrete or 2" - 4"  
bituminous binder

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

For vehicular applications:

6" concrete or 3" - 6" bituminous binder

And either 8" - 12" compacted road-grade  
gravel (#6) or 10"-12" compacted gravel.



### 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.
- 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.



## WAUSAU TILE

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.